

The Combat EDGE

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Air Combat Command's Mishap Prevention Magazine

GENERAL JOHN P. JUMPER, *COMMANDER*

COL. GREGORY A. ALSTON, *CHIEF OF SAFETY*



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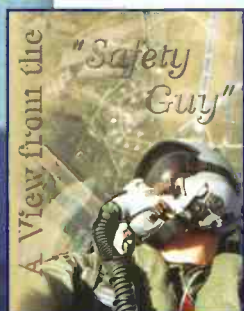
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OOPS! In our January 2001 issue, there was photo confusion on a couple of our award write-ups. Please see pages 22 - 23 for the correction and reprint of both awards.

MAJOR DANIELLE COLEMAN
EDITOR

BARBARA TAYLOR
ASSOCIATE EDITOR

MSGT HENRY BLANCHARD
&
STAFF SGT. NEIL ARMSTRONG
DESIGN & LAYOUT

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CONTRIBUTIONS: Please send articles, with name, rank, DSN phone number, e-mail and complete mailing addresses and comments to:

Editor, *The Combat Edge*
 HQ ACC/SEM
 175 Sweeney Blvd
 Langley AFB VA 23665-2700

Telephone: (757) 764-8808
 DSN 574-8808
 FAX: (757) 764-8975
 e-mail: danielle.coleman@langley.af.mil

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GUIDE TO PRM

I have written often about ACC's personal risk management (PRM) efforts. These efforts were started because the command recognized the need for a tool to help individuals increase their awareness of off-duty hazards. We were making great operational risk management (ORM) strides as our units used this 6-step process to eliminate or control hazards in daily tasks, deployments or other special events; however, we were falling short as individuals. The people in ACC continued to accept unnecessary risks that were causing serious injury or death and often when they were alone. This meant no one else was present to point out the hazards. It was this realization that gave birth to PRM as the way to increase individual awareness.

An excellent tool that was designed to help heighten that individual awareness is the ACC PRM guide. While it sometimes points out the obvious, it is a great reminder of the many hazards people must consider before engaging in various activities like biking, swimming, scuba diving, hiking and many more. The guide can be accessed on the ACC Safety web page at <https://wwwmil.acc.af.mil/se/>. Click on the "ORM" symbol at the top of the web page and then click on the guide for the current season ("Summer PRM Package" or "Winter PRM Package"). Once the word document opens, scroll down to the Table of Contents and click on a specific activity, and — presto — you will get a list of things to consider prior to participating in that activity, a list of the possible hazards associated with that activity and some suggested controls for those hazards. For example, you will find the following when you click on "mountain biking:"

Step 1: IDENTIFY THE HAZARDS: Weather, location, wildlife, etc.

Step 2: ASSESS THE RISK: Possible injury, bike damage, bears, etc.

Step 3: ANALYZE RISK CONTROL MEASURES: Check weather, check first aid kit, select trail for your skill level, do not follow other "risk takers," etc.

Step 4: MAKE CONTROL DECISIONS: Control risks or avoid them.

Step 5: RISK CONTROL IMPLEMENTATION: Use protective gear, be smart.

Step 6: SUPERVISE AND REVIEW: Be flexible, watch for unplanned events, reassess steps 1-5 as the situation changes (like weather), etc.

This guide is also a great tool for supervisors. They can use it to put together a fairly comprehensive safety briefing before their subordinates go on leave. No longer do supervisors only have to give the standard "get rest and don't drive all night" advice. By implementing ideas like this one, individuals in ACC will begin to reap as many benefits from PRM as the command has already reaped from our ORM efforts.

Col. Greg "Vader" Alston
ACC Chief of Safety



There I Was ...

*By Maj. Gen. L.D. Johnston
Air Warfare Center Commander
Nellis AFB, Nev.*

Some 25 years ago, a Numbered Air Force commander told us young weapons officers, "Don't worry that the Command's level of tactical training is so abysmal." He assured us that, "combat-induced adrenalin would make up for a lack of combat training." Obviously, the general's theory was a total crock.

