Volume 4, Number 4 Fall 2011

WINGMAN

Airmen Taking Care Of Airmen

The United States Air Force Journal of Aviation, Ground, Space and Weapons Safety

Top Bird/Wildlife Aircraft Strike Hazards

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FEATURES

AVIATION

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AVIATION

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Front cover photo by Tech. Sgt. James T. May III

Correction: The article, "Personal Watercraft – How Informed are YOU?" which appeared on pages 34-35 of the summer 2011 issue of Wingman, listed New Mexico's boating licensing laws as NO for "Mandatory Safety Education," NO for "Mandatory Operator Licensing" and n/a for "Is License Certificate Dependent on Passing Exam." The correct answer is YES for "Mandatory Safety Education," NO for "Mandatory Operator Licensing" and YES for "Is License Certificate Dependent on Passing Exam." Special thanks to Officer Stephen Verchinski, New Mexico State Parks Boating Safety Education Program coordinator, for this catch.

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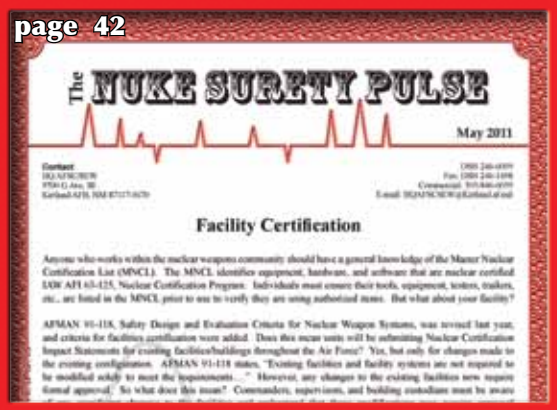

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The NUKE SURETY PULSE

May 2011

Facility Certification

WEAPONS

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Background photo by Senior Master Sgt. Kim Frey

Fall — Season for Safety

MAJ. GEN. GREG FEEST
Air Force Chief of Safety and
Commander, Air Force Safety Center
Kirtland AFB, N.M.

It's that time of year again. Temperatures start getting cooler, leaves start turning colors, children are back in school and a tinge of a cool breeze fills the air. Fall is a favorite season for many, but it also presents the highest risk to aviation. We see the largest migration of birds in the fall and that increases the odds of bird strikes.

In fact, there have been more than 2,500 strikes per month in September and October for the past four years compared to about 500 per month from December to February.

The Air Force Safety Center's BASH Team manages the Avian Hazard Advisory System, which provides the Air Force aviation community with a near real-time tool for making informed decisions when selecting flight routes. The system monitors bird activity and forecasts bird strike risk.

While Airmen can mitigate the chances of bird strikes in the air, this issue of ***Wingman*** highlights some of the actions Airmen can take to minimize hazards on airfields. Other stories in the aviation section discuss the differences of visual signals between the services, safety in airfield management and factors to consider when deciding whether to eject from an aircraft.

As 2011 is the Year of Motorcycle Safety, our ground section continues with emphasis on motorcycle safety. Two authors give first-hand accounts of their riding experiences and the lessons they learned while another talks about the role an anti-lock braking system can play in preventing motorcycle mishaps and fatalities.

We've also included a commentary from a squadron commander who talks about what a DUI by one his Airmen meant to his squadron and the importance of taking care of our fellow Airmen.

One of our space articles emphasizes the importance of testing space systems like you're going to fly them. The other article discusses reporting breaches to computer systems.

In our weapons section, you'll find the latest *Nuke Surety Pulse* bulletin and information on weapons safety training courses.

Finally, I want to let you know that this is going to be the last hardcopy issue of the ***Wingman*** magazine. Don't worry … we'll still publish ***Wingman***; however, the magazine will be delivered in online format only at http://www.wingmanmagazine.af.mil starting with the winter edition. While times are changing and funds are short, we'll never shortchange you – our readers. Thank you for your continued support of ***Wingman***. ☆☆

U.S. Air Force photo by Dennis Spotts

Thinking Joint:

Understanding Differences in Visual Signals

CAPT. JOHN D. WILSON
58th Fighter Squadron
Eglin AFB, Fla.

There you are, flying your F-16 in the midst of a 42-ship large force exercise in the Barry M. Goldwater Range, Ariz. It's a mix of F-16s from Luke AFB, Ariz., Singaporean F-16s, Taiwanese F-16s, KC-135s and F-5s from Marine Corps Air Station (MCAS) Yuma, Ariz., and F-18s from MCAS Miramar, San Diego, Calif. On your egress approaching "good guy land," you merge with an F-18 and wrap it up before gunning him and flowing back toward the forward edge of the battle area (FEBA). Crossing the FEBA, you look out, and there on your wing is that same F-18. He's flying 2,000-foot line abreast and rocking his wings. You rock back, and the F-18 slowly rejoins to close.

He points to his ear and his mask and gives you a thumbs down – non-standard visual signals – but you get the gist and figure out he is completely no radio (NORDO). He gives you a hydraulic electrical fuel oxygen engine (HEFOE) sign for electrical problems, and you opt to take him back to Luke AFB. He also pats his dashboard, but you have no idea what that means, so you overfly Gila Bend enroute to Luke AFB.

That's when the fun starts. You give him a porpoise sign to move him to tactical formation, and he rejoins to close. You rock him into close, and he goes out to tactical formation. You query his fuel state, and he tells you he has 2,100 pounds. Unfortunately, you don't

U.S. Air Force photo by Staff Sgt. Shane A. Cuomo

U.S. Air Force photo by Master Sgt. John E. Lasky

know if that's a good or bad thing for a Hornet. You manage to lead the formation back to Luke AFB. All the while, your blood pressure is rising as you have issues communicating using what you think are standard visual signals. You finally get back to Luke AFB, and, on five-mile final with clearance to land, you pass him the lead. He takes the lead as he passes your 3/9 line, and he gives you a circular motion that looks like he's winding an imaginary crank. There's still a question mark over your head as he lowers the gear, slows to 150 knots indicated airspeed (KIAS) and spits you out in front. Unable to slow enough to get back to chase, you go to initial and watch him land from downwind. All the while, you're wondering why you weren't on the same page as the F-18.

The above scenario is plausible in today's environment of joint operations. Having the chance to fly extensively with pilots trained by the Navy has highlighted several deficiencies in my knowledge of how they operate and talk. More important than highlighting what I didn't know, it's proved wrong many of the things I thought I did know. The next page contains a chart I came up with of the common visual signals and the differences in execution and terminology. Keep in mind this isn't an exhaustive list. Night NORDO signals are beyond the scope of this article but also have many substantial differences between the services.

U.S. Air Force photo by Tech. Sgt. Michael R. Holzworth

U.S. Air Force photo by Tech. Sgt. Wolfram M. Stumpf

Common Aircraft Visual Signals		
Visual Signal	**Air Force**	**Navy/Marine Corps**
Line Abreast/Tactical	Porpoise	Called Combat Spread: Wing rock or push away with hand.
Route	Rudder kick or push away with hand.	Called Cruise: Thumbs back x2.
Close	Wing rock	Called Parade: Tap shoulder.
Lead Change	Point forward with finger two-three times followed by wingman position number. Wingman acknowledges by tapping helmet and nodding.	Tap helmet and point to wingman. Wingman acknowledges by tapping helmet, pointing forward and looking straight ahead.
Pitchout	Stirring motion with index finger pointed up.	"Kiss off": Closed hand by helmet, hand moves toward wingman and opens up.
Battle Damage Check	Cocked Gun	Same as Air Force
Ejection	Face Curtain	Same as Air Force
Gear Down	Thumbs down motion made behind the helmet.	Circular motion ("cranking" the gear down)
NORDO	Tap ear/mouth with flat open hand in circular motion in front of mouth/ear.	Tap mouth or ear followed by thumbs down.
Descend to Lower Altitude	Hand flat, lower from top of canopy, simulating descent.	Hand flat, lower from top of canopy, simulating descent.
I Must Land Immediately	Thumb pointed down at the top of the canopy with rapid up/down motion.	Pat dashboard.
I Must Land on Your Wing	Pat shoulder with opposite hand.	None
Desire to Land	Hand flat, lower from top of canopy, simulating descent with "round-out" at bottom.	None
HEFOE	Air Force Standard	Same as Air Force
Speedbrakes	With thumb touching tip of fingers and all fingers together, open hand to mimic speedbrake opening.	Same motion but rotated 90 degrees (opening motion parallel to horizon). Flaps signal corresponds to Air Force speedbrake signal.
Drag/Take Spacing	Forward/back motion with thumb pointed back behind the helmet.	None
Fuel	Air Force Standard	Same as Air Force
Dissimilar Fuel	Number of fingers equates to ten-minute blocks of usable fuel (three fingers indicate 30-39 minutes of fuel).	No visual signal besides normal fuel check in pounds.
Approach Speed	"I must land on your wing" followed by number of fingers at top of canopy commensurate with airspeed more than 130 KIAS.	

TOP BASH HAZARDS

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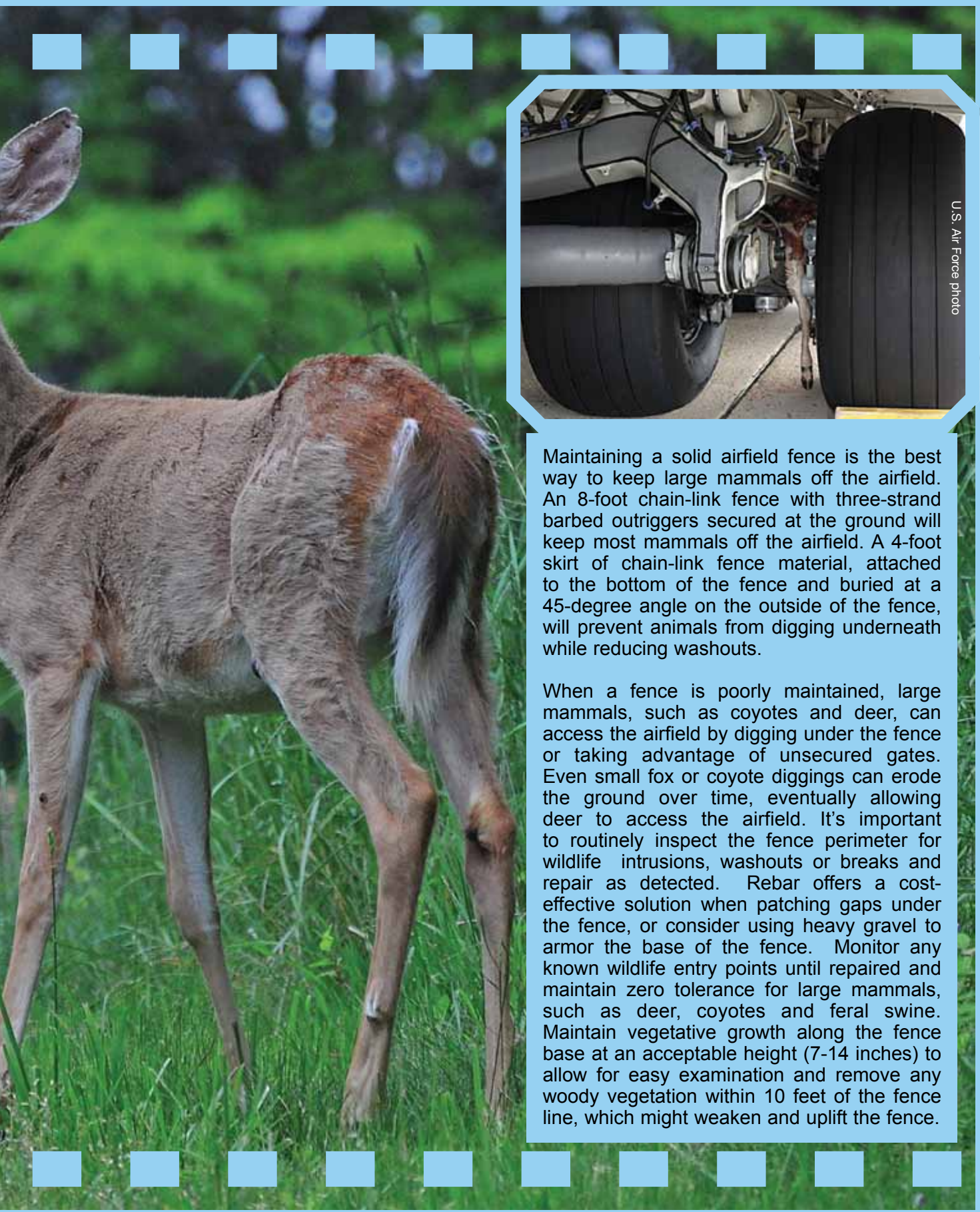
By conducting staff assistance visits at various airfields over the past few years, the BASH Team has identified several recurring hazards that are worth addressing. Many airfields have compromised fence lines, poor drainage, grass heights that are out of compliance and BASH plans that delegate responsibilities to organizations that don't actually perform them. It's vitally important to understand how to properly manage the airfield environment to mitigate wildlife hazards to our Airmen and aircraft.

