The Combat EDGE

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The Combat EDGE

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The editors reserve the right to edit all manuscripts for readability and good taste.

Front Cover: *Lockheed Martin photo by Kevin Robertson*

ACCent on Safety

A SAFETY FAREWELL

The boss offered me the opportunity to write this month's ACCent since I'll soon be leaving the ACC Flight Safety office, where I've been for 4 years — certainly close to a record for a rated guy in today's Air Force! During my flying assignments, working in Safety wasn't something I ever aspired to and my attitude toward safety was they investigated accidents, conducted safety meetings, and didn't get to fly as much, because they had to be available in case something happened. I wasn't here in SEF long before these preconceptions completely changed. Upon reflection, some thoughts:

- The dynamic of a unit's safety program is a direct function of how energetically the commander advocates it. Everyone is a safety officer/NCO, but the commander sets the tone.
- It's everyone's job, not just Safety's, to pass on lessons learned to new people and you're derelict if you don't.
- Good safety programs show throughout a unit ... conversely safety suffers if the commander allows his/her program to lapse into dormancy and their staff only revises it to prepare for an ACC inspection.

Most ACC units would do well if no-noticed because our wing safety staffs are real pros. I've learned many people who have not worked in Safety don't understand what Safety's charge is. Safety officers, NCOs, and civilians have a key role in keeping the tip of the spear sharp by highlighting occupational risks and giving our people the tools to mitigate them. It doesn't mean being overly cautious, but knowing and respecting the threats. I've had the fortune to work with many good people in Safety here on the staff, the NAFs, and the field, and have learned a lot from them. In retrospect, I am thankful for the opportunity to have served in Safety, because the ACC Safety team really makes a difference!

Lieutenant Colonel Ronald B. Maxwell
Flight Safety

When to Knock It Off?

By Maj Michael A. Abair II, Luke AFB, Ariz.

Photo by SSgt Cherie Thurlby

The mission was briefed as a 2 v 2 Dissimilar Air Combat Tactics (DACT) mission with two F-16 Fighting Falcons versus two F-15 Eagles. Flying against dissimilar assets is an outstanding, although all too often rare, occurrence. As pilots, we look forward to the chance to practice flying against the fighting tactics of other weapons systems because it is such a great training opportunity. It also helps to break up the pattern of training with the same people and platforms every day. I use the term "pattern" cautiously because what happens in the air is never exactly what was anticipated during the briefing on the ground; this is especially true during any form of air combat training. But flexibility has always been a reality in all successful airpower operations, and any training like DACT that challenges pilots to respond to unknowns not only adds value, but excitement to the mission. Unfortunately, these unforeseen changes also add an element of risk that you must manage.

My wingman was on an upgrade ride as part of his mission qualification training. I covered fallout options as part of the coordination brief. If one of the Eagles fell out, we would still run the sortie as briefed with one bogey instead of two. The upgrade would be ineffective since the syllabus required two bogeys, but at least my wingman would get some practice at using the radar and executing basic tactics. Other briefed fallout options included my wingman aborting sympathetically if I fell out and me becoming red air for the Eagles if my wingman fell out. This last option would give the F-15s a chance to practice their own blue air tactics.

Losing an aircraft or a pilot in training is something we cannot afford!

Ground operations were uneventful all the way up until we got to the end of the runway. My wingman's jet sprung a fuel leak in the arming area so I decided on the three-ship option with me as red air for the Eagles. The players acknowledged the change on the radio and we took to the runway for departure. After I got airborne, I received the call that the F-15 wingman had aborted on the runway. So

much for the kind of effective training I had planned on and briefed. Now what was I to do?

The two of us who had gotten airborne continued out to the area while I spent the transit time trying to decide what we could do to get some training accomplished. I considered my options: 1 v 1 intercepts, Basic Fighter Maneuvers (BFM), or maybe just clear the Eagle off to fly on his own while I practiced Advanced Handling Characteristics or AHC and then some instrument approaches. To most fighter pilots, BFM would certainly have been the mission of choice. We don't get to do that much of it, especially against dissimilar assets. Dogfighting gives us the best opportunity to test our short range fighting skills. The only problem was that I had not covered this option in the coordination brief.

Air Force Instructions (AFIs) prevent us from flying a mission that has not been briefed. Current guidance does not prohibit accomplishing an airborne briefing of an alternate mission and many pilots would argue that such a briefing sufficiently satisfies the regulations in circumstances like mine. After all, I had briefed the training rules on the ground; all I needed to do now was brief how we

would conduct the fight setups. But the decision wasn't that easy.

There was a lot to consider. What were our experience levels? Were our procedures similar enough to effectively brief the mission in the air? How much training were we going to get? In essence, I was conducting a risk assessment right there in the cockpit. I was using Operational Risk Management (ORM) concepts without even realizing it. It seemed that the periodic ORM education I had received was paying some dividends.

AFI 90-901, *Operational Risk Management*, defines ORM as a "continuous, systematic decision-making tool involving six steps:"

1. Identify the hazards
2. Assess the risk
3. Analyze risk control measures
4. Make control decisions
5. Implement risk controls
6. Supervise and review

While I was not formally documenting each step of the process, I was focusing on the ORM components that applied to my particular scenario. These included making risk decisions at the appropriate level and accepting the risk when benefits outweigh the costs.

Operational commanders do a great job trying to define and minimize risk by implementing AFIs and providing checklists, airfield procedures, and unit standards that address most situations. These guidelines are based on the experiences of pilots that have gone before us. We can be confident as to how we should respond because the decisions have already been made at the appropriate level. That said, all risks are not necessarily unacceptable simply because they haven't been managed in the regulations. In these instances, the judgment and discipline developed in our flight training can help us make sound decisions. Just beware that whenever we have to start thinking about the "what ifs" that have not already been considered and addressed by those in command, we are probably moving closer to the line of taking unnecessary risk.

Accepting the risk when the benefits outweigh the costs sounds simple, but it may not be. Sometimes the benefits

Photo by TSgt Jack Braden

are obvious. For example, risking your life to fly into a combat zone and drop a bomb, which will win the war and save thousands of lives, can be an easy decision. Deciding whether you are going to fly an unplanned training scenario without a thorough brief may not be such a no-brainer. What are the real benefits of flying a mission without pre-coordination? What is the added risk of briefing in the air versus on the ground?

All risk management efforts are aimed at keeping us from crossing the line of unnecessary risk. To approach that line, yet not cross it, is not as easy as it sounds in a business like flying jets, which is inherently risky. The task is further complicated as changing mission demands and increased combat capabilities continuously press us to squeeze more and more syllabus and continuation training requirements (e.g., night vision goggles) from the daily flying schedule. As a result, it is easy to get into a mindset that we must maximize training on every mission.