However, many of us have discovered that in times of combat-induced stress, the normally unexposed, hyper-speed abilities of the human mind can indeed pull aviators out of some serious square corners. An example of this phenomenon happened to me almost 30 years ago.

Like many lieutenants at their first fighter training unit, the ONLY thing I internalized during my "Ejection Seat Training" was something like, "The F-4 seat has a million moving parts...that normally work." That wasn't very reassuring, but I thought, "What, me worry? Nobody will be able to lay a glove on me in 'Nam...I've got to spend my time learning how to kill MiGs!"

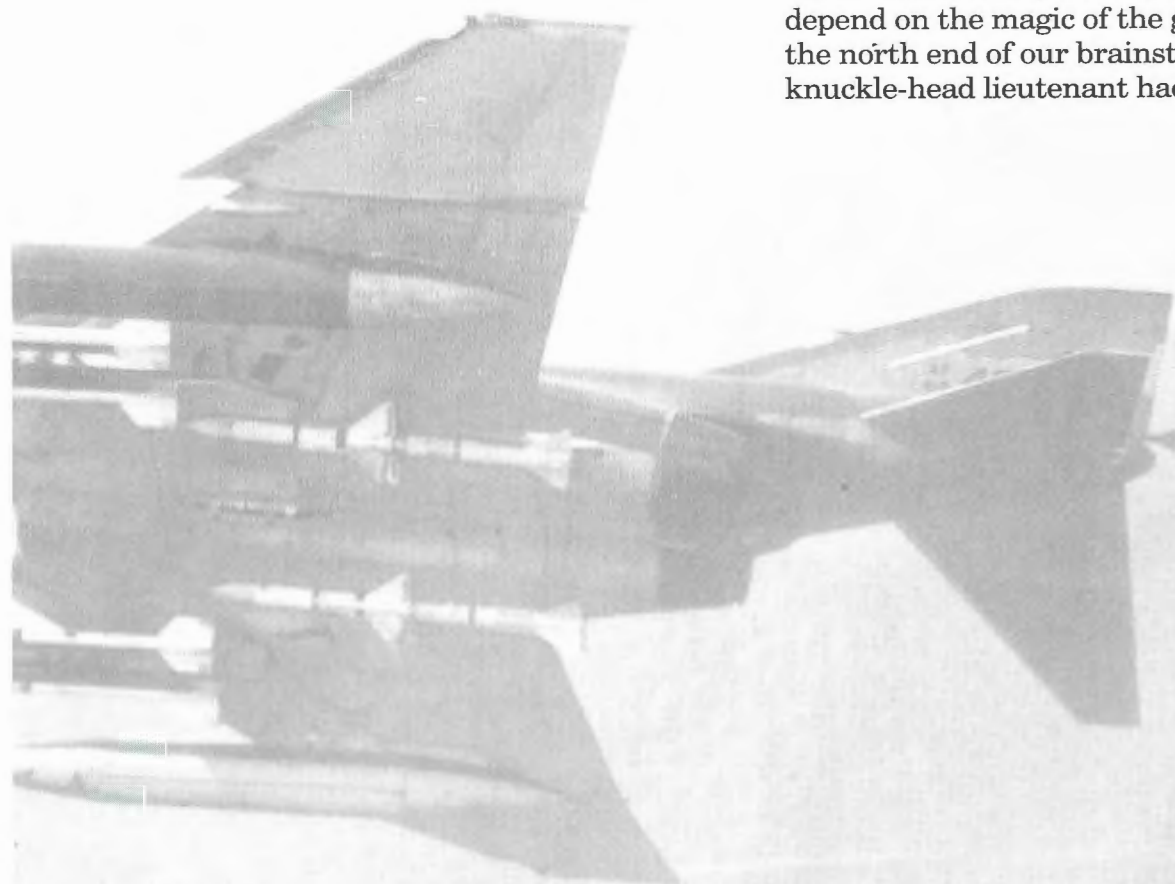
Some 15 months later, a 9-level ground gunner drilled me with a clip of AAA that caused me to go "flying though the air with the greatest of unease" — in other words, without the comfort of my cockpit's air conditioning system or the use of my Phantom's windscreen, canopy, engines, or wing. In short, I was suddenly flying ONLY my F-4's ejection seat! And guess what? ... NONE of its million moving parts appeared to "work normally!"