Photo by Dennis Spotts



U.S. Air Force photo

Maintaining a solid airfield fence is the best way to keep large mammals off the airfield. An 8-foot chain-link fence with three-strand barbed outriggers secured at the ground will keep most mammals off the airfield. A 4-foot skirt of chain-link fence material, attached to the bottom of the fence and buried at a 45-degree angle on the outside of the fence, will prevent animals from digging underneath while reducing washouts.

When a fence is poorly maintained, large mammals, such as coyotes and deer, can access the airfield by digging under the fence or taking advantage of unsecured gates. Even small fox or coyote diggings can erode the ground over time, eventually allowing deer to access the airfield. It's important to routinely inspect the fence perimeter for wildlife intrusions, washouts or breaks and repair as detected. Rebar offers a cost-effective solution when patching gaps under the fence, or consider using heavy gravel to armor the base of the fence. Monitor any known wildlife entry points until repaired and maintain zero tolerance for large mammals, such as deer, coyotes and feral swine. Maintain vegetative growth along the fence base at an acceptable height (7-14 inches) to allow for easy examination and remove any woody vegetation within 10 feet of the fence line, which might weaken and uplift the fence.


U.S. Air Force photo

Standing water on an airfield is also a chief BASH concern. Standing water attracts several hazardous bird groups, such as wading birds, shore birds and waterfowl. It's extremely attractive to dabbling ducks, such as mallards, who often roost in these low, wet areas overnight. Ducks are susceptible to flushing by predators at night into the flight path of aircraft.

Ponding should be actively prevented by conducting surveys following rain and recording areas collecting water. Work with civil engineering to re-grade low-lying areas that retain water for more than 24 hours to allow for proper drainage. Until drainage improves, use harassment, exclusion or repellents after rain to mitigate wildlife hazards. It's also extremely important to keep all drainage ditches free of excess vegetation. Overgrown ditches provide food and cover for a variety of wildlife, inhibit water flow, slow evaporation and increase sedimentation.

Vegetative cover is a functional part of almost every airfield, reducing dust and protecting the soil from jet wash around runways and taxiways. If left unchecked, it can reduce visibility and cause pavements to spall along runway edges. The 7- to 14-inch standard, in accordance with Air Force Instruction 91-202, *The US Air Force Mishap Prevention Program*, is a good general guideline for managing vegetative cover. The standard is designed to minimize the frequency of mowing operations and benefit growing conditions while providing minimal wildlife attraction. Be careful when cutting long grass, as heavy thatch can accumulate in rows and choke the turf underneath. Long-term mismanagement causes turf stress, opens areas to weed growth and makes the airfield more attractive to birds. Actively identify what weeds are present on the airfield, select the most effective herbicide to clear them and remove old pavement surfaces. Replace cleared areas with a grass species similar to the remaining airfield to create a uniform habitat type. Use caution when re-seeding on an airfield due to the attractiveness of loose seed to many bird species; consider hydroseeding or sod.


U.S. Air Force photo

Fescue is a grass species that provides a poor habitat for wildlife. Tall fescue is a thick, sod-forming turf grass that limits the movement of wildlife, such as birds and rabbits. The thick growth often eliminates all other species of plants from growing, creating a monoculture habitat around the airfield. Pure stands of fescue lack the necessary diversity to provide the habitat components required to support a variety of wildlife species. In addition, the fungal endophyte associated with certain fescue varieties produces noxious chemicals that cause gastric distress and inhibit the uptake of nutrients by the digestive system in many animals, including Canada geese.

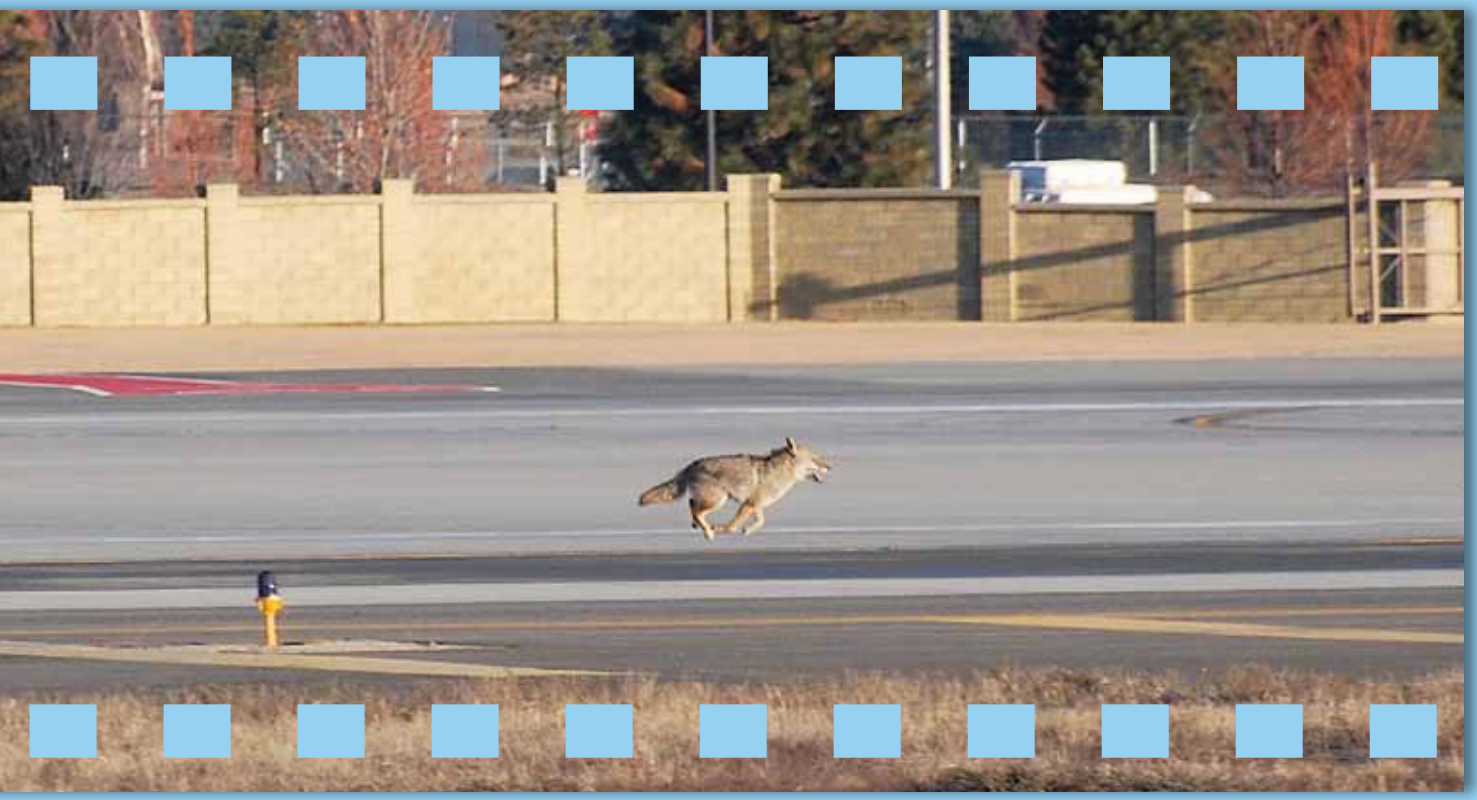
Desert environments pose unique challenges to airfield safety, as cutting desert vegetation is difficult and can create new hazards if not done properly. It also requires continued upkeep, particularly in wet years. Removing airfield vegetative cover through "blading" eliminates the vegetation for several years at a time. The soil will need to be compacted after vegetation removal and will harden naturally over time when wetted. Maintaining a bare airfield below directed height standards requires a waiver from the BASH Team at the Air Force Safety Center if any vegetation naturally occurs on the airfield.

Finally, a well-executed BASH plan is necessary to successfully exclude wildlife from the airfield.


U.S. Air Force photo

It's crucial for agencies to delineate, carry out and evaluate their responsibilities and taskings. All agencies involved in the implementation of the BASH plan must annually review their responsibilities and forward their comments to their safety office. Be sure to involve the appropriate level of people executing the BASH plan in the annual review. The plan, as written, must accurately reflect what is actually executed during BASH operations.

Properly managing airfield fence lines, drainage and vegetative cover yields huge benefits for safety by excluding large mammals from the airfield and minimizing the attractiveness of the airfield environment to all wildlife. A solid BASH plan is crucial to delineate responsibilities, promote cooperation between agencies and prevent wildlife-related mishaps.



Promoting Airfield Ma

KEN NEITZEL
Air Force Plant 42
Palmdale, Calif.

During initial orientation, the new airfield manager (AM) noticed that there were an inordinate number of drivers crossing the runways rather than driving around the perimeter road. His initial investigation found about 114 drivers a day were crossing the runways to the opposite side of the airfield. With each driver crossing two runways, the actual number of runway crossings coordinated with the Air Traffic Control Tower (ATCT) was double that. Seeing this as a serious and unnecessary safety-of-flight risk, the AM prepared a point paper that included a risk analysis and presented it to his commander. The paper outlined the safety implications of allowing drivers to cross the runways for convenience. Included was a five-year history documenting an average of 2.4 runway incursions a year. The AM further illustrated the risk by showing that two out of the 12 documented incursions were "close calls" that could have resulted in the loss of an aircraft and/or life.

The point paper was briefed at the next airfield operations board meeting. Each organization on base was provided a copy of the point paper and was tasked to provide input to the commander. After consulting with other organizations, the commander decided not to support the AM due to the cost of lost time to drive around the perimeter road rather than cross. When the AM attempted to re-engage suggesting that the time lost was minimal compared to the risk, the commander

U.S. Air Force photo by Tod Love

Safety in nagement

suggested that the AM was new to the position and that he should take some time to settle in and gain some perspective. Seeking to ensure the maximum safety of flight without challenging his new commander, the AM reviewed the airfield driving program to ensure airfield drivers understood the risk and were properly trained. He found that the ATCT was approving dual-runway crossings with a single call. Realizing that this was "a recipe for disaster," the AM immediately wrote new procedures to the local airfield driving instruction, requiring drivers to stop at the hold line and request permission to cross that runway at that location. When approved to cross, they were required to cross the hold line on the opposite side and report crossing complete. The driver would then proceed to the next crossing point, stop and make the call to cross at that point. The ATCT added the new procedures to the local instruction.

Six months later, during a shift change, a security patrol officer with more than seven-years experience driving on the installation stopped at the hold line and applied proper radio procedures requesting permission to cross Runway 4/22 at Taxiway Romeo. When approved, the security patrol officer crossed and reported crossing complete. While driving across the airfield, the driver again contacted the ATCT and requested permission to cross Runway 7/25 at Taxiway Lima. The ATCT responded with hold short for departing traffic. The driver read back the instructions; however, he drove across the runway anyway. Realizing his mistake, the driver immediately turned around and drove back across.

The following year, a sweeper crossed a hold line without ATCT permission causing an incursion reported by a C-130 crew, and, later in the year, a security vehicle followed a fire vehicle across the runway during an emergency response without contacting the ATCT. The AM once again engaged the commander and provided him with the average time required to drive around the airfield on the perimeter road versus the average time required to check tires, stop at each runway hold line and request permission to cross. The difference was less than three minutes, and that would often be offset by hold short instructions for aircraft operations. Safety of flight was once again stated as the primary concern. The commander stated that the AM had done an outstanding job during the past year, and he was certain that the improvements already made would ensure safety of flight. The commander also noted that neither runway incursion was caused by a driver crossing the runway as a matter of convenience.

The aircraft had begun its takeoff role and pulled up early. The pilot estimated that the aircrew missed the security vehicle by 50 feet. Why did this driver cross after reading back the hold short instructions? The driver, having failed to stop before making his radio call, was already in motion because he expected to be approved. Following this "close call," the commander asked to see the point paper again and the time required to cross versus driving around the airfield.

That was the last day that any vehicle crossed the runway at that airfield as a matter of convenience. This was followed by seven years with zero runway incursions! Please take this to heart … we have always done it that way and no one has been killed is NOT the right answer!