The pressure of increased training demands is making it more important to wisely decide when enough is enough. In many scenarios the aircraft commander or flight lead alone must make the call on whether added risks outweigh potential benefits, making those risks unnecessary. That is exactly what I had to do while I flew to the working area with an F-15 in trail. On this particular sortie, I decided it was time to call it a day and resolved to make up for lost training at another time.

I learned a valuable lesson that day. Thinking through the "what ifs" on the ground during the planning and briefing phases will usually result in easier decisions than ones made in the air at 350 knots. Taking the time you need before you get to step time will also improve the quality of the decisions you make in most situations. I cannot stress this enough. Nonetheless, there will be times — whether due to short plan/brief times or just unconsidered events — when we are required to make real-time mission decisions using cockpit ORM. It is at these times that flight leads and aircraft commanders earn their titles. When this does happen, keep the following in mind. I've never met a squadron commander who faulted anyone for making a conservative decision when it made sense at the time. One non-effective training sortie is not that big a deal. Losing one or more aircraft and/or pilots in training is something we cannot afford.

Photo by TSgt Jack Braden

Combating Fatigue

By Lt Col David A. Hagginbothom, Langley AFB, Va.

Photo by MSgt Dean Kuhlman

I'm not a doctor nor do I play one on TV. I do have over 3,400 hours flight experience primarily in the "heavy" world where double-digit duration sorties are the norm. These long-duration missions can make even the most caffeinated or amphetamined of us fatigued to the point where our judgment, performance, or both are significantly impaired, making us a very real hazard to ourselves and each other.

Okay; so what is safety's causal finding for fatigue? Well, the chain of causation could go as far back as 1879 when Thomas Edison invented the light bulb. Almost overnight, our society stopped rising with the sun and turning in not too long after sunset. Artificial light led to dramatic increases in productivity, but also facilitated our morphing into the modern-day, 24/7 culture that, on average, logs barely more than 6 hours of sleep per night.

More recent developments also impinge on our ability to get a complete night's sleep: cable TV, night "bean" requirements, operations tempo, and master's degrees. Without a full re-charge of our internal batteries, we progressively make more withdrawals than deposits in our sleep bank resulting in a very real sleep debt that manifests itself as fatigue.

In his book, *The Twenty-Four Hour Society*, Dr. Martin Moore-Ede relates a very sobering story of a human body rebelling against chronic fatigue. It should dispel the myth that you can effectively condition yourself against sleep deprivation:

"I was driving my truck through the night trying to make a deadline when these bouts of drowsiness started to come over me. As I always do, I grit my teeth and tried hard to pay attention. But then I started to feel a strangely cold sensation under my leg. I reached down and found to my surprise I was wearing no pants and had cold hard metal beneath me. I couldn't figure out what was going on so I looked down and saw my clothes in a bag next to me. Suddenly, I came to

... fatigue's insidiou
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the realization that I was in a hospital emergency room and that I had been in an accident."

Dr. John Caldwell of the U.S. Army Aeromedical Research Laboratory at Fort Rucker, Alabama, found that:

"Just 18 hours without sleep causes mental and motor skills to deteriorate as much as they do when Blood Alcohol Concentration (BAC) reaches 0.05 percent. Twenty-four hours of sustained wakefulness equates to a BAC of 0.10 percent, [beyond] the legal intoxication limit in most states."

Regardless of the cause, many U.S. Air Force flight crews find themselves having to combat fatigue before, during, and after they go to combat the enemy. What's in the arsenal of weapons to fight the effects of fatigue?

The single best fatigue prevention is a good night's rest. While some can get by on 6 to 7 hours a night, 8 to 9 hours is typically closer to our physiological requirements. Short of that, studies have shown 15 to 20 minute "combat naps" at strategic times in the day can allow individuals to function effectively on as little as 2 to 3 hours of sleep. Napoleon Bonaparte purportedly used this technique during his military campaigns.

Diet, exercise, and hydration are also vitally important. Favor high protein meals, avoiding high fat and carbohydrate foods. "Take the 'fat' out of fatigue" is a clever way to remember this advice. Also, always drink plenty of water since dehydration significantly compounds fatigue.

To prepare for overseas deployments, you can help pre-condition yourself by systematically rising and retiring 1 hour earlier each day until you reach the time zone you'll be living in at your forward operating location. Upon arrival, you can also aid adjustment of your circadian cycle by exposure to sunlight. Whatever tactics you use, it is important to realize there's a statistically significant "danger zone" between the hours of 2:00 and 6:00 a.m. Use extra caution (Operational Risk Management or ORM) if your flight plan has you airborne during this time.

Finally, if you happen to catch yourself or a fellow crewmember nodding off into micro-sleeps (eyes are open, but brain is offline catching a few quick Zs in lah lah land), there are a few last resort "Band-Aids" you might try. One word of caution — these are only short-term, temporary fixes: cool dry air — especially in the face, muscular activity, peppermint aroma, irregular/variable sound, and bright lights. How do you implement these suggestions in the cockpit? Consider keeping an air vent pointed at you. Do isometric exercises or an occasional anti-G strain. Chew gum — peppermint flavored will double the benefits. Chat with others (emission control permitting). Turn up the cockpit lights (tactical environment permitting).

Despite the many challenges to get adequate rest, getting enough sleep is as critical to our ultimate success as every other part of mission planning. Assessing our fatigue meters ought to be an integral part of our ORM checklists. Fatigue alone doesn't kill very many people. But fatigue's insidious onset often leads to complacency, which leads to inattention, judgment lapses, and mistakes, which can directly cause a mishap. The very nature of our business — flying across multiple time zones at all hours of the day and night — practically guarantees that fatigue will always be looming out there as a factor we must overcome in order to safely accomplish our missions. Keep sleeping soundly so you can keep flying safely!

Editor's Note: *If you have a "There I Was ..." story about fatigue, send it to us.*

Photo by MSgt Dave Nolan

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Lockheed Martin Photo by Tom Reynolds

Joint Strike Fi

Safety Built In

By Ms. Anne Bierstine, Edwards AFB, C

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With planning for the Joint Strike Fighter (JSF) flight test program in high gear, experts at the JSF Integrated Test Force at Edwards are focusing on the high-tech safety designs the new fighter will offer future aircrews.

Both the Air Force and the Navy will conduct testing on all of the JSF variants, including the Air Force, Navy, and Marine versions as well as the foreign version of the aircraft. Once test pilots begin evaluating the JSF in the sky, they will be looking at several key features that have been designed specifically for its pilots and ground crews.

According to Mr. Mark Crawford, chief engineer for JSF at Edwards Air Force Base, Calif., the fighter's most unique safety characteristic is its Prognostic Health Management System (PHMS), which begins working before the aircraft returns from a mission. With this system, the aircraft will relay key maintenance information to a ground support system allowing the logistics community to assemble the right skills, technical data, and aircraft spares needed to quickly return the jet to the air.