The seat's drogue chute did not work, which meant neither did the automatic man-seat separation. After finally getting away from the tumbling seat, the parachute's manual ripcord would not deploy the parachute the first two times (yes, the chute deployed the third time, so I did not die). There were other life support challenges during escape and evasion, but the unplanned free-fall was definitely the most interesting.

What amazed me then — and amazes me now — was HOW the human mind could remember information under stress. You see, during this plummeting ride in an ejection seat that was as foreign to me as my Dad's "personal recliner," somehow my pea brain went into hyper-speed, and reconstructed EVERY-

THING that a superb life support NCO had taught us about the F-4 seat some 15 months earlier. I don't know how it happened...but the combination of the NCO's detailed lesson and the miracle of human recollection allowed me to quickly resolve the mechanical problems of the seat and parachute...and ensured my survival.

While this was a very psychologically interesting event, I obviously would not propose that we bet our bodies on this "cerebral fortune" or on "combat-induced adrenalin." Instead, I would recommend that each of us consistently do our utmost to "consciously internalize" the workings of the aviation machinery that will keep us alive in a combat-induced, stressful situation. If we at least do this, we will not have to depend on the magic of the gray muscle at the north end of our brainstem...like a knuckle-head lieutenant had to in 1972! ■






Photo by Senior Airman Greg L. Davis, 1st Combat Camera

**I'VE NEVER SEEN FLASHES THAT
BRIGHT FROM TP BEFORE!**

Safety preface: We have all heard the seemingly timeless adage of "breaking the chain of events" to prevent a mishap. Once again, the truth behind such a simple statement comes to light quite literally in the unexpected explosions of 100 high-explosive incendiary 30mm rounds...

Training in the Dark

*By Lt. Col. Rick Turner
23rd Fighter Group Chief of Safety
Pope AFB, N.C.*

The sortie was briefed as a night two-ship to the local conventional bombing range with a high-time wingman. We each planned to drop six BDU-33 inert training bombs and shoot 100 training practice (TP) rounds using night vision goggles (NVGs) because of the high-illumination night. Our jets were not ready when they were suppose to be and then, the number 2 aircraft ground aborted due to an engine problem so I made a single-ship takeoff and headed off to the range. Range operations were going smoothly until the 45-degree high-angle strafe (HAS).

My first HAS pass was planned as a short 20- to 30-round "sighting burst" to establish a combat offset for the next pass. The unlit target was situated in the center of a 600-foot diameter circle marked by four lights positioned on the edges at the 12, 3, 6, and 9 o'clock positions. The first pass bullets generated a lot of "sparkles" as they chewed into the standard "painted bus" target. The range control officer (RCO) enthusiastically called, "Hit, One," as I maneuvered for the second and final pass.

I planned to shoot the remaining 70 to 80 rounds on this pass. The resulting longer burst also created a lot of "sparkles," but in a larger area than the bus should have occupied. I reasoned that they must be hitting the hundreds of near-hit BDUs (inert practice bombs) scattered near the target. Again, the RCO called, "Hit, One," as I safed the gun and flew to a base position for my last bombing event. As I approached base, the RCO radioed, "You sure that's TP you're shooting there, One?" I replied, "That's all they'll load." And then that sinking feeling hit me as the RCO said "Well, I've never seen flashes that bright

from TP before."