MAJ. JEFFREY GALLOWAY
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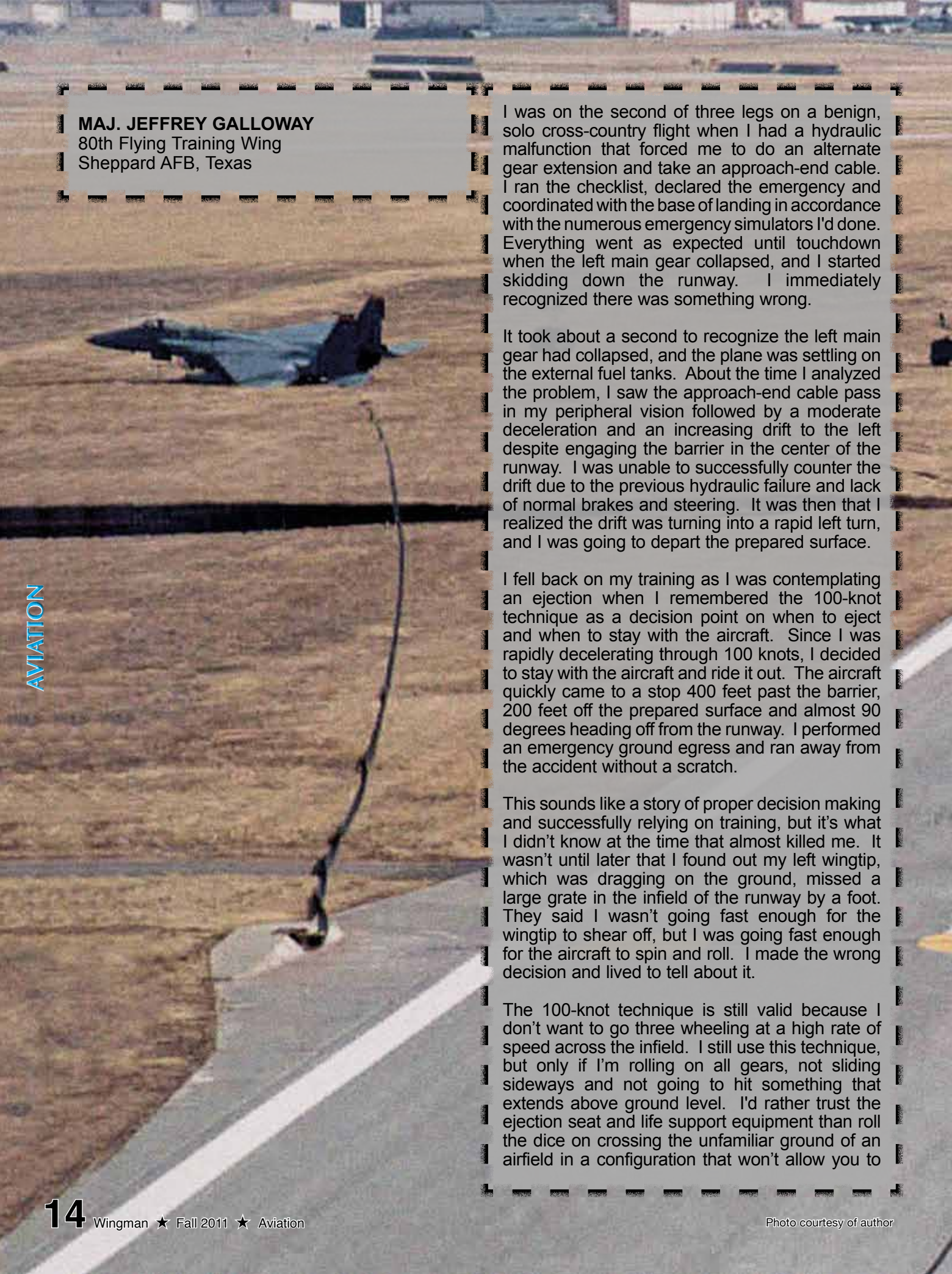


I was on the second of three legs on a benign, solo cross-country flight when I had a hydraulic malfunction that forced me to do an alternate gear extension and take an approach-end cable. I ran the checklist, declared the emergency and coordinated with the base of landing in accordance with the numerous emergency simulators I'd done. Everything went as expected until touchdown when the left main gear collapsed, and I started skidding down the runway. I immediately recognized there was something wrong.

It took about a second to recognize the left main gear had collapsed, and the plane was settling on the external fuel tanks. About the time I analyzed the problem, I saw the approach-end cable pass in my peripheral vision followed by a moderate deceleration and an increasing drift to the left despite engaging the barrier in the center of the runway. I was unable to successfully counter the drift due to the previous hydraulic failure and lack of normal brakes and steering. It was then that I realized the drift was turning into a rapid left turn, and I was going to depart the prepared surface.

I fell back on my training as I was contemplating an ejection when I remembered the 100-knot technique as a decision point on when to eject and when to stay with the aircraft. Since I was rapidly decelerating through 100 knots, I decided to stay with the aircraft and ride it out. The aircraft quickly came to a stop 400 feet past the barrier, 200 feet off the prepared surface and almost 90 degrees heading off from the runway. I performed an emergency ground egress and ran away from the accident without a scratch.

This sounds like a story of proper decision making and successfully relying on training, but it's what I didn't know at the time that almost killed me. It wasn't until later that I found out my left wingtip, which was dragging on the ground, missed a large grate in the infield of the runway by a foot. They said I wasn't going fast enough for the wingtip to shear off, but I was going fast enough for the aircraft to spin and roll. I made the wrong decision and lived to tell about it.

The 100-knot technique is still valid because I don't want to go three wheeling at a high rate of speed across the infield. I still use this technique, but only if I'm rolling on all gears, not sliding sideways and not going to hit something that extends above ground level. I'd rather trust the ejection seat and life support equipment than roll the dice on crossing the unfamiliar ground of an airfield in a configuration that won't allow you to

Photo courtesy of author

Shaping the Ejection Decision

roll over small obstacles. This technique is also supported by another mishap where the aircraft was sliding off the runway sideways. Since the speed of the aircraft was less than 100 knots, the aircrew stayed in it. When the aircraft departed the prepared surface, the gear dug in; the aircraft rolled and luckily landed right side up sparing the crew.

This natural hesitation and reluctance to eject is not only confined to ground ejections. Another mishap reshaped my airborne ejection decision. Aircrew can tell you the minimum controlled and uncontrolled ejection altitudes of their specific seat, but how do you apply them? I was taught if the aircraft is not recovering to controlled flight when you approach the minimum uncontrolled ejection altitude, then eject. I had to adjust my thinking after a mishap where the aircraft was recovering when it was approaching the minimum uncontrolled ejection altitude, then it went out of control again below the minimum uncontrolled ejection altitude.

Making judgments about why the aircraft is out of control and basing your assumptions on aircraft recovery on that judgment is risking your life if you descend through the minimum uncontrolled ejection altitude. After this revelation, I adjusted my ejection decision to being recovered, not just recovering when approaching the uncontrolled ejection altitude.

These first two examples require split-second decision making which is why we try to make the decision prior to flight. But even in more benign situations during controlled flight, we don't want to make the decision to eject and want to save the aircraft. I've seen warnings in the Dash-1 aircraft manual along the lines of, "Do not delay ejection below the minimum controlled ejection altitude in futile attempts to start the engines or for reasons that may commit you to an unsafe ejection." Despite this, aircrews repeatedly violate this warning. Since my hands are most likely on the throttle and stick at the time of the event, I can quickly attempt to recover the aircraft to sustained flight using boldface emergency procedures. If this attempt doesn't work resulting in immediate positive indications of returning to sustained flight and I'm unable to zoom the aircraft above the minimum controlled ejection altitude, then it's time to eject.

Every second you delay in making the decision to eject, you risk your life. It's not the time to trust your luck. It's time to jettison the aircraft and trust the modern ejection seats which have an excellent survival rate ... if you eject in the envelope.

Dealing with Compound Emergencies

ANONYMOUS

There I was, flying in the right seat of my C-130 coming home from the AOR. The trip to the sand box had gone smoothly. After spending a night downrange, we loaded up to start the journey back. What we didn't suspect at the time was that this would be the day we'd fall behind schedule and be tested in a way no one on the crew had been before.

I was still relatively new to my squadron having only been there approximately six months straight out of the schoolhouse. While we were flying somewhere over the Mediterranean Sea, someone noticed an engine oil low light. In my short career, I'd already seen a couple of prop low oil lights but never an engine oil low light. From the light, our eyes quickly shifted up to the oil gauges to see which engine was having

Department of Defense photo by Fred W. Baker III

the issue, and it was obvious when we saw that No. 4 was completely empty! Normally, the light will come on at approximately four gallons remaining, which told us this engine must have lost its oil very quickly. After the shutdown, we discussed our options as a crew and checked the regulations. We were enroute to Royal Air Force Mildenhall, U.K., and having maintenance there and a favorable weather forecast, we decided to continue our trip. However, if you've been flying very long, you know that forecasts aren't always spot on.

Crossing the Mediterranean, we were finally back over land and closing in on the Alps. We were at 16,000 mean sea level (MSL) when the weather started to creep up to our level. From our forecast, we were only supposed to have light icing up to 14,000 MSL. As we started entering the weather, it became apparent that the icing forecast was a little "off." The Hercules has excellent anti-icing capabilities … assuming they work as advertised. By this time, we were well over the mountains and trying to climb up and out of the icing level. We then noticed neither the No. 2 engine inlet anti-ice nor the spinner de-ice was working. As the ice building up on the inlet was quickly turning into a large block of ice, we started to have visions of that engine ingesting that block.

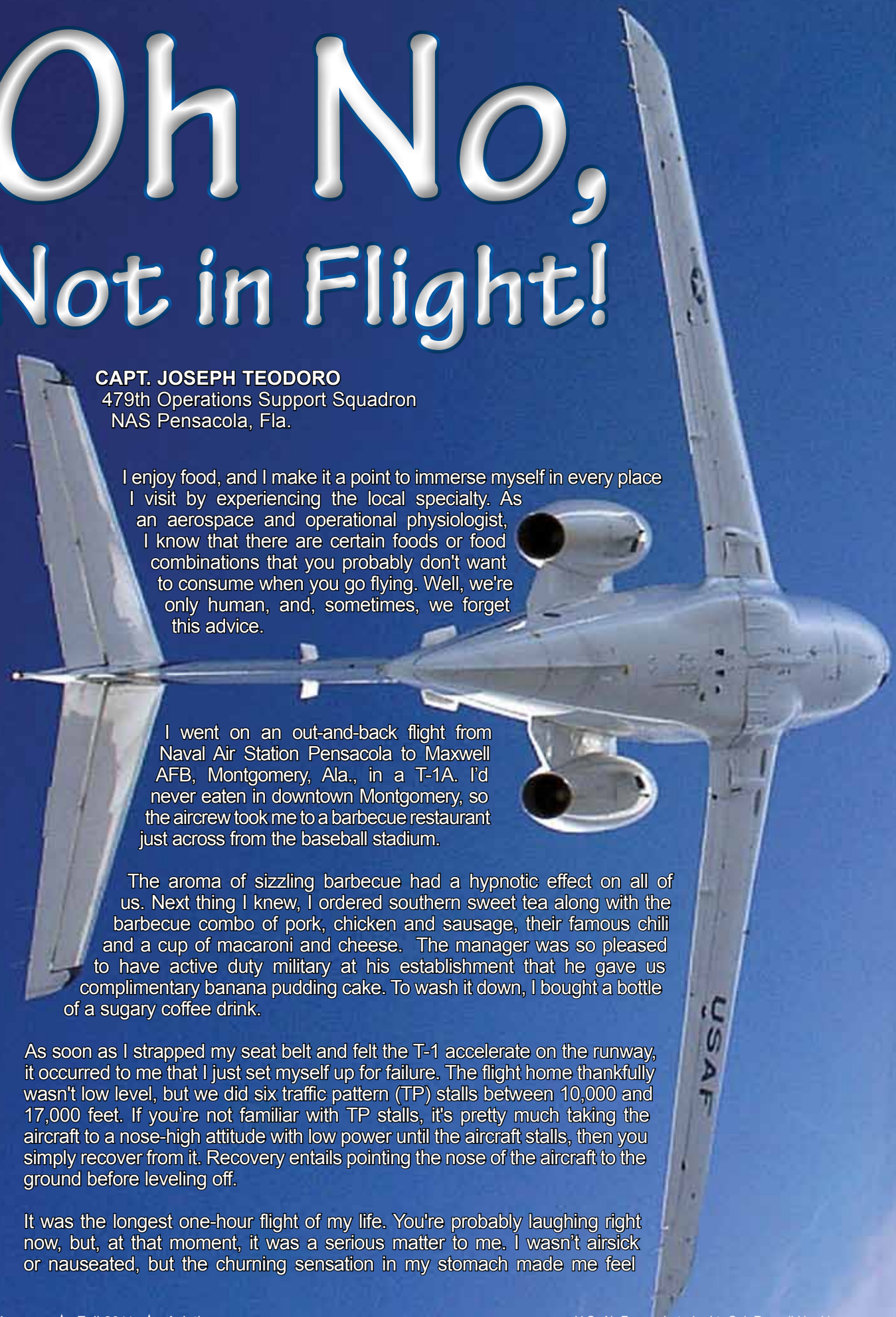
We were still over the mountains and couldn't yet descend and oh, by the way, weren't doing a very good job of climbing out of the icing either. We eventually got down to about 130 knots indicated airspeed (KIAS) with maximum power set on the remaining engines, and we just popped out of the weather. We were basically hanging on the props as we skidded along the top of the clouds. We were out of the ice but still not having a good time. Our maintainers in the back were all awake by this time and were frantically running back and forth from wing to wing trying to see what was going on out on the engines. Other maintainers were up front with the engineer trying to figure out why the anti-icing was only partially working. Our engineer accidentally received a large shock while trying to troubleshoot anti-ice issues back in the electrical equipment.