Lockheed Martin photo by Kevin Robertson

With PHMS, if a system, such as the aircraft's radar capability, were to fail or sustain battle damage, the technology would signal an in-flight reconfiguration thus allowing the pilot to link to a wingman's radar system to complete the mission. The reliability and fault-isolation data offered by the system will also help JSF maintenance crews identify when the aircraft are meeting mission and reconfiguration requirements. This will lead to reduced maintenance and supply cycle time and will make the most of logistics resources, which means more sorties with less resources and the ability to do both safely.

In addition, the fighter's ground collision avoidance system has been developed to assist pilots in situations where they might be task-saturated or temporarily incapacitated. If such a situation arises, the aircraft will automatically maneuver to avoid hitting terrain or obstacles.

The system uses digitally stored databases including one containing terrain representative data to predict when a collision with the ground is eminent. A fly-up is commanded prior to impact signaling the flight controls to execute an automatic fly-up. The mission computer terrain database can be updated flight-to-flight to support the current mission plan. In addition, pilots will have the ability to add man-made features to the terrain if needed. Also, the JSF flight control system will take inputs from the pilot, and through its sophisticated software algorithms, will determine the safest and most effective method to accomplish the pilot's desired task.

In all, the JSF flight test program will conduct an estimated 11,000 flight test hours before turning the aircraft over to those who will fly it into combat. The first test aircraft is expected to touch down at Edwards for developmental testing in 2005. An additional 18 are expected to arrive once the program moves into operational testing in 2010.

Once the JSF moves into production, the Air Force will be its largest customer, with current plans to purchase around 2,000 of the conventional takeoff and landing versions of the aircraft. The Air Force version is designed primarily for air-to-ground combat and will replace the F-16 and A-10 and complement the F-22.

Three Strikes

Photo by MSgt Derrick Shine

Equals Disaster

By MSgt Donald Beckham, Langley AFB, Va.

I recently investigated a mishap and wanted to share some important lessons learned. As you will see, failures at both the structural and decision-making levels attributed to this mishap. If basic Operational Risk Management (ORM) principles had been applied, the outcome would have been very different.

On a bright, crisp morning, 2 days after Christmas, a tasking came down for the initial start-up of a propane/air mix plant at a southern Air Force base. The base had just entered a natural gas curtailment, which meant the government would pay dearly for every hour that the plant could not augment the supply of natural gas with a propane/air mix. For this reason, there was pressure to get things going quickly.

Soon after arriving at the job site, the mishap technician lit the two pilots used to feed the propane-warming bath (a mixture of glycol and water). Running through a mental checklist developed solely from past observation, the mishap technician ensured the propane liquid inlet valve was closed. He reasoned that with this valve closed there was no chance liquid propane could enter the system during warm-up, making the whole operation much safer.

Slowly, the system temperature started increasing. In approximately 90 minutes, it had crept up on the 150 degrees Fahrenheit needed to start supplying the mixer with dry air. At this point, the mishap technician and two observers started running the checklist they had to bring the compressor on-line. Just as this operation started, the propane vapor relief valve erupted, venting vaporized propane into the air at a rate of 2,705 cubit feet per minute.

Quickly a cloud of pure propane vapor accumulated under the ceiling of the structure. Because propane is 1.5 times the weight of normal air, the vapors started to descend. The mishap technician and the two observers began to exit the facility just as the propane contacted the open pilots and exploded. Other observers in the area quickly notified local medical authorities. Helicopters evacuated the two more seriously injured to a hospital with a specialized burn unit. A local hospital treated the third.

What went wrong? The mishap technician verified the propane liquid inlet valve was

closed before starting up the system. There should not have been a sufficient quantity of propane in the system to cause a 250 pounds per square inch (psi) vapor relief valve to open. There definitely was not enough to cause a large vapor cloud to form. Could it have been mechanical failure? To find the answers, I had to track the history of the plant and the decisions that led up to that fateful day.

The base procured most of the plant components, design plans, and partial Operations and Maintenance (O&M) manuals from another Air Force base in the same region. In the original designs of the plant, there was no roof. This meant that the location of the vapor relief valve was not identified in any of the drawings because any venting would rise above the structure and disperse into the atmosphere. When the mishap plant was built, a roof was added. While the roof was deemed necessary to reduce potential corrosion, its addition did not include plans to adjust the location of vapor relief valve so that any venting could exit the structure. This was strike one.

In accordance with the National Fire Protection Association Manual 58, Liquid Petroleum Gas Code, all "Direct-Fired vaporizers" are suppose to have relief valve discharges plumbed on the outside of structures or buildings. This is so the propane vapors have somewhere to go and do not settle back down, coming in contact with open flame. When the structural design changed for this plant, someone should have checked the implication of that change and made sure it still complied with all the applicable standards. This apparently did not happen.

The plant's construction phase was completed about a year before the mishap. Because of numerous mechanical malfunctions within the system, the contractors never certified the plant operational. They also did not conduct the vital training that base personnel needed to continue operations without assistance. Since the contractors had not completely fulfilled the intent of the original contract, they did not leave the complete O&M manual, containing all the required checklists to operate the system. The only checklist the mishap technician had came with the original components and covered only the compressor not the propane vaporizer. Strike two.

Operating any system without sufficient knowledge (training) and accurate technical data (checklists) will lead to disaster.

Step one in the missing checklist mandated that the liquid inlet valve be moved to the open position before igniting the pilots. Why? In this particular system, the liquid inlet valve acted as a two-way check valve. Not only did it supply liquid propane, it also allowed excessive vapor pressure to vent back to the storage tanks. When the mishap technician ensured the valve was closed, this essentially "trapped" the liquid propane. In a sealed system, liquid propane will expand at a rate of 270 cubic feet of vapor for every cubic foot of liquid. The only way out was through the path of least resistance, the vapor relief valve, which also acted as the pressure relief valve. Finally, let's look at the decisions made leading up to the mishap.

The day before the explosion, contract technicians completed the last repairs needed to actually bring the plant on-line. On the morning of the mishap, the squadron's leadership was informed that the plant was operational. Unfortunately, they were not told about the lack of training or checklists. Strike three.

One of the fundamental ORM principles is that decisions have to be made at the appropriate level. It is critical that whoever the decision maker is, he or she has the knowledge needed to make an educated decision. Our leaders are doomed to fail when we don't thoroughly educate them before they make decisions. Once the wheels are set into motion, it's often too late. This is especially important in our more diverse industrial squadrons. In this case, a lower level supervisor identified the mishap technician as the only one with enough systems knowledge to start the plant because he had acted as an escort for the primary contractor on a number of occasions. Instead of making a decision of this magnitude, this supervisor should have provided more information about the lack of trained personnel to the squadron leadership.