To top things off, we also received a No. 1 prop fluxing out of limits that would not correct! To recap, we had one engine shutdown, another in shutdown condition and another that could ingest a block of ice at any moment. We were flying at 130 KIAS just out of reach of the icing, the mountains were still below and there was a whole crew of maintainers who you could say was a bit "concerned."

Before things got too much worse, we finally cleared the mountains and made a high-speed descent through the icing. We found the closest piece of suitable pavement we could to put the plane down. The aircraft commander elected to not shut down the No. 1 engine with the prop malfunction. Due to the greater emergencies we were dealing with, he decided it wasn't worth shutting that one down and ending up on two engines. We landed uneventfully. The best takeaway for me in this event was dealing with compound emergencies. We had several different problems going on at once, and we really had to prioritize them. It was a great example of the old adage of "aviate, navigate and communicate." We had to decide what the greatest risk was at each particular phase in the sequence of emergencies and adjust appropriately. In the end, I think we handled a complex situation reasonably well as a crew, and I don't think I would've done anything differently had I been in the left seat.

Oh No, Not in Flight!

CAPT. JOSEPH TEODORO
479th Operations Support Squadron
NAS Pensacola, Fla.



I enjoy food, and I make it a point to immerse myself in every place I visit by experiencing the local specialty. As an aerospace and operational physiologist, I know that there are certain foods or food combinations that you probably don't want to consume when you go flying. Well, we're only human, and, sometimes, we forget this advice.

I went on an out-and-back flight from Naval Air Station Pensacola to Maxwell AFB, Montgomery, Ala., in a T-1A. I'd never eaten in downtown Montgomery, so the aircrew took me to a barbecue restaurant just across from the baseball stadium.

The aroma of sizzling barbecue had a hypnotic effect on all of us. Next thing I knew, I ordered southern sweet tea along with the barbecue combo of pork, chicken and sausage, their famous chili and a cup of macaroni and cheese. The manager was so pleased to have active duty military at his establishment that he gave us complimentary banana pudding cake. To wash it down, I bought a bottle of a sugary coffee drink.

As soon as I strapped my seat belt and felt the T-1 accelerate on the runway, it occurred to me that I just set myself up for failure. The flight home thankfully wasn't low level, but we did six traffic pattern (TP) stalls between 10,000 and 17,000 feet. If you're not familiar with TP stalls, it's pretty much taking the aircraft to a nose-high attitude with low power until the aircraft stalls, then you simply recover from it. Recovery entails pointing the nose of the aircraft to the ground before leveling off.

It was the longest one-hour flight of my life. You're probably laughing right now, but, at that moment, it was a serious matter to me. I wasn't airsick or nauseated, but the churning sensation in my stomach made me feel

U.S. Air Force photo by Lt. Col. Russell Hopkinson

extremely uncomfortable. At the end of the flight, the words "full stop" had never been so reassuring. As soon as the door opened, I thanked the crew and rushed toward you know where.

I've been to centrifuge, water survival and hypoxia training and many times have endured through 35,000-feet low-pressure chamber rides. But my experience that day made me wonder: What if I were a pilot of a single-seat aircraft? What if I were a boom operator on a refueling mission when this happens? The best way to mitigate this kind of problem is prevention. If you know you're flying, make the right choices of what you're going to eat.

You should avoid or minimize consumption of gas-producing foods, such as chili beans, spicy dishes, curry, etc. More importantly, if you do consume such food items prior to a flight, don't make it worse by eating others that might make it worse, such as cream shakes, fruit blends or other dairy products. Of course, we're all different, and some of us have the iron stomach. Our tolerances, however, can vary day-to-day based on what we're accustomed to and other physiological factors. How much we consume is definitely something to consider as well. If you are about to be full, stop and allow some time for digestion. The right foods and proper moderation are keys to prevention.

What did I do wrong? Aside from gluttony, which you already know, the other thing I did wrong was not inform the crewmembers what was troubling me, despite the fact that they did tell me to let them know if I got uncomfortable. This was failure to maintain integrity and crew resource management on my part. Although I was just an observer on this flight, I still had a role to play in maintaining safety. I was another set of eyes and ears, and my vantage point at the back could've been of assistance to the crew up front.

I didn't say a word because of three things: First, I reminded myself that they're doing continuation training, and I shouldn't interrupt this. Second, I was a first lieutenant at that time and wanted to make a good impression on the senior officers in the front. Last, I didn't want to make a scene and embarrass myself. Could this kind of mindset possibly lead to an accident? Yes it could! There will be situations where one might be in the same gut-wrenching dilemma but has to suck it up in order to complete the mission or save lives on the ground. My advice is to inform members of the aircrew or formation so they can watch out for you.

What are other physiological influences that can affect our mission? Fatigue and stress are on the top of the list. Hydration and effects of alcohol or medication are also significant factors. The rest include: nicotine and caffeine withdrawal, sinus and ear problems, toothache and other pains, poor circulation and posture, eye strain, noise and vibration. In order to have a safe and successful mission, the bottom line is we should first take care of ourselves. You never know when your body might just go against you. Enjoy your flight!

U.S. Air Force photo by Airman Cortney Hansen

Do You Have a D

ANONYMOUS

I was asleep at a four-way stop at 2:30 a.m. A gentleman was kind enough to wake me with his horn and gesture; I got the feeling he was unhappy with me. I didn't think much of it at the time. I was on my way home after a seven-hour training flight that landed at 1:30 a.m. That's just part of the job. I guess I'm lucky that I wasn't going 50 mph when I fell asleep and that I have a big foot that stayed on the brake at the stop sign. At first, I didn't really pay much attention to that situation, but, as the days went by, I thought about it more. I started to get angry, first at the Air Force for making me fly a training mission that landed so late. Later, I got mad at myself for allowing it to happen.

Most people think that missions begin at engine start and end at engine shutdown. That's how we're trained – all of our focus is on procedures in that time frame. You'll hear from some people that "the mission isn't over until the paperwork is done!" Well, I now have a different outlook on missions. I think about getting back safely to my family. I treat every mission with a "door-to-door"

U.S. Air Force photo by Senior Airman Nathanael Callon

oor-to-Door Plan?

plan now when planning every trip to and from the squadron as well as thinking about the mission. Do I pick up food on the way, enough for the whole flight? Do I need a caffeine drink to make it home, or should I adjust my sleep if possible? It's the little things like sleep and nutrition that get neglected first. So much thought goes toward the squadron and the work. We stretch ourselves every day thinner and thinner until we almost break, mostly not knowing that we're doing it. Simple tasks like a cookie-cutter training mission are completed with enough complacency or muscle-memory-style execution that you can set yourself up for disaster.

We have to get home to our families. A door-to-door plan is the key. Sometimes 12 hours of crew rest aren't enough when you mess with circadian rhythms. There's a fine line between working hard and working too hard. Take a step back every now and then to reevaluate the complete process. Make it back to your door where your family is waiting.

The Aviation Well Done Award is presented for outstanding airmanship and professional performance during a hazardous situation and for a significant contribution to the United States Air Force Mishap Prevention Program.

Tech. Sgt. David Cates
917th Maintenance Group
Barksdale AFB, La.

The Aviation Safety Well Done Award is presented to Tech. Sgt. David Cates, 917th Maintenance Group, 917th Wing, Barksdale AFB, La., in recognition of his exceptional airmanship. On Oct. 7, 2010, Sergeant Cates observed the landing of a B-52 as it was taxiing to a parking spot and noticed smoke coming from the No. 2 wheel well. Sergeant Cates recognized a potential problem and immediately stopped the aircraft. He directed the aircrew to egress immediately without hesitation. Sergeant Cates and his ground crew members descended upon the aircraft with fire bottles and began extinguishing the blaze located in the wheel well. The ground crew was able to contain the fire prior to the arrival of the fire department. Additionally, they positioned a tow vehicle in front of the aircraft and prepared for an emergency tow as a precautionary measure. The outstanding attention to detail and quick reaction by Sergeant Cates safely averted a potentially serious ground mishap and loss of life. Sergeant Cates' exceptional performance and commitment to safety reflect great credit upon himself, Air Force Reserve Command and the United States Air Force.

Maj. Daniel Fischer
159th Fighter Wing
Naval Air Station-Joint Reserve Base
New Orleans, La.

The Aviation Safety Well Done Award is presented to Maj. Daniel Fischer, 159th Fighter Wing, Naval Air Station-Joint Reserve Base, New Orleans, La., in recognition of his exceptional airmanship. On Jan. 8, 2011, Major Fischer was flying an F-15C, when shortly after takeoff, he experienced abnormal landing gear indications. He then received multiple master caution warning lights that indicated the aircraft had a hydraulic problem. Major Fischer cycled the landing gear and received landing gear down indications. Noticing the utility hydraulic pressure rapidly decreasing, he completed the total utility hydraulic failure checklist preparing for a possible total loss of utility hydraulic pressure. He landed on the centerline 500 feet from the approach end and lowered the aircraft nose to prepare for the cable engagement. Major Fischer felt an

initial, rapid deceleration, and the force of the engagement ripped the arresting hook from the aircraft. This forced a go-around condition, and he skillfully used aerobraking on the second landing to stop the aircraft safely. On landing roll, he shut down the No. 1 engine and activated the emergency brake system. Both main landing gear tires ruptured, and the aircraft began to skid and slide. After the aircraft was stopped, he shut down the No. 2 engine and immediately egressed the aircraft saving a multi-million-dollar combat asset. Major Fischer's exceptional performance and commitment to safety reflect great credit upon himself, the Air National Guard and the United States Air Force.

Tech. Sgt. Roland Broussard III
403rd Aircraft Maintenance Squadron
Keesler AFB, Miss.

The Aviation Safety Well Done Award is presented to Tech. Sgt. Roland Broussard III, 403rd Aircraft Maintenance Squadron, Keesler AFB, Miss., in recognition of his exceptional attention to detail and initiative. On Oct. 22, 2010, Sergeant Broussard was detailed as part of a two-man team to inspect a C-130J with damage on the horizontal stabilizer that resulted from a bird strike. Rather than simply remove and replace the damaged part, Sergeant Broussard inspected the interior of the stabilizer, going beyond the normal requirements. During the inspection, he discovered several improper hardware pieces and loose connections and decided to extend his search to include the other side of the stabilizer. Further exploration revealed anomalies throughout the areas inspected. To complicate the situation, the technical data were incomplete, vague, and, in one place, incorrect. Sergeant Broussard relied on his instincts and requested further research until a complete picture could be realized. His initiative led to a base-wide inspection and eventually evolved into a time compliance technical order. Sergeant Broussard's actions also led to correcting and repairing numerous deficiencies throughout the U.S. Air Force C-130J fleet. His professionalism and actions helped prevent possible serious equipment failure and loss of life. Sergeant Broussard's exceptional performance and commitment to safety reflect great credit upon himself, Air Force Reserve Command and the United States Air Force.

Crew of Reach 8118
121st Air Refueling Wing
Rickenbacker Air National Guard Base, Ohio
92nd Air Refueling Wing
Fairchild AFB, Wash.

The Aviation Safety Well Done Award is presented to the crew of Reach 8118, 121st Air Refueling Wing, Rickenbacker Air National Guard Base, Ohio, and 92nd Air Refueling Wing, Fairchild AFB, Wash., in recognition of its exceptional airmanship. On Sept. 22, 2010, while on a night mission in support of Operation Enduring Freedom, the crew of Reach 8118 noticed severely abnormal avionics indications. The crew performed a recovery checklist that resulted in returning the affected avionics back to normal. One hour later, the crew noticed several erratic instrument readings and again worked frantically to decipher them. All instruments required for nighttime flying had failed, which made flying operations extremely hazardous. The crew feverishly searched the aircraft manual to find procedures to address this type of malfunction with no success. The crew had only standby navigation equipment available and no course vectors to the nearest divert airport. Relying solely on their system knowledge, airmanship and navigational skills, they found a suitable airfield and landed safely. The crew of Reach 8118 demonstrated extraordinary skill and ingenuity ensuring the safe recovery of a multi-million-dollar combat asset. The exceptional performance and commitment to safety by the crewmembers of Reach 8118 reflect great credit upon themselves, the Air National Guard and the United States Air Force.