Eliminating any one of these three strikes would have broken the chain of events that led up to this mishap. What are some of the lessons we can take away from this tragedy and apply to our operations? First, whether you work in an industrial or non-industrial area, look closely at all new processes and operations. This is where you will find the greatest risk. Risk Managers (which is what leadership actually is) need to ask a few questions to get a macro view of the entire operation. Leave no stones unturned. Does the organization have the necessary training to successfully complete this mission? Does the unit possess or have they developed all the necessary checklists to run a smooth operation? Does the unit know or have they provided all the necessary information to make a truly informed/educated risk decision? If the Risk Managers can answer yes to all these questions, this will significantly reduce the operational risks encountered by a unit and its personnel.

Operating any system without sufficient knowledge (training) and accurate technical data (checklists) can lead to disaster.

A-10

Photo by SSgt Greg Davis

Primary Function: A-10 — close air support • Contractor: Fairchild Republic Co. • Power Plant: Two General Electric TF34-GE-100 turbofans • Thrust: 9,065 pounds each engine • Length: 53 feet, 4 inches • Height: 14 feet, 8 inches • Wingspan: 57 feet, 6 inches • Speed: 420 miles per hour • Ceiling: 45,000 feet • Maximum Takeoff Weight: 51,000 pounds • Range: 800 miles • Armament: One 30 mm GAU-8/A seven-barrel Gatling gun; up to 16,000 pounds of mixed ordnance on eight under-wing and three under-fuselage pylon stations, including 500 pounds of Mk-82 and 2,000 pounds of Mk-84 series low/high drag bombs, incendiary cluster bombs, combined effects munitions, mine dispensing munitions, AGM-65 Maverick missiles and laser-guided/electro-optically guided bombs; infrared countermeasure flares; electronic countermeasure chaff; jammer pods; 2.75-inch rockets; illumination flares and AIM-9 Sidewinder missiles • Crew: One • Date Deployed: March 1976 • Inventory: Active force 143, Reserve 46, ANG 84

Pilot Safety Award of Distinction

Capt Morris M. Fontenot
58th Fighter Squadron, 33rd Fighter Wing
Eglin AFB, Fla.

The mission was a 4v6 Blue Air ride in an F-15 for Capt Morris Fontenot. All was normal for the fight and he "knocked-it-off" at bingo fuel to initiate the return home. Capt Fontenot tried for several minutes to coordinate with Air Traffic Control (ATC) for clearance back to Eglin Air Force Base, Fla. After experiencing significant delays with ATC, fuel status for his four-ship became critical. He declared "minimum fuel" for his formation, climbed to the appropriate altitude while initiating a return to base via the minimum-fuel recovery profile. Due to Capt Fontenot's early assessment of his formation's fuel state, the four-ship arrived at initial with 2,000 pounds of fuel. As Capt Fontenot rolled off the perch, he observed an unsafe gear indication. With the quantity of fuel passing 1,500 pounds, he elected not to burn even more fuel waiting for a chase ship. Because the landing gear circuit breaker was not tripped, he performed the emergency gear extension checklist. The gear failed to indicate properly, and tower personnel visually confirmed the right main gear was partially extended. He went around, declared an emergency for his gear, left the overhead pattern to an extended downwind, and directed his number three to rejoin to chase position. At the same time, he switched to the Supervisor of Flying frequency and had him reference the flight manual for the "Landing Gear Unsafe Checklist." After successfully completing the checklist, receiving indication of fully extended gear, and his chase ship visually confirming his gear was down and locked, he had 1,100 pounds of fuel remaining and declared "emergency fuel." Approximately 60 seconds elapsed from gear unsafe to the emergency fuel declaration. He landed successfully from a straight-in approach. Capt Fontenot's in-depth system knowledge and agility in handling a critical airborne emergency prevented the potential loss of life and a valuable combat asset.

ACC Safety is Proud of All Our Award Nominees

Maj Brad K. Grambo, Director of Operations
Maj James J. McElhenney, Asst Director of Operations
TSgt Eric V. Saline, Flight Engineer
SSgt Brian P. Sato, Aerial Gunner
SSgt Dane S. Robinson, Instructor Aerial Gunner
USAF Weapons School
57th Wing
Nellis AFB, Nev.

Ground Safety Award of Distinction

On the night of 23 July 2002, Capt Andy Souza and SSgt Danny Dubois, were returning to the dorms after viewing an evening movie at the Incirlik base theater in Turkey. As they approached Capt Souza's room, his roommate ran from the room and yelled that the wall was on fire. All three ran into the room and noticed flames from the fuse box on the wall. Capt Souza immediately ran out of the room in an attempt to find a fire extinguisher. Unable to locate one, he pulled the fire alarm and began knocking on the doors adjacent to his room to evacuate the building. He was instrumental in waking one of his neighbors who was sound asleep and surely would have perished in the fire. Meanwhile, SSgt Dubois hastily began removing personal possessions and mission equipment from the burning room until the wall and ceiling became engulfed in flames. He then ran to the next two rooms and helped the occupants remove their possessions as the fire continued to spread throughout the building. When they reached the last room in the building and there was no answer, SSgt Dubois broke the window and jumped into the room to make sure no one was inside. Finding the room empty, he began handing possessions out the window to Capt Souza until the smoke and heat became too intense. Fearing the rapidly spreading fire might explode an oil supply tank located next to the building, Capt Souza and SSgt Dubois began moving the possessions away from the now fire-engulfed building and directed individuals to move back. They collected all the possessions in one central area to ensure they would get returned to their rightful owners. Both were treated at the base hospital for smoke inhalation. The building was completely destroyed by the fire. Seven individuals escaped injury as a direct result of Capt Souza and SSgt Dubois' swift actions. Countless valuable possessions and mission critical equipment were preserved resulting in uninterrupted Operation NORTHERN WATCH mission support.

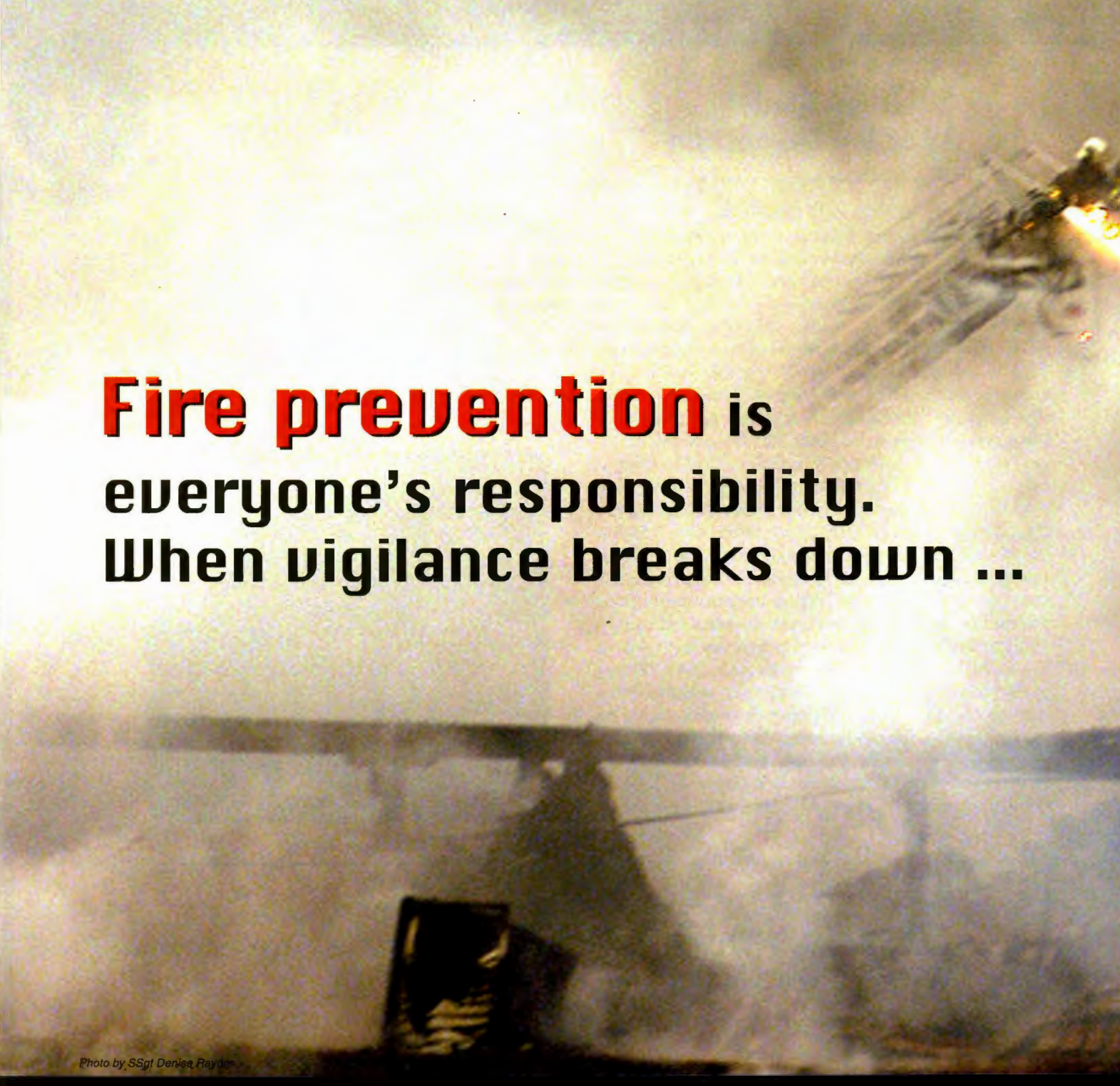
Capt Andrew Souza and SSgt Daniel Dubois
77th Fighter Squadron, 20th Fighter Wing
Shaw AFB, S.C.

Flightline Safety Award of Distinction

After an extended period of rain, MSgt Charles Samson initiated an investigation of the drainage system that runs in front of a five-bay aircraft hangar. Though the drainage seemed to be working fine, he uncovered severe damage to a newly constructed drainage system. Apparently, the drain had not held up to the weight of a 48,000-pound A-10 aircraft being towed across it on a daily basis. MSgt Samson's discovery set in motion the permanent abatement of this hazard. As a temporary abatement, a steel plate now covers the decayed drainage system to allow aircraft to be safely towed in and out of the hangar. Had the damage gone unnoticed, it could have resulted in a collapse, causing extensive damage to the aircraft and possible loss of life.

MSgt Charles Samson
303rd Fighter Squadron
442nd Fighter Wing
Whiteman AFB, Mo.

ACC is proud of our award winners!



Fire prevention is everyone's responsibility. When vigilance breaks down ...

Photo by SSgt Denise Rayder

Base Fi

Headquarters 8th Air Force, Barksdale AFB, La., experiences a fire of unknown origins in the early morning of March 12, 2002.

re Safety

By SMSgt James F. Kirst, Beale AFB, Calif.

Know your surroundings

A fire in one of your work facilities is a potentially deadly issue. It can happen with no notice and rapidly expand into an uncontrollable situation. Some specific hazards of a fire are heat, smoke, and reduced visibility.

When you think of fire, the first thing that you think of is heat. A fire can reach temperatures of up to 1,200 degrees. The increased air temperature resulting from a fire can literally cook your lungs and kill you. The searing heat can easily cause severe burns that can result in hospitalization, disfiguration, extreme pain, or death. Smoke is the cause of many deaths. The smoke reduces visibility, which impedes your ability to get out of the facility. Additionally, many of the items in our work areas will produce toxic fumes when heated. Some of these items include: synthetic coverings on furnishings, carpeting, chemicals, plastics (notebooks, discs, tapes, etc.), and components in electronic equipment.

The key to personal fire safety is prevention. There are a few items that we need to be familiar with to avoid being the subject of tomorrow's news. Of primary concern is housekeeping. This can be a cause of a fire and can impede egress from your facility. Awareness of your surroundings and evacuation routes is paramount. Look around your work area. Identify potential hazards and be the one to take action. Don't wait for "someone else" to do it for you.

The third floor of Headquarters 8th Air Force, Barksdale AFB, La., sustained considerable damage due to fire on March 12, 2002. Base and local fire fighters worked together to fight the blaze.

Photo by TSgt Robert Horstman

Familiarize yourself with the handling procedures, operation, and hazards of specific equipment and materials. The motors on some equipment can generate high temperatures and ignite flammable substances that might come in contact with them. This is also true for some of the lamps used to view imagery and computer monitors that do not have proper air circulation. In one of my offices, the image on a computer monitor started degrading when suddenly 8-inch flames erupted from the transformer at the back of it. The