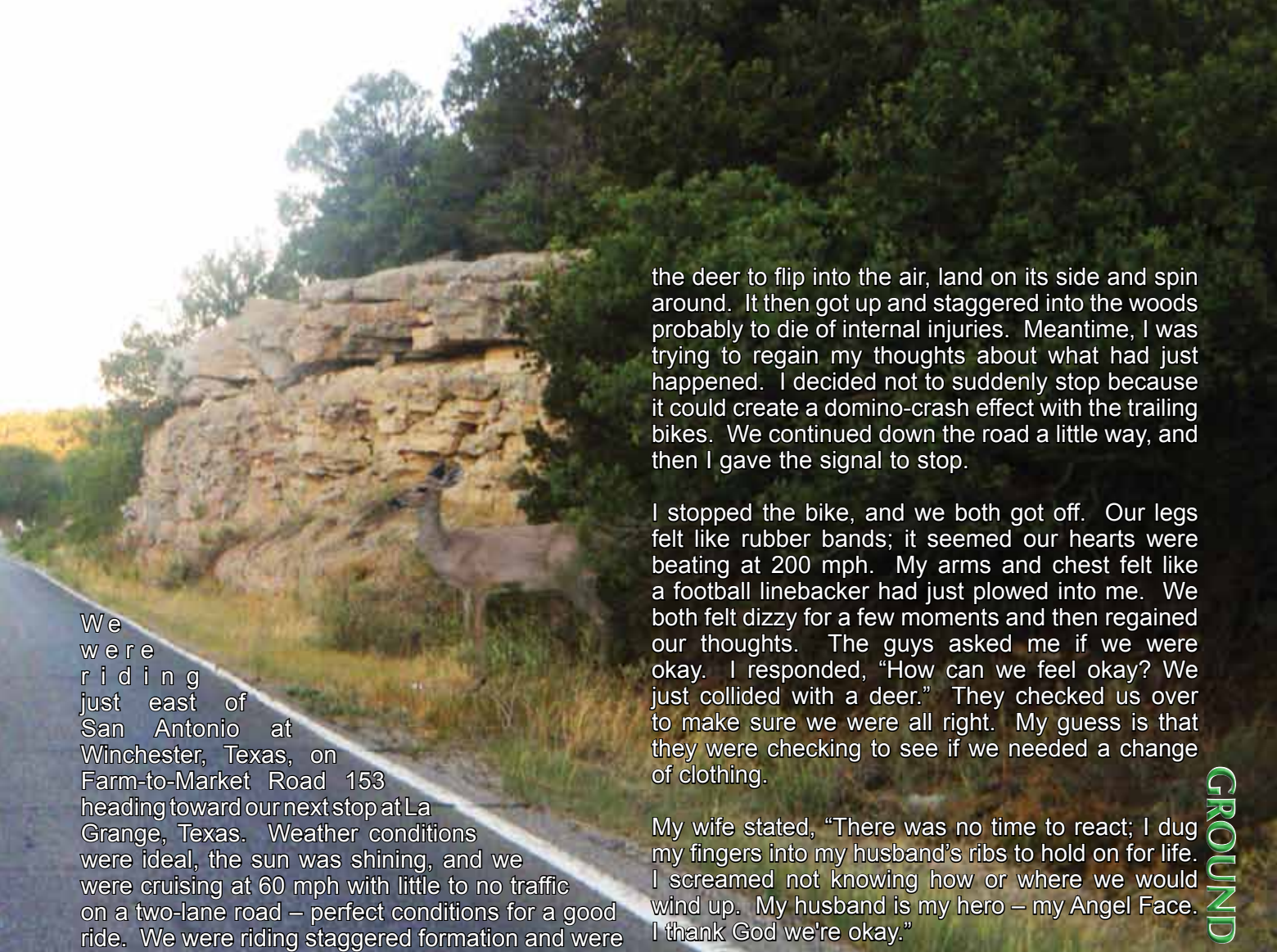
U.S Air Force photos

A Brush with Death

AMANDO PEREZ JR.
311th Air Base Group
Brooks City-Base, Texas

My life, my wife and motorcycle riding are very *deer* to me in more ways than one. Let me tell you what happened one beautiful riding day. On April 24, 2010, around mid-afternoon while riding with 25 other bikers, my wife and I had an encounter with Mother Nature that we will never forget because we lived to tell it all.

Photo courtesy of author



We were riding just east of San Antonio at Winchester, Texas, on Farm-to-Market Road 153 heading toward our next stop at La Grange, Texas. Weather conditions were ideal, the sun was shining, and we were cruising at 60 mph with little to no traffic on a two-lane road – perfect conditions for a good ride. We were riding staggered formation and were fourth in line along the right wheel well of the road. I was watching up ahead for oncoming traffic. Two-lane roads are known for head-on crashes for a number of reasons.

As I was looking forward, something caught my attention close to the right edge of the road. I saw what appeared to be a deer. I wasn't sure if it was a buck or doe, but it was, indeed, a deer. We came upon the deer before I had a chance to move over to give it more space between us. The last thing I needed was to startle the deer and cause it to jump toward us.

The deer suddenly jumped directly into our path of travel. I didn't brake, and I didn't slow down due to the deer's proximity. For the next few seconds, our lives were in the hands of God. With all my strength to hold the bike straight, I clenched the grips hard enough to rip the leather covers off. Then BAM! We T-boned the deer! According to my loving wife and fellow bikers following behind us, the blow caused the deer to flip into the air, land on its side and spin around. It then got up and staggered into the woods probably to die of internal injuries. Meantime, I was trying to regain my thoughts about what had just happened. I decided not to suddenly stop because it could create a domino-crash effect with the trailing bikes. We continued down the road a little way, and then I gave the signal to stop.

I stopped the bike, and we both got off. Our legs felt like rubber bands; it seemed our hearts were beating at 200 mph. My arms and chest felt like a football linebacker had just plowed into me. We both felt dizzy for a few moments and then regained our thoughts. The guys asked me if we were okay. I responded, "How can we feel okay? We just collided with a deer." They checked us over to make sure we were all right. My guess is that they were checking to see if we needed a change of clothing.

My wife stated, "There was no time to react; I dug my fingers into my husband's ribs to hold on for life. I screamed not knowing how or where we would wind up. My husband is my hero – my Angel Face. I thank God we're okay."

We inspected the bike to ensure it was safe to ride. We found fur on the forks and brake system. All was well so we continued with our ride.

All along I kept wondering what kept me from losing control of the bike. My fear was that I didn't want my best friend to get hurt or worse. I needed to protect her from harm, and I did. The jolt from striking the deer placed a lot of stress on my arms and chest to keep us upright. I fought the handle bars that wanted to get away from me; I refused to lay the bike down. I stayed focused on control rather than panic and lose it all. I thank the Motorcycle Safety Foundation course instructors who taught me how to ride safely and how to handle dangerous situations.

I never thought that I would ever strike a deer, but I did. When we got home, I told my loving wife, "Please don't call me dear anymore," and she said, "You got it, Babe!"

Photo/illustration by Dennis Spotts

I'm Worth It ...

AIRMAN 1ST CLASS JAMES KIRSHNER
377th Security Forces Squadron
Kirtland AFB, N.M.

How fun is it to be in your bed, injured, on your 21st birthday? Well that's what happened to me when I had a dirt bike accident on June 22, 2010. My injuries consisted of a concussion, shattered collarbone, road rash and leg laceration. I was wearing all my required gear but could've done more to prevent what happened to me.

I was riding my Yamaha YZ125 dirt bike I had just gotten that day along with my brand new helmet. I had been riding bikes for about seven years in Texas, but the conditions in New Mexico were very different. It was a freak accident, and I sure didn't see it coming!

I was riding with a few friends on the hard-packed side of an off-road course. I was going about 25-35 mph when I hit a deep rut in the dirt/sand. When I hit the rut, it jerked the handle bars to the right and shot me over the bike, and the bike followed me. When I hit the ground, I'm sure I hit head and shoulders first, which gave me a head concussion and a shattered collarbone. Then the bike peg got a hold of my calf and ripped a hole in my leg into the muscle. I don't remember the accident; my friends had to tell me. I don't remember my friends putting me in my truck, driving me to the hospital or putting me in a wheelchair. When I woke up, I was sitting in a wheelchair, and I started to fill out my paperwork. I called my supervisor, told him what had happened, and then I passed out again. Soon after, I woke up in a hospital bed and called my supervisor again telling him the same story. His response was, "You might want to get your head checked out." After getting all cleaned up and having X-rays of my broken collarbone, I was released for my seven-month road to recovery.

My advice to other riders: Even if you've been riding for awhile, ride to your limit and never let someone try to push you to where you might get hurt. Pay attention to your surroundings. You might feel comfortable, but you never know what's around a turn or hill. Riding with friends is a good idea because if you do get hurt, you won't be alone and stranded.

I learned that no matter how long you've been riding, bad stuff can happen; it's the nature of the beast. Don't rush into things; build your skills gradually, especially with a new bike or if you haven't ridden for awhile. Make sure you have everything you need to ride: helmet, gloves, long pants, long shirts, goggles and above-the-ankle boots. You might even want to invest in a chest protector to protect you from flying debris. A neck brace is also a good investment; it'll stop your head from going too far to the front, back or side when you ride. Riding pants are good for breathability and will protect you from rocks and the heat of the engine. I bought all the gear because I realized I'm worth it.

Photos courtesy of author

One Way to Improve Your Odds

DR. BRUCE BURNHAM
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GROUND

Perhaps you love riding motorcycles and just can't wait to get out on the road. However, you also have a head on your shoulders, and the facts put out by the National Highway Traffic Safety Administration (NHTSA) are hard to ignore. Studies by NHTSA have shown that per mile traveled, motorcycle riders have 37 times the chance of having a fatal accident. You wear a helmet, personal protective equipment and obey the law – but you still wonder – isn't there something more I can do? Now there is – ride a bike with an anti-lock braking system (ABS).

ABS was first introduced for aircraft in 1929 and in the automobile in the 1960s. BMW was the first to use it on motorcycles, and Harley Davidson began offering ABS as an option on all of its Touring motorcycles in 2008. We're reaping the benefits of this long history of development as ABS is now a well-established safety feature in vehicles. ABS reduces over-braking, resultant skidding and loss of control. It also reduces the risk of under-braking since riders are no longer hesitant to apply full braking force due to the concern of "locking up." ABS allows the wheels to continue to interact with the road surface, and modern systems now also control the front-to-rear brake bias, which reduces the chance of spinning. Most importantly, this is done without any skill or effort from the driver. In fact, on slippery surfaces, even professional drivers without ABS can't stop as quickly as average drivers with ABS. This automatic or "passive" feature is the gold standard in safety since it doesn't require driver training or even compliance.

Numerous studies have shown the effectiveness of ABS. A recent study done by the Insurance Institute for Highway Safety (a group interested in reduced insurance payments – something we should all be interested in!) compared fatality rates over a six-year span. The institute found that the rate of fatal motorcycle crashes was 37 percent lower in ABS models than with non-ABS versions – a dramatic effect.

ABS does come with an increased cost, but that'll come down just as the cost of every other safety feature as it becomes more widespread and as more riders demand it. With the effectiveness of ABS, riders would be foolish not to demand it.

U.S. Air Force photo by Dennis Spotts

Lucky 13

ANDREW SALAS
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AFI 91-202 Released*

Triskaidekaphobia. That means fear of the number 13, an unlucky number for many. When it comes to Air Force Instruction 91-202, *The US Air Force Mishap Prevention Program*, 13 is actually a number of good fortune. 2011 is the 13th year from its original publication that the updated safety "bible" has been published.

This instruction implements Air Force Policy Directive 91-2, *Safety Programs*, which establishes mishap prevention program requirements, assigns responsibilities for program elements and contains program management information. It combines elements of the original AFI 91-202, dated 1998; AFI 91-301, *Air Force Occupational and Environmental Safety, Fire Protection, and Health (AFOSH) Program*, dated June 1996 and AFI 91-302, *Air Force Occupational and Environmental Safety, Fire Protection, and Health (AFOSH) Standards*, dated April 1994. The new AFI 91-202 rescinds AFIs 91-301 and 91-302.

AFI 91-202 seeks to minimize the loss of Air Force resources and protect our Airmen from death, injury and illness by managing risks on- and off-duty. It makes commanders at all levels responsible for developing and implementing a mishap prevention program. Safety staffs will help commanders integrate risk management into all on-duty operations and off-duty activities.

Mishap prevention programs must target groups at increased risk for mishaps, injury or illness; track and trend incidents and measure program effectiveness; fund safety activities; set goals, objectives and milestones; and identify and disseminate safety "best practices." Both on- and off-duty mishaps result in lost mission capability, suffering to those involved and their family and friends, and, in many cases, incur ongoing costs to the American taxpayer. Identifying and mitigating risks is, therefore, a top priority for every Airman, and AFI 91-202 provides the guidance and policy to do so.

AFI 91-202 covers ground, flight, weapons and space safety. It's been extensively coordinated with the Air Staff, Air Force major command vice commanders and chiefs of safety, direct reporting units and field operating agencies. Several contentious issues have been hammered out, and the cycle of review and recommendations for change will continue – but, this time, from an updated version of the instruction.

If you're a safety professional, you know you can't rely on luck to run an effective safety program. AFI 91-202 will outfit you with the tools you need to help build a strong safety culture in your organization that keeps our Airmen and our resources safe and sound, on- and off-duty.

* AFI 91-202 is available at: http://www.e-publishing.af.mil/shared/media/epubs/AFI91-202.pdf

Photo/illustration by Dennis Spotts

DUI from a Commander's Perspective

LT. COL. AARON BURGSTEIN
Commander, 1st Combat Camera Squadron
Joint Base Charleston, S.C.