Photo by Amn Kevin Camara

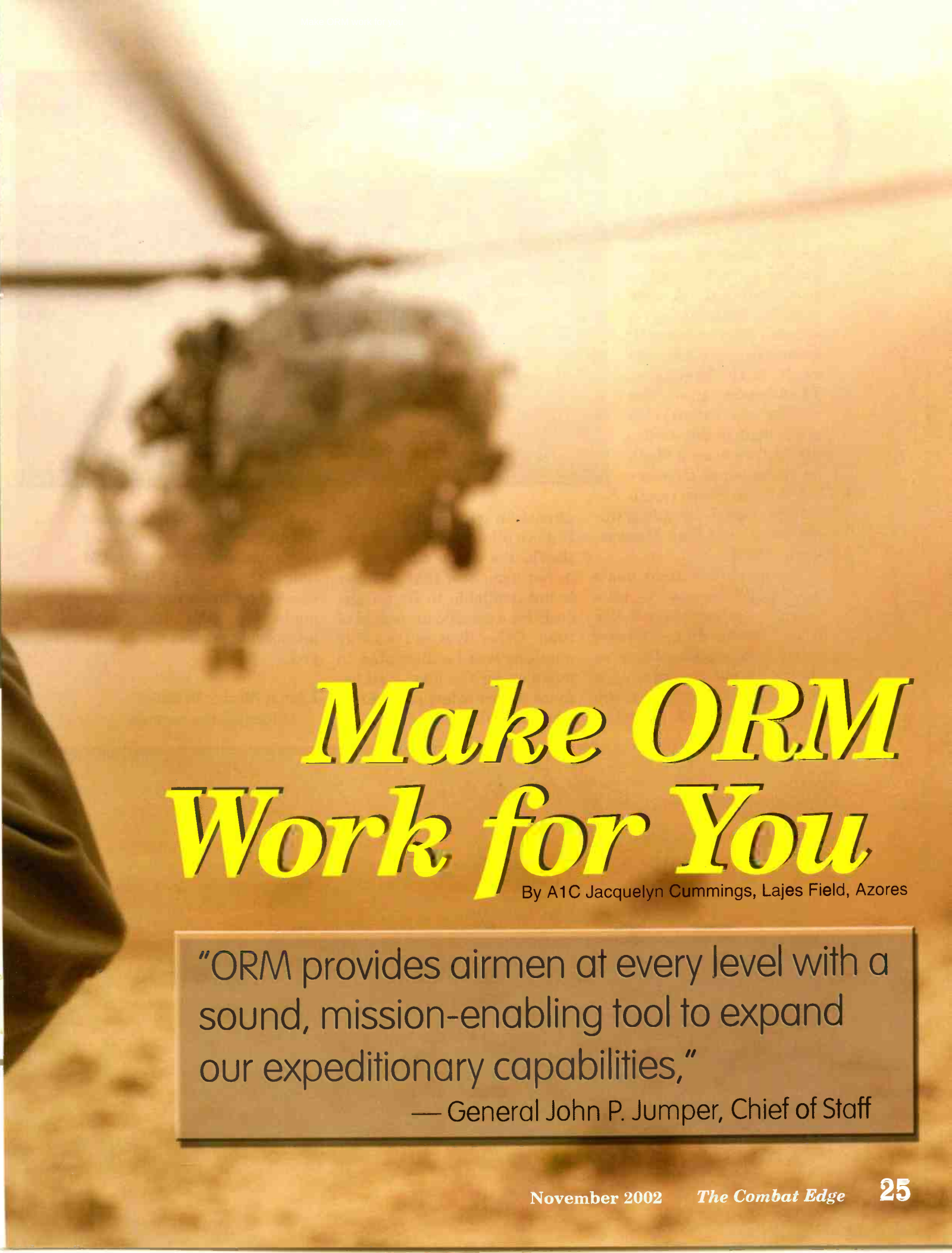
s and evacuation routes

individual working at the terminal immediately jumped clear of the fire. We were able to get the flames out, but the monitor was destroyed. If this had happened during non-duty hours, 16 workstations and our office space would have been destroyed.

Our ability to react in the event of a fire depends on our readiness. We must have proper training on the use of fire protection equipment, to include fire extinguishers and facility-mounted sprinkler systems. While fire drills can disrupt the normal day-to-day routine, they are necessary to practice the evacuation process and to ensure that everyone knows what to do. The importance of being ready for an emergency action situation cannot be overemphasized.

If a fire should occur what actions will you take? Who would you call? What is the emergency phone number? What specific information will the dispatcher require? Each individual in your organization is key to the success of your unit, the United States Air Force, and our country. Be prepared to take charge and ensure your team is ready and available to perform the critical missions of today, tomorrow, and beyond. Utilize caution, practice awareness, and prepare to take action as needed.

Photo by SSgt Myles Cullen



Make ORM Work for You

By A1C Jacquelyn Cummings, Lajes Field, Azores

"ORM provides airmen at every level with a sound, mission-enabling tool to expand our expeditionary capabilities,"

— General John P. Jumper, Chief of Staff

Career Development Courses or CDCs can be an airman's worst nightmare. It is my belief that the problem doesn't exist in comprehending the text so much as remembering a vast array of study material. It is especially difficult to remember the sections that cover issues we have not dealt with firsthand. Then again, there are things we intuitively implement in day-to-day life, but we draw a blank on them when they are put into Air Force terminology. A good example of this is Operational Risk Management (ORM).


Photo by MSgt Keith Reed

Every career field deals with ORM because — let's face it — nothing in life is risk free. The Air Force stresses safety because something as simple as not cleaning up a spilled cup of water on the floor could have a dramatic impact on our mission. How? If it is a pilot who slips because the floor is wet and breaks his or her arm, now that member is not available to fly an aircraft for a significant period of time. Other lives and possibly missions will be disrupted to make up for the loss — all because proper safety procedures were not followed.

We can drastically decrease the number of accidents caused by human error if we all would follow the six-step ORM process. The following acronym might help make ORM a more memorable process for each of you:

I Am A Master In Safety

1) **I**dentify the hazards

CSAF Guidance on ORM

By MSgt Ron Tull

WASHINGTON — Think about what you are doing before you do it. That is not a request.

Operational Risk Management (ORM) has existed in the Air Force since 1996, but a recent Inspector General Eagle Look assessment revealed that it needs to be given a higher priority. As a result, Chief of Staff of the Air Force, Gen John P. Jumper, has directed emphasis on the process at every level of command.

"ORM provides airmen at every level with a sound, mission-enabling tool to expand our expeditionary capabilities," Jumper wrote in a recent memo. "It is time to move forward in making ORM the natural way for our people to conduct their professional and personal activities."

Risk management is frequently thought of as a safety program, according to Karen Kinkle, the Air Force ORM program manager. "It's not only injury, illness, or loss of weapon systems," she said. "There are many other types of risk, such as force protection or environmental issues. ORM can be used to identify and assess anything that might have a negative impact on a mission, whether that mission is operational, support, acquisition or something else."

One of the goals of ORM is to create an environment in which all Air Force members are trained and motivated to manage risk in all they do, Kinkle said. The Air Force approach is to introduce the concept of ORM to airmen in basic training and expand upon it in technical school and supervisory training. Civilian personnel most often receive training at the local level. "The Eagle Look assessment cited some gaps in the training and pointed out that many of those who have been trained just aren't applying it in the workplace," Kinkle said.