It's midnight. I'm on leave, and my family is sleeping peacefully in our hotel room. A loud ringing wakes us up. I jump quickly to answer my work phone. An Airman has been picked up for a DUI. No one is hurt – this time.

This call is one that every supervisor, leader or commander dreads. Not because it might stain our records. Not because it breaks, in our case, the squadron's 23-year record of no DUIs. Not because it means extra work for everyone involved. It's dreaded because an Airman has made a choice to put himself and others at risk. As leaders, despite workshops, talks and programs, we failed to ensure the safety of this Airman. I hadn't been a good wingman.

You may be wondering why someone in leadership might feel like a failure, when realistically, we had very little to do with this Airman's choice. We'd given the speeches not to drink and drive, reminded our Airmen to be safe and tried to set the example. Yet, we still had a DUI, and, ultimately, it was my responsibility.

What happens to Airmen in the squadron comes back to me. That's not a burden. It's a privilege and an honor to know the Air Force trusts me with this huge responsibility. It's important to know how many people are responsible and affected by the actions of each and every Airman.

In this case, in my first DUI as a leader, the question was what to do? The first sergeant, who got the initial call, took care of the actions to make sure our Airman and everyone associated with the incident were OK. We worked closely together to ensure the right steps

U.S. Air Force photo by Master Sgt. Shane Cuomo

were taken to take care of our Airman and notified our leadership chain and base agencies. It was a true team effort.

Next came telling the members of my squadron. This wasn't an easy task but a necessary one. In our particular case, it turns out that several people had seen signs that there might be a problem. Despite this, no action had been taken. We'd failed him as wingmen. While you can't force someone to stop drinking, you can bring it to leadership's attention before something like a DUI happens.

Beyond the danger to oneself and others and the extra work and embarrassment as the information goes up the chain, there are other ramifications of a DUI. With my first sergeant's assistance, we outlined both financial and military consequences.

It's pretty amazing what a DUI could cost an Airman financially. In the case of a Senior Airman, that Airman could see his or her base pay cut due to an Article 15, legal fees estimated at $5,000, increased insurance costs plus whatever associated fees and fines might occur. Conservatively, the total cost might be around $20,500 or $3,400 per beer in a six-pack. The costs only go up as you increase in rank.

That's just the money side. What about the Uniform Code of Military Justice? Possible penalties under an Article 15 include: forfeiture of a half-month's pay for two months; 60 days restriction; 45 days extra duty; 30 days correctional custody; reprimand or reduction of one grade or all the way back to E-1 if the Airman is an E-4 or below. What's the real cost though? The loss of money or rank isn't the most important thing. People can recover from fines and even a reduction in pay. You can't recover from losing your life or taking someone else's. There's just no coming back from that, and, as a commander, as a leader and as a wingman, that's my biggest concern and the reason I'm writing this.

We owe it to our wingmen to help ensure they're never put in a position where they can hurt themselves or others. We need to look out for them. Watch out for our friends and fellow Airmen and help them when needed. We do it while deployed, and we need to ensure we do it all the time.

My goals? First, ensure our Airmen are taken care of physically and mentally. Second, ensure that goal permeates every organization I'm a part of. It's about more than a DUI. Worse things can happen. When an Airman makes a mistake, take appropriate actions. However, the underlying goal is, and will always be, to take care of our Airmen and make certain they don't falter or fail.

U.S. Air Force photo by Airman 1st Class Matthew Bruch

Man Up!

BILL MORROW
501st Combat Support Wing
RAF Alconbury, U.K.

How hard can it be to be a wingman? It's pretty darn hard, particularly if you're young. Being a wingman calls on you as an individual to step up and take care of your peers, help keep them from making the wrong decisions, guide them away from career- or life-ending choices, act as a restraint and keep them from extreme actions. How difficult can that be? In theory, it's not difficult at all; step in, take charge, talk to them and show them the light. That works to a point when it's fun and games, when there's no threat of social rejection or when there's no cost involved; but then what? The ones we're trying to reach are the high-cost-insurance group of 18- to 26-year-olds – the post-high-school, college-coming-of-age young people. However, just because this article focuses on youth doesn't mean that if you're older you're in the clear. We "old folks" fail to do the right thing, sometimes just as often.

We sit around wringing our hands in angst of disbelief when we're told of the death of a co-worker. Then, it's too late. We feel pity, blame ourselves or think we could've done something.

U.S. Air Force photo by Senior Airman Erik Cardenas

Well, yeah, we could have, but we didn't. So, why didn't we? Maybe we didn't do anything because of fear. What are we afraid of? We don't want to be accused of being a "rat," squealing out a dorm buddy to the first sergeant or commander because that's how it'll be seen not just by the victim but by all the "buddies and pals" who both of you know. Do you know why? Because he's going to tell anyone who'll listen that you "ratted" him out. You're a suck-up who can't be trusted. Social rejection and isolation are the penalties you may pay because, quite frankly, the maturity of this group to recognize you're doing good isn't happening.

You're not a coward. If you're a member of our Air Force who's under the age of 26, you've probably been to war since you took the oath. You've probably deployed more than once to both Iraq and Afghanistan. You've pulled escort duty; you've manned the gun turret. You might have been shot at or caught the blast from an improvised explosive device … all within arm's length of someone you might die for. So, why retreat from responsibility?

What can you do? Man up – or woman up – as the case may be. Become the adult who this "peer" group needs and lead by example. The rank you wear means more than a paycheck. Tell your buds, when you're sitting around crushing beer cans against your forehead, what you'd want them to do for you. When you're out of control, stupid or being ignorant, you want someone to take care of you because you don't seem to be able to take care of yourself. You want buds who'll gang up on you and take the keys or will go see someone in leadership with the authority to get your attention and give you a reality check. You might have joined the military to get away from your biological parents, but you've inherited a bunch more who aren't blood-related.

Being a good wingman is really simple; all it takes is courage. You've already proven you have that.

U.S. Air Force photo by Senior Airman Gina Chiaverotti-Paige

LARRY JAMES
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Horseback Riding is Fun

On Thanksgiving weekend in Texas, Airman 1 (A1) decided a good way to spend the day would be on horseback. A1 went to the local stables to rent a horse for the afternoon. A1 was an experienced rider and knew the stable and horses. As A1 sat on the back of "Lightning" and headed down the trail, something spooked the horse, which caused him to buck and send A1 flying off. The impact with the ground caused a radial fracture of the right forearm and a concussion. Alcohol and fatigue weren't factors in this mishap.

Lessons Learned

Horseback riding is a wonderful recreational activity, but it can also be dangerous. I'm guessing that, if you've been around horses much, you've been bitten, stepped on, kicked, bucked, reared, etc. In fact, horseback riding is 20 times more dangerous than motorcycle riding based on hours riding[1]. A1 was an experienced rider and did everything correctly, but even experienced riders

[1] Beim, G.M. *Horseback Riding Injuries and Safety Tips*. http://www.hughston.com/hha/a.horse.htm

Photo by Nancy Spotts

can get thrown. For those not as experienced, there's personal protective equipment (PPE) that can be worn, but you can still be injured or even killed while wearing PPE. Getting on the back of horse presents a serious risk. Helmets, riding vests and other PPE can limit the danger, but they can't prevent it, not even that new airbag vest that's supposed to inflate before you hit the ground. Believing all these things will keep people safe will cause some people to get on horses they shouldn't ride. Assess your skills, talk to the stable operators and get a horse that's right for you. Riding can be fun but getting injured never is.

Seeing the Deer but Not the Edge

On a crisp November morning, Airman 1 (A1) was sitting in a tree stand waiting for that trophy buck to come into range when there was some rustling in the brush. A1 thought this might be the one but couldn't get a good look at where the noise was coming from. As A1 repositioned to get a better view, his foot slipped off the edge of the stand and off he went. A1 grabbed for the stand and slammed into the tree trunk before falling to the ground. A1 suffered two broken fingers and a broken clavicle. Alcohol and fatigue weren't factors in this mishap.

Lessons Learned

Using tree stands used to be for bow hunters only, but, over the years, the stands have become common in all kinds of big game hunting. They provide the advantage of seeing game from farther away and also make it harder for the hunter to be seen or smelled by the game. Most are associated with falls. Injury rates are highest among 15- to 34-year-old hunters [2]. This could be because younger hunters aren't aware of or may not take appropriate safety precautions while using tree stands (like wearing a safety harness). Younger hunters may also be more apt to take risks than older, seasoned hunters. A1 wasn't wearing a safety harness, and the results of the fall led to several lost workdays and a lot of pain. Many tree stand injuries can be prevented by taking a few extra steps:

✳ Check your stand. Experts discourage using homemade tree stands because they may not be properly constructed or are unable to hold your weight.

✳ Use a harness. You're less likely to get injured in tree stand accidents if you properly use a safety harness.

✳ Don't carry equipment while climbing or disembarking. Carrying equipment can affect your balance and cause you to fall. In addition, a gun can be accidentally discharged. Use a separate line to haul equipment up to the tree stand after you're settled in. Also, don't load your weapon until it's safely in the tree stand with you.

✳ Have a plan. Let others know where you'll be hunting and how long you expect to be gone. Carry a cell phone in case you have an emergency and need help. Carry emergency equipment in case you fall. While the harness may prevent you from hitting the ground, you can still die if you're suspended upside down for a significant amount of time and are unable to free yourself. Some experts even suggest practicing how to free yourself from the harness so you're better prepared to handle an emergency. Get that buck! Don't be the one hauled out of the woods on a board.

[2] *Young Hunters Most Likely to Be Injured Using Trees Stands, Say UAB Researchers.* (2009, December 30). http://main.uab.edu/Sites/MediaRelations/articles/72183/

Flying Mattress Ride

On a warm November day, Airman 1 (A1) was asked by Airman 2 (A2) to help with a move. A1 and A2 moved several loads of household goods in the back of A2's pickup truck. When moving the washing machine and mattress, A1 decided to ride in the bed of the truck. A1 stood braced against the mattress in order to keep it from blowing out of the truck. As they were moving down a local roadway, a gust of wind blew the mattress and A1 out of the vehicle. A1 sustained serious head injuries and died a few days later. Alcohol and fatigue weren't factors in this mishap.

Lessons Learned

While helping your friends move can put you in good standing with them, it can cause you great harm if you're not careful. As the day wears on, we tend to get in a hurry to get things done and get on to the fun part of the weekend. This need to get things done often leads to us taking shortcuts and increases the risks associated with the move. A1 didn't use good risk management when deciding to be the object that held the mattress in place. With a surface area as large as a mattress, it doesn't take a significantly strong wind to lift it out of the bed of a truck.

If you need to help a friend move a mattress, follow these steps:

✳ Consider renting a moving truck. This is a safer way to move a mattress and reduces the chance of damage to the mattress or an accident resulting from the mattress sliding out of the truck.

✳ Cover the mattress with a tarp. To secure the tarp, tie rope around the mattress from top to bottom and side to side. This will keep the tarp from blowing off.

✳ Place the mattress on its side on one side of the pickup truck. This will reduce the airlift that can pull the mattress off the truck. If you have a box

spring or another mattress, place it on the other side of the pickup bed to balance the load.

✳ Use the tie downs in the truck bed. Connect the rope to the tarp ropes that are wrapped around the mattress tarp. Some trucks have tie downs located on the sides and on the floor of the truck bed. Make sure to connect at least one of these tie downs on each side of the mattress. If possible, run a rope around the mattress and connect it to part of the truck frame underneath the truck going down the outside of the truck. Do this in addition to the tie-down connections.

✳ Close the pickup truck tailgate if the mattress doesn't extend past the back edge of the truck bed. If you can't close the tailgate, tie two ropes across the opening to prevent the mattress from sliding out.

✳ Drive slowly with a mattress in your pickup truck. Consider avoiding highways so you can drive more slowly. Check often to make sure the mattress is still in place.

Borrowed Gear Borrowed Time

On a warm October day, Airman 1 (A1), Airman 2 (A2) and Airman 3 (A3) decided to engage in some scuba diving from a sand bar in a river. A1's scuba training consisted of an informal briefing from a relative who loaned the diving gear to A1. A1 and A2 decided to dive off the sand bar where the current was 12 knots, and the waves were 2 feet high. A3, the only trained diver, remained on the sand bar. A1 and A2 entered at a relatively shallow area, but, within minutes, they could feel themselves being swept by the current into deeper water. They surfaced in 5-6 feet of water but could hardly stand due to the waves and current. A1 was having trouble, and A2 tried unsuccessfully to inflate A1's life vest with the carbon dioxide inflator. Before they could get it inflated, A1 and A2 drifted apart. A1 was last seen struggling to stay afloat 25 feet away. Police and Coast Guard divers found A1's body four days later. The life vest was uninflated, the scuba tanks were empty and the mask was missing. An excessively heavy, 14-pound weight belt was used when a lighter, 5-6-pound one would've been more appropriate. Alcohol was a factor in this mishap.