2) **A**ssess the risks
3) **A**nalyze control measures
4) **M**ake control decisions
5) **I**mplement risk controls
6) **S**upervise and review

ORM plays a vital role in the Air Force. Personnel are the most valuable resource we have and everyone is needed in top condition, free of injury. If you come across a dangerous situation, take the time to process what you're up against. Ask yourself if this risk is really worth taking? Make mental notes on what you can and cannot control. Use these notes to consider what your decisions and actions will be. If you are still unsure of the correct action, ask friends, coworkers, or a supervisor. Review your findings throughout the process, and save this valuable experience for future reference. Don't let the terminology stand in the way of practicing good common sense safety every day.

The concept of risk management is not unique to the Air Force. It is used in various forms throughout the business world. The Air Force uses a six-step "building block" approach:

1. Identify the hazards
2. Assess the risks
3. Analyze risk control measures
4. Make control decisions
5. Implement risk controls
6. Supervise and review

"Operational risk management isn't rocket science, but it is more than just common sense," Kinkle said. "It's a systematic approach to making decisions by balancing risk against the benefits to be gained in any given situation and then choosing the best course of action." A principle of ORM is that risks may be accepted when a decision maker at the appropriate level determines that the benefits derived are greater than the cost of those risks.

ORM is emerging as a cultural change in the Air Force that builds on the "lessons learned" approach, Kinkle said. Properly applied, ORM ensures incorporation of lessons learned into planning and, ultimately, decision making. "Lessons learned are valuable," Kinkle added. "Let's use them, but also look at the mission or task before we do it, consider the reasons we might have problems, and establish controls to minimize the chance of failure. In order to make good decisions, whether it's deployment planning or recreational activities, we need to think about the consequences of our actions, and ORM is the best tool we have to do it."

Head-on Collisions Can Happen

By Ms. Paula Allman, Reprint Courtesy of *Countermeasure*, May 2002

On a warm September afternoon, Sgt Jones, 26, departed post and drove home on a two-lane road. Two other soldiers were in the vehicle with him hitching a ride. Sgt Jones was looking forward to dinner with his wife and twin sons.

As Sgt Jones headed north, a southbound vehicle veered onto his side of the road. At the wheel was a 16-year-old girl driving on her learner's permit. She was trying to pass a sport utility vehicle, but had failed to see Jones' car. The vehicles slammed into each other head-on. Jones' vehicle turned upside down and exploded in flames. Sgt Jones and one of his passengers were killed; the other was severely burned. The teenager and her mother, who was also in the car, were badly injured.

A simple error on a clear day, by a novice driver on a straight stretch of road, cost two men their lives and left two young boys fatherless. Every day, good drivers, obeying speed limits and the rules of the road, are nonetheless injured or killed by careless, drunk, inexperienced, or reckless drivers.

So how do these roadway accidents happen? And is there anything you can do to avoid them? Statisticians at the National Safety Council (NSC) analyzed the nation's 41,611 traffic deaths in 1999 (the latest available data). They were asked to determine common ways that "good" drivers — any of those found not at fault in an accident — were killed. Here are the sobering facts.

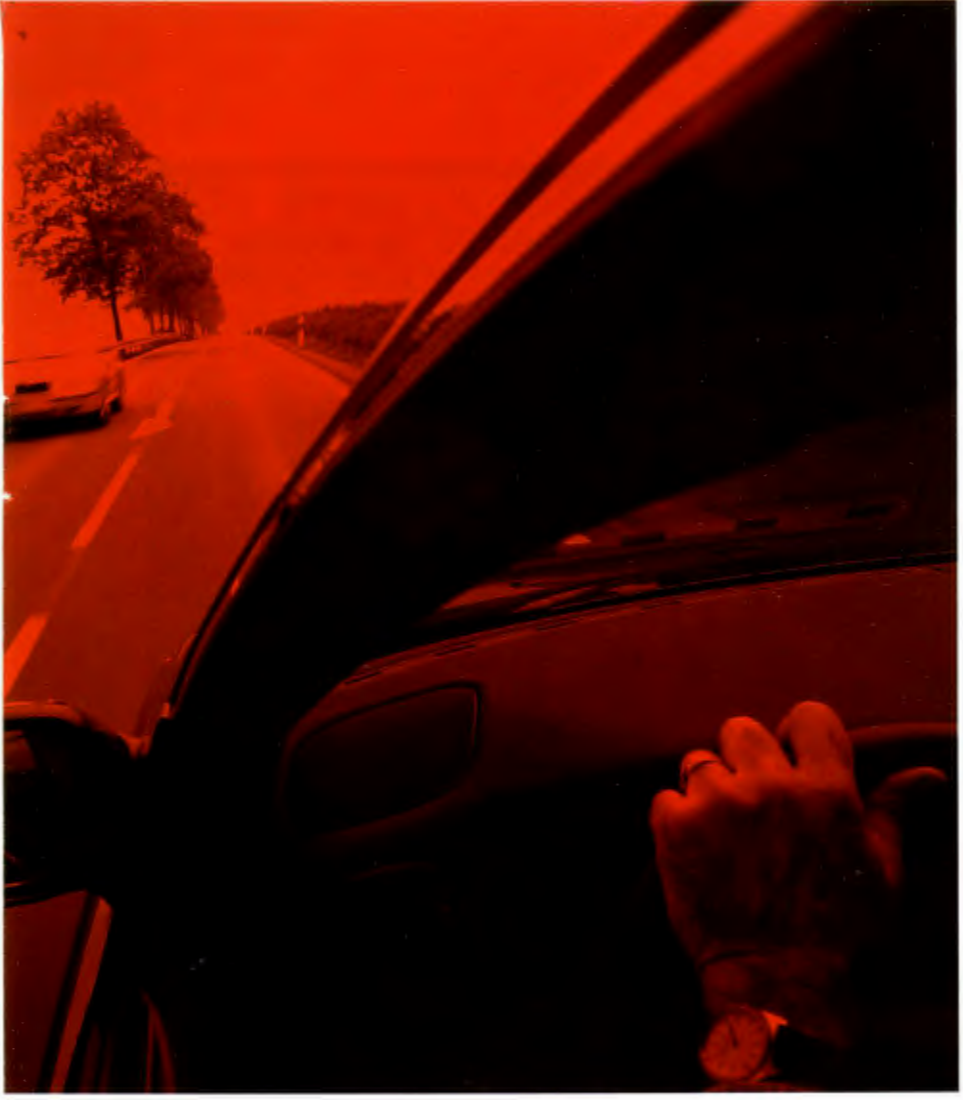
HEAD-ON IMPACT

The kind of accident that killed Sgt Jones and his coworker is a top killer of innocent drivers. Head-ons killed 42 percent of the good drivers in the NSC's survey. For those behind the wheel, death by an oncoming auto can be particularly devastating because of the laws of physics: the speed of both cars multiplies the magnitude of the collision.

Surprisingly, the NSC study shows that only 6 percent of head-on collisions are caused by drivers passing at inopportune times. Twenty percent occurred on curves where often a driver going too fast veered into the opposite lane. But the great majority, 63 percent, happened when drivers were steering straight. The crashes were likely caused by drivers who were distracted by other things (kids, changing a CD, talking on a cell phone), or who fell asleep and drifted into oncoming traffic.

We found that more than half of these head-ons occurred in

Using seat belts reduces the potential for fatal injury by 45% in a car and 60% in a light truck!



daylight and more than 80 percent of them in dry weather. That just goes to show that more fatal accidents of every type seem to occur in nice weather when drivers may relax their guard; rather than in bad weather, when the majority of drivers tend to be more cautious and attentive.

Is there anything you can do to reduce the risk of meeting another car head-on? There is one measure that eliminates much of the risk. Forget the scenic route and head for the highway. Use major highways where traffic flow is separated by medians, and access is controlled by on- and off-ramps.

STOP SIGN FAILURES

Perhaps the most familiar of all traffic signs — the red octagonal stop sign — turns out to be a significant risk to good drivers. Sixteen percent of drivers in the NSC analysis were killed because another driver either did not see, purposely ignored, or showed poor judgment at a stop sign. For example, drivers often stop or slow down at a sign and then pull out without bothering to check the intersection for an oncoming car. Or, they misjudge an approaching car's distance and speed and pull in front of it.

When approaching intersections, even when you have the right-of-way and see a car about to cross or enter the road you're on, don't just look at the car to see if it comes to a full stop. Check the driver too. Is he looking your way? Does he appear distracted? It could be your best warning of an accident waiting to happen.

RED-LIGHT RUNNING

Red-light running is another deadly accident for innocent drivers, killing 8 percent of them. Red-light running is on the rise nationwide. To avoid them, the best advice remains the lesson motorists learned from their high school driver-education teachers: Even when your light has changed to green, take one more look both ways before proceeding. Too many drivers consider the yellow light a "last chance" to get through an intersection, rather than a caution signal. Drivers must get into the habit to *Brake on Yellow, Stop on Red.*

The most important conclusion to draw from the statistics compiled by the National Safety Council is this: stick to major highways whenever you can. An overwhelming 86 percent of traffic fatalities happen on side roads and byways. Only 14 percent occur on major highways, according to statistics from the National Highway Traffic Safety Administration (NHTSA). And most obvious of all: wear your seat belt all the time, every time. Period! The NHTSA says seat belts reduce the risk of fatal injury by 45 percent in a car and 60 percent in a light truck.

Even with every safety precaution taken, soldiers must remember that the driver's seat is an inherently unsafe place to be. Learn to use your eyes to look far down the road. Learn to spot problems before they happen. Always remember that good drivers — in the safest vehicles, on the best-designed highways, on perfectly clear, dry, sunny days — can still have accidents.

Editor's Note: *Statistics are from the National Safety Council. At press time, Offutt AFB just experienced a head-on collision killing an airman and his wife. Seat belts were not being worn.*


Fleagle
WHAT A GREAT DAY TO BE OUT.
FEW THINGS BEAT A GOOD HUNT.
JUST YOU AGAINST TH' BEAST OF TH' WOODS.
WILL YOU LOOK AT THAT?
MAYBE I CAN USE A TRICK FROM TH' OLD DAYS.
©STAN HARDISON 2002
POW!
BANG!
BLAM!
POP!
RAT-A-TAT-TAT!
?
HARDIANN

FY02 Aircraft

As of September 30, 2002

	Fat.	Class A
8 AF		
9 AF		
12 AF		
AWFC		
ANG (ACC-gained)		
AFRC (ACC-gained)		

FY02 Ground

As of September 30, 2002

	Fatal	Class A	Class B	Class C
8 AF		11	2	124
9 AF		6	3	110
12 AF		10	2	245
DRU		3	2	36

FY02 Weapons

As of September 30, 2002

	Class A	Class B
8 AF	0	0
9 AF	0	0
12 AF	0	0
AWFC	0	1

Aircraft Notes

Finally, the end to a tough year both mentally and physically. The end of the flying year is a good time to reflect on our mishap record. With the ANG and Reserve components included, ACC had 25 Class A aircraft mishaps, 10 manned aircraft, and 7 UAV's destroyed, 2 ground Class A's during maintenance, and 6 aircraft that were repairable. Sadly, two of our aviators were lost during training missions this year. As we reflect upon last year's mishaps, pilot error and maintenance practices were prominent among the causes. Aviators must know the rules and limitations of their aircraft in order to save our combat assets. Maintenance must adhere to T.O. guidance and avoid the desire to cut corners. We must work hard to preserve our assets and prevent future mishaps. It doesn't matter how good your brief and debrief are if you haven't got airplanes to fight with.

Ground Notes

FY02 had 30 Class A mishaps which is an increase of 14 over FY01's total of 16. Class B mishaps also rose from 1 in FY01 to 9 in FY02, 7 were permanent partial disabilities and 2 were property damage. There were 515 Class C mishaps of which 190 were sport/rec, 88 PMV4, 77 misc., and 48 motorcycle mishaps. Overall not a good year. Let's all make FY03 a better year for ground safety.

Weapons Notes

Another good month for weapons safety. It's obvious people are continuing to follow tech data and applying Operational Risk Management to day-to-day operations. Within other commands we have noticed an increase in PGU Ammo and gun-related mishaps. Weapons profesionals are doing a tremondous job. Stay vigilant! Increase operations tempo can lead to fatigue which can result in a mishap. Keep up the good work!

Legend

Class A - Permanent Total Disability; Property Damage $1,000.000 or more
Class B - Permanent Partial Disability; Property Damage between $200.000 and $1,000,000
Class C - Lost Workday; Property Damage between $20,000 and $200,000
* Non-rate Producing

Symbols for Mishap Aircraft

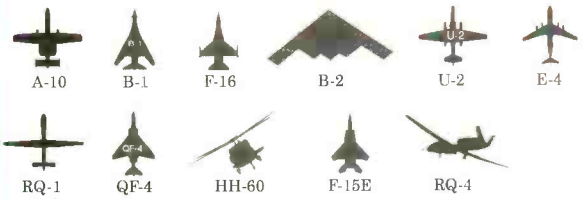


Photo by MSgt Dave Nolan

Lock on Safety

Operation ENDURING FREEDOM, flight operations continue around the clock at the 332nd Air Expeditionary Group. Active duty F-15E Strike Eagles from Mountain Home AFB, Idaho, and Air Force Reserve Command F-16C Fighting Falcons, were being flown by reserve pilots from Luke AFB, Ariz., flying joint strike missions into Afghanistan on Nov. 7, 2001.

The Combat EDGE