Lessons Learned

A1 failed in many ways to use proper risk management when deciding to go diving, and it resulted in death. A1 had a blood alcohol content of twice the legal limit and had no formal scuba diving training. A1 and A2 decided to dive in an area of high waves and high current even though the regular diving area had much safer conditions. A3 failed as a wingman because, even though trained, he didn't intervene at any point to prevent A1 and A2 from compounding one poor decision with another. A3's only good decision was not to enter the water with A1 and A2. Even experienced divers would have trouble swimming where the current is 12 knots and being an inexperienced diver only made the task more difficult. Diver training is as much about what to do in an emergency as it's how to swim with gear on. If A1 had dived in the safe area, things might have turned out better, but that's no guarantee. There are many factors that make diving dangerous, and doing it under the influence of alcohol and without training increased the risk exponentially. Take diving classes from a certified instructor. Pay attention to the environmental hazards that are present. Never dive unless you're with another certified diver, and never ever drink alcohol and dive.

Test Like

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The ground software for a recent Department of Defense satellite mission was undergoing final testing in preparation for launch. The system had undergone months of previous testing, and all requirements had been validated. One more test remained: a full-up simulation of a complete day in the life of the mission. In this test, something was discovered that had eluded all previous testing. In all of the complicated software involved in tasking the vehicle, no one checked to ensure that the payload imager's boresight didn't point at the sun. Pointing the imager's boresight at the sun could potentially blind the vehicle's optics and end the mission.

The problem was caught – and corrected – because the final test exercised the entire system as it was planned to be used for flight, using the actual tasking, commanding and flight software in the operational environment. This testing philosophy – sometimes called "test like you fly" – is increasingly important in modern space systems. In this case, the software involved in tasking the vehicle was complex, and different organizations developed different segments. Each of the contractors involved thought that the other was doing the necessary calculation. A small misinterpretation of the software documentation and an extremely tight development timeline exacerbated the problem. These elements – system complexity, incomplete or misunderstood requirements and schedule pressure – are common to almost all space missions today. As a result, "test like you fly" is increasingly critical to ensuring mission success and averting space mishaps. When it comes to space system test and evaluation, most of our technical guidance hails from the days when the mechanics of the system dominated; satellites were mostly "nuts and bolts" operated by simple state-machine software with relatively few execution paths. As a result, a lot of the testing guidance was focused on ensuring that the hardware survived the launch environment and that the electronic components survived the space radiation environment.

Such testing is still critical to mission success. Today's satellites are dominated by their software, and that software is complicated. It may have thousands or even millions of lines of code, and it's virtually impossible to trace, let alone test, all the different possible paths the software execution could take. In this case, the best thing we can do is to exercise the software in as realistic a manner as possible – by developing test scenarios that mimic on-orbit operations as closely as can be reproduced on the ground. Such tests ensure the most common and vital software pathways operate properly. They don't replace in-depth "testing to the requirements," but they do ensure that the entire system functions together as intended once all the requirements are met.

Because even when testing shows that a system meets all requirements, things can fall through the cracks. Relying on "testing to the requirements"

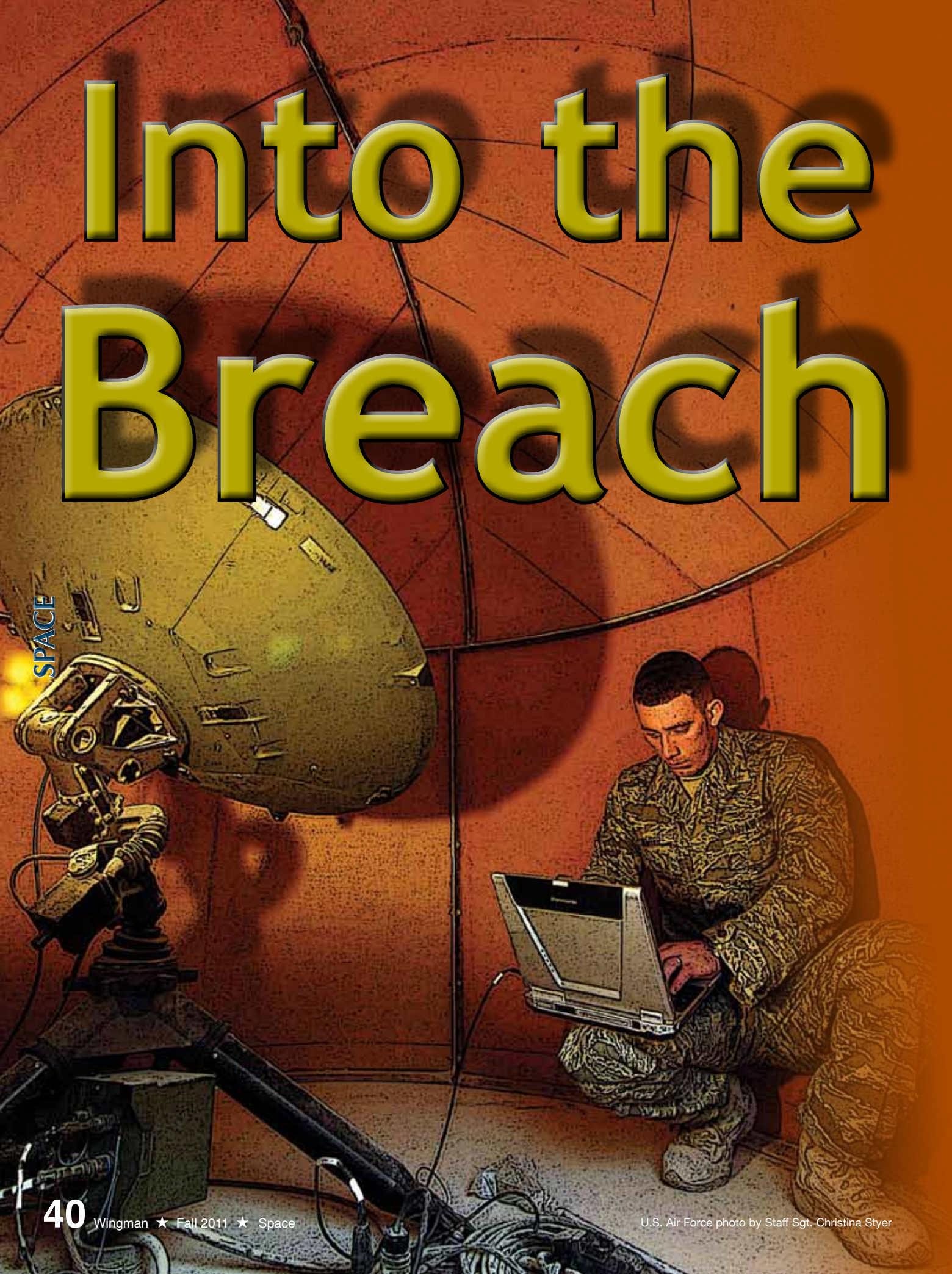
U.S Air Force photo by Senior Airman Stephanie Longoria

You Fly

assumes that the requirement set is perfectly complete and understood by all. In an imperfect world, this is rarely the case. Mission design begins with an act of the imagination: Someone decides that a satellite is needed to accomplish a certain function. Translating that vision into a finite set of requirements is generally an imperfect process, especially when the full system is as complex as modern space systems are today. And at the end of the day, a satellite, ground system or piece of software can meet all requirements and still fail to perform the mission as originally conceived.

Once the requirements have been validated, we need to go back and demonstrate that the space system matches the vision. We need to test like we plan to fly. Such tests can be challenging – no ground test facility can replicate the space environment – but it's surprising how close you can get with a little ingenuity. Use the actual ground system. Use the actual operations organization. Simulate the attitude control. Schedule and download the data as you plan to on orbit. In the end, you may discover something that could mean the difference between mission success and mission failure.

Into the Breach



U.S. Air Force photo by Staff Sgt. Christina Styer

JAY NAPHAS
Federal Aviation Administration
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The situation is all too familiar now. The news reports another computer hack, this time against your own bank. It happened weeks ago. They've published user names, passwords and social security numbers for 400,000 accounts, and the bank is trying to contact those affected. You don't know whether yours is one of them and log in to your bank to see if any money has disappeared. It hasn't, fortunately, and there's still no word from the bank. Then, the next news breaks, and the cycle repeats itself.

Welcome to life in 2011. Anyone with Internet access now has the capability to do real and serious harm to individuals and institutions all over the world, given the will and the knowledge to do so. The knowledge is available online, too. It's a threat unlike any we've faced as a civilization because it now takes so little, just a computer and some time, to do so much harm to so many.

There's an idea that one can escape the consequences of computer hacking by not going online or by going to only a few trusted sites. In 2011, that simply can't work; even if you're not online, your bank, phone, power and insurance company, mortgage lender and employer almost certainly are. Withdrawing from the Internet is no longer an option, and the effects of events on the Internet are felt in the real world, by everyone, every day.

There's a breach in our software "walls," and our only option is to go once more into the breach. As said in Shakespeare's "*Henry V*," we can either plug the holes in our software systems with our bodies or end the siege altogether. The body count is already rising – software errors killed four Marines in a V-22 Osprey and nearly killed a squadron of F-22 pilots simultaneously on their first deployment to Japan. The choice is ours, and the choice is clear: we need to end the siege. But how?

I propose a radical notion to seal our cybernetic walls and push the besiegers back from them: more communication. Software itself is nothing more or less than a mental model, preserved in digital instructions and executed over time. Mental models are the representations of the world that everyone must form in their mind in order to understand the present and, as much as possible, predict the future. We form these models through communication, in many forms and by many means, and store them in our own fallible memories. These facts lead us to conclude that software errors are errors in communication, and we must fix our communications in order to fix and prevent software errors.

The fact that communication is the way to fix holes in our communication systems may seem paradoxical, but what I'm referring to here is the communication that builds the mental models that, in turn, govern the operation of our software systems. This communication is between contract officers and vendors, program managers and system architects, system architects and coders, program managers and testers, coders and end users and all combinations of people involved in every software development process. It's the responsibility of everyone involved in software development and use to communicate clearly and openly.

If you find a problem in a system you use, report it to the administrators for that system and make sure your report contains clear instructions to find the problem. If you're involved in any step of software development, make sure you understand all of the requirements for that software and ask questions until it all makes sense.

It may feel like you're overstepping your boundaries to ask questions about software or software requirements, but that's precisely what's needed. To develop good software, information must flow freely and be checked thoroughly by each person along the way. The classic children's game "telephone," where a message is passed from person to person around a circle and inevitably gets transformed into something wildly different by the time it reaches the first person again, is similar to the situation today. What we need to do is cross-check each person's understanding with that of others, and we do that by communicating freely, frequently and openly.

This freedom of communication demands a culture shift away from the idea that it's better to remain silent and be thought a fool, for software errors lurk in silences. We can create the culture that builds the understanding required to make good systems by remembering that there are no stupid questions. The software breach is formed by our communication problems, and fixing those problems will seal the breach. We're all software people now, and together we can end the siege.

The NUKE SURETY PULSE

May 2011

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Facility Certification

Anyone who works within the nuclear weapons community should have a general knowledge of the Master Nuclear Certification List (MNCL). The MNCL identifies equipment, hardware, and software that are nuclear certified IAW AFI 63-125, *Nuclear Certification Program*. Individuals must ensure their tools, equipment, testers, trailers, etc., are listed in the MNCL prior to use to verify they are using authorized items. But what about your facility?

AFMAN 91-118, *Safety Design and Evaluation Criteria for Nuclear Weapon Systems*, was revised last year, and criteria for facilities certification were added. Does this mean units will be submitting Nuclear Certification Impact Statements for existing facilities/buildings throughout the Air Force? Yes, but only for changes made to the existing configuration. AFMAN 91-118 states, "Existing facilities and facility systems are not required to be modified solely to meet the requirements … ." However, any changes to the existing facilities now require formal approval. So what does this mean? Commanders, supervisors, and building custodians must be aware of any significant changes to the facilities and understand that those modifications now require approval through the nuclear certification process before they are accomplished. The key will be in defining what will be considered "significant change." Actions to define the certified configuration of the facilities are already underway. This effort will help define what is important, and what changes do not require formal approval.

General Design Criteria in AFMAN 91-118 states, "Facilities (as part of the nuclear weapon system) shall be certified before conducting operations with nuclear weapons IAW AFI 91-103, *Air Force Nuclear Safety Design Certification Program*, AFPD 91-1, *Nuclear Weapons and Systems Surety*, AFI 91-101, *Air Force Nuclear Weapons Surety Program* and DoDD 3150.2, *DoD Nuclear Weapon System Safety Program*." These criteria apply to Essential Facility Systems/Subsystems: Lightning Protection Systems, Nuclear Weapons Side Flash Protection Requirements, Facility Power Systems, Fire Protection Systems, Security Systems, Facility Security System Automata and Software, Blast Containment/Isolation Features, Electromagnetic Radiation Environments, Radiation Monitoring, and Hoists, Cranes, and Similar Devices.

Check with your Weapons Safety Manager for more information and remember …

Safety is no accident!

Rodney M. Mason, Colonel, USAF
Chief, Weapons Safety

ADVANCED WEAPONS SAFETY TRAINING

The Building Blocks of Weapons Safety

MASTER SGT. SIDNEY P. GUIDRY
Weapons Safety Division
Air Force Safety Center
Kirtland AFB, N.M.

You completed the Weapons Safety Management Course a few years ago and worked in a weapons safety office for two years. After your tour in weapons safety, you returned to work within the munitions storage area for three years. You've just been tasked to deploy as a weapons safety manager (WSM). You feel a little rusty when it comes to weapons safety. What are you to do?

Advanced Weapons Safety Training (AWST) was developed to provide introductory/refresher training to weapons safety personnel. AWST modules are available for common tasks that weapons safety managers are responsible for.

AWST isn't just for WSMs. Anyone with an interest in weapons safety can gain from AWST!

AWST-100, Introduction to Weapons Safety
Provides a brief overview of weapons safety as well as the roles and responsibilities of the WSM.

AWST-102, Licensed Explosives Storage
Provides instruction on completing an Air Force IMT Form 2047, Explosives Facility License

AWST-104, Explosives Site Plans
Provides instruction on when explosives site plans are required as well as how to accomplish and submit them.

AWST-105, Explosives Safety Exceptions
Provides instruction on when explosives safety exceptions (waivers, exemptions and deviations) are required, how to accomplish and submit them as well as when to review them.

AWST-110, Glass Breakage Risk Assessments
Provides instruction on when glass breakage risk assessments are required, how to complete a glass breakage risk assessment using Window Glazing Analysis Response & Design, Professional Edition, as well as the documentation requirements.

AWST-112, Fire Fighting and Prevention
Provides instruction on firefighting and prevention measures associated with ammunition and explosives.

https://www.my.af.mil/gcss-af/USAF/site/AFSC/SEW/Training

Becoming a Certified Safety Professional

There are more than 12,500 Certified Safety Professionals in the world, including a few in the Air Force safety community. John Good, Air Force Global Strike Command's Executive Director of Safety, and Ralph Crump, Safety and Occupational Health Instructor, Media and Force Development Division, Air Force Safety Center, recently joined these numbers. Messrs. Good and Crump provide insight on their journey to obtain their credential.

Why did you choose to obtain a professional safety credential? Mr. Good: I knew I'd be more effective and useful to the Air Force if I found a professional development niche that sharpened my safety skill set. In my view, pursuing a professional safety credential served the same purpose as pursuing my advanced degrees, and it was the perfect fit for the profession I chose. I took aim at the top credential because it offered the greatest challenge and increased the chance of not only distinguishing my brand but setting me on a path that required I continue to sharpen my skill set to retain the credential.

Mr. Crump: I'd always noticed in both government and civilian job announcements the term "CSP required" or "CSP highly desirable." So, initially, it was a desire to make myself marketable in the safety community. As I learned more about the process of achieving the CSP, I learned it was more than three letters on my résumé. The CSP is held in high esteem in the safety community. It lends credibility to the knowledge gained within the safety career field and could open doors to advancement within the Air Force.

So, how does the CSP credentialing process work? The Board of Certified Safety Professionals has summarized the process into seven steps at: http://www.bcsp.org/7steps. These steps can be boiled down to:

1. Possessing a bachelor's degree in any field or an associate degree in safety, health, environment or a closely related field accompanied by five to six years of dedicated safety experience focused primarily on the prevention of mishaps. Individuals must obtain their degrees from an

institution accredited by an accrediting body certified by the Council for Higher Education or the U.S. Department of Education when the degree was earned.

2. The required amount of experience is based on whether you have a bachelor's or associate degree (a bachelor's degree requires five years of safety experience, an associate degree six). Individuals must document and submit their experience to the certifying board for consideration before the board will authorize them to sit for an exam.

3. A minimum of two references is required, preferably three if either of your references lacks some form of credential recognized by the certifying board.

There are two exams. The first exam is the Associate Safety Professional (ASP) Exam. The 200-question test must be completed in less than five hours. Successful completion of the ASP Exam demonstrates an individual has met the academic requirement leading to the CSP credential. The ASP Exam is not required for professional engineers, certified industrial hygienists, certified health physicists or if the individual has a bachelor's or master's degree in safety or a safety-related program accredited by the Applied Science Accreditation Commission of Accreditation Board for Engineering and Technology or the Aviation Accreditation Board International. The certifying board will permit an individual to sit for the ASP Exam with only a bachelor's degree and 12 months of safety experience or an associate degree and 24 months of safety experience.

The second exam is the Comprehensive Practice Exam. Successful completion of the Comprehensive Practice Exam demonstrates an individual's ability to practice principles in use by CSPs. All individuals who seek the CSP credential must pass this exam, which covers 200 questions and must be completed in less than 5.5 hours. The certifying board will only permit individuals to sit for the Comprehensive Practice Exam if they meet all academic and experience criteria. Individuals may pass the ASP Exam and then accumulate any required remaining safety experience before sitting for the Comprehensive Practice Exam. Once they pass the appropriate exam, they may append their signature block with the initials ASP or CSP. If you're a veteran, reservist, retiree or on active duty, the U.S. Department of Veterans Affairs will reimburse the cost of either exam. The ASP designation is only temporary and will expire within three years, unless you pass the Comprehensive Practice Exam. The CSP is a permanent credential and must be maintained through earning 25 continuing education units every five years. A more detailed explanation of this entire process is at: http://www.bcsp.org/pdf/ASPCSP/ApplicationGuide_Mar2011WEB.pdf.

What does a safety credential bring to the fight? The credential raises the standard by confirming safety personnel meet a level of competency accepted by practicing CSPs around the world. While there are more than 300 U.S. certifications, licenses or registration titles in various safety disciplines, the CSP is one of only 16 accredited safety credential programs in the U.S. and covers a much broader area of safety disciplines than in the Air Force.

The Air Force has taken the safety construct and divided responsibilities across functional areas, such as bioenvironmental engineering, waste control/management, environmental protection, fire protection, Air Force Smart Operations for the 21st Century/quality management, safety and occupational health, human factors, systems safety, weapons safety and aviation safety.

There is no single organization or individual in the Air Force who possesses this breadth of exposure, although many of these safety disciplines simultaneously affect various Air Force operations every day. However, in the civilian safety sector, CSPs integrate these activities to direct the safety program of major corporations. They discover and control or eliminate hazards to sustain production and mission effectiveness.

A CSP who serves in the Air Force is an ideal leader of a safety response in support of events like Operation Tomodachi or an interagency response to an aviation or nuclear mishap because of the breadth of applied safety expertise, the high standard of proficiency in safety disciplines required of a CSP and the ability to translate between the civil and military sectors. Watch this video for more about what a CSP-credentialed employee brings to the Air Force: http://www.bcsp.org/dvd.

The ASP/CSP Study Prep software is now available to all Air Force personnel and is ready for immediate download. For more information, click: https://afkm.wpafb.af.mil/community/views/home.aspx?Filter=23588 or https://www.my.af.mil/gcss-af/USAF/ep/globalTab.do?channelPageId=s6925EC1335180FB5E044080020E329A9

The AIR FORCE SAFETY CENTER proudly congratulates:

Ethan Davis: "Distinguished Graduate," Safety Apprentice Course, June 2011. Mr. Davis is a PALACE Acquire safety and occupational health specialist intern assigned to the Safety Office, U.S. Air Force Academy, Colo. He graduated from Indiana State University, Terre Haute, Ind., with a Bachelor of Science Degree in Safety Management in May 2010.

And:

John Good: Awarded the "Certified Safety Professional" credential in June 2011. Mr. Good serves as the Executive Director of Safety, Headquarters Air Force Global Strike Command, Barksdale AFB, La.

Ralph Crump: Awarded the "Certified Safety Professional" credential in June 2011. Mr. Crump is an instructor assigned to the Media and Force Development Division, Air Force Safety Center, Kirtland AFB, N.M.

U.S. Air Force photos

Motorcycle Safety Poster Caption Contest Winners

The Air Force Safety Center held a Motorcycle Safety Awareness Month Photo Caption Contest in May 2011. We received nearly 200 entries for this photo.

Photo by Matthew Winburn

Congratulations to the winners of our contest!

1st: ***PPE. So easy a toddler could do it!*** **Submitted by Tech. Sgt. Nichole M. Nii**
2nd: ***Don't be a baby. Wear your PPE!*** **Similar submissions by Kendra Priddy and Tech. Sgt. Jennifer Strait**
3rd: ***Don't "kid" around. Gear up for summer.*** **Submitted by Staff Sgt. Jeremiah A. Rodriguez**
4th: ***PPE is what my daddy wears while riding, but it's what I do in my diaper!*** **Submitted by Master Sgt. Danny J. Saunders**
5th: ***Do you really need another reason to take motorcycle safety seriously?*** **Submitted by Mark P. Schaffer**

Many thanks to all who entered!

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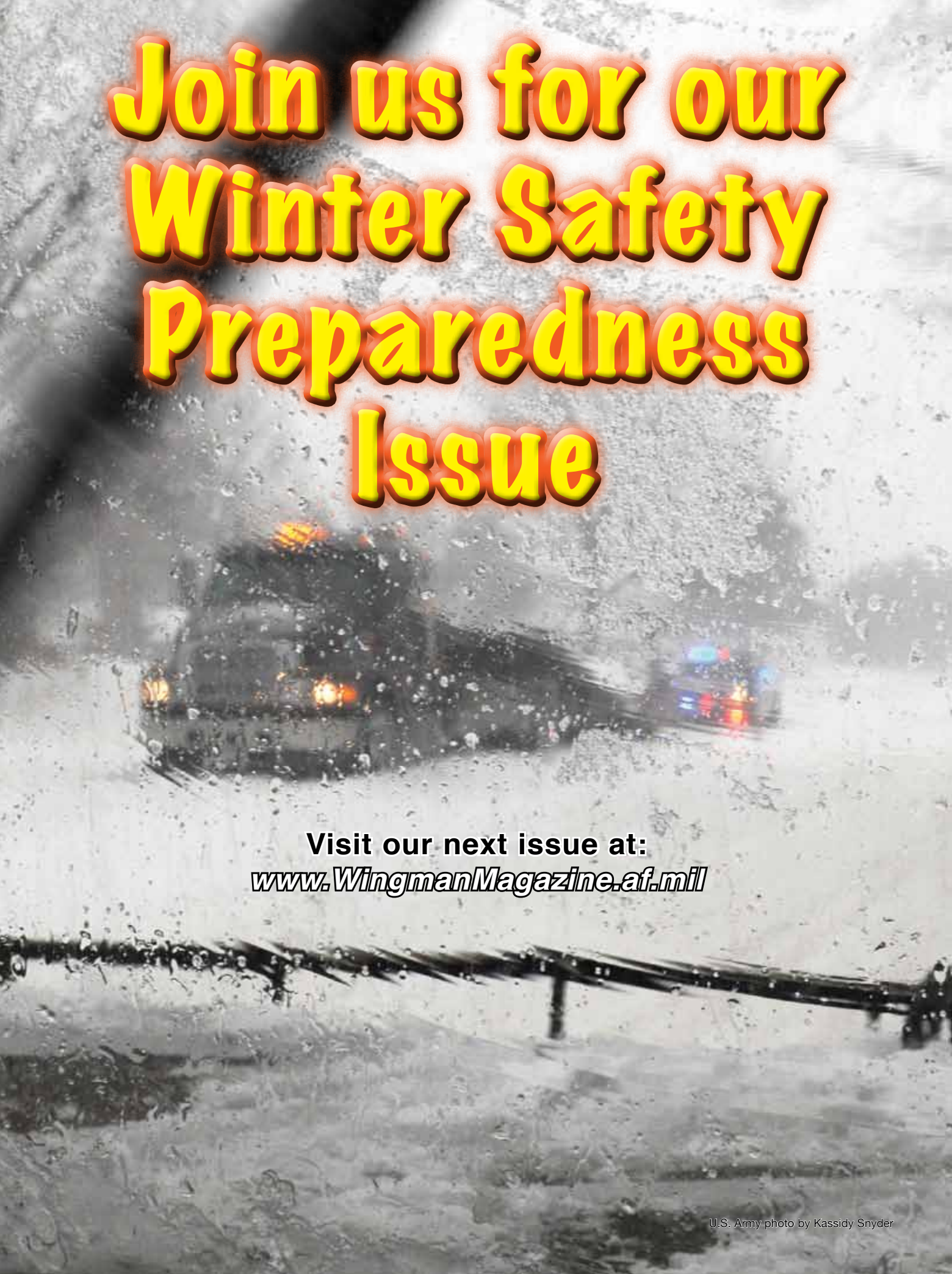
Join us for our Winter Safety Preparedness Issue



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U.S. Army photo by Kassidy Snyder