The bullets looked TP blue on my preflight inspection... hadn't they? I did not use a flashlight, but they definitely weren't yellow... were they? Besides, maintenance is not allowed to load high-explosive incendiary (HEI) rounds and park the jet on the normal parking ramp... are they? And, even if that were legal, I would have seen something about HEI in the aircraft forms, and I had reviewed those thoroughly... hadn't I? No, I told myself, these HAVE to be TP rounds loaded in my jet! The remainder of the sortie was uneventful as I dropped my last two BDUs, made a half-dozen dry Maverick passes, and then departed the range for home. But just to ease my nagging suspicion, the first thing I did after shutting down in the chocks was to open the gun bay and re-check the bullets with a flashlight. They were not blue TP but yellow HEI!

Most safety officers will compare the events leading up to an incident/mishap to the links in a chain. This one was no different. I will trace the origin of each link in the safety chain so that you, the reader, can hopefully see how dozens of small mistakes and rushed decisions resulted in the temporary loss of a valuable training range and cost hundreds of man-hours in explosive ordnance disposal (EOD) clean-up efforts. We were very fortunate that no one was hurt... or worse.

It all began at 8 p.m. on Thursday, the week prior. It was then that the aircraft was loaded with HEI and two MK-82 general-purpose bombs on the hot cargo pad for an Army live-fire exercise. During the pre-flight engine intake and exhaust inspection, the crew chief noticed feathers in the exhaust. A borescope inspection was accomplished, and two fan

blades were found to be damaged beyond limits. The determination was made at that point that the engine would have to be changed. Maintenance supervision canceled the sortie and requested that the weapons troops come out and download the MK-82s so the jet could be towed back to its normal parking spot. There was no immediate requirement to download the HEI prior to repositioning the aircraft, so it was held until later (link one).

After the aircraft had been towed back to its normal parking spot on the flight line side of the ramp, the crew chiefs began dropping the engine for replacement. They worked until their shift was over but were not able to complete the job they had started. Electrical and hydraulic power could not be applied to the aircraft while there was ongoing major engine maintenance. Without aircraft power, the weapons load crew was unable to download the HEI ammunition from the jet so the task was further delayed (link two).

Ironically, Friday was a group Safety Day and no maintenance was performed. On Saturday, the weekend duty crew came in to finish installing the engine. It was installed and operationally checked without event. The aircraft was pronounced fully mission capable (FMC), but it was late in the day. Because maintenance had already produced sufficient FMC aircraft for all of Monday's scheduled sorties, the weekend duty crew made the decision to wait and download the HEI ammunition first thing Monday morning (link three).

On Monday morning, one of the scheduled aircraft was discovered to have a liquid oxygen problem and the spare aircraft was substituted in its place. The production superintendent (pro-super), in conjunction with the squadron senior supervisor (Top-3), agreed to add this aircraft to the lineup as a spare for a sortie that would not require the use of the gun. The day shift Top-3 was reminded about the HEI and he agreed to brief all pilots.

There were more than 25 pages of information notes in the aircraft forms because of the engine change. The crew chief reviewed these and carried forward all the outstanding write-ups, however, he overlooked the note about the aircraft being loaded with HEI (link four).

There is usually no need to carry information notes forward on a day-to-day basis. The two information notes usually found in the forms are for ammo/chaff/flare and Mode IV. The ammo/chaff/flare note is recorded by weapons personnel during the weapons post-load, and the Mode IV note is written by communications and navigation troops before the exceptional release (ER) is signed. Both are on a computer-generated sheet that is replaced daily. When the pro-super signed the ER for this aircraft, he failed to notice that the HEI information note had not been carried forward to the new set of forms (link five).

Weapons safety procedures dictate that all aircraft loaded with HEI ammunition must prominently display an orange, X-shaped "2" fire symbol to easily identify the presence of explosives to emergency response personnel. The placard was properly affixed to the aircraft nose wheel by a bungee cord at the time of the ER, but was not noticed by the pro-super nor pointed out to him by the crew chief (link six).

One of the first launch aircraft returned Code 3. A system on the aircraft was non-operational and the aircraft could not be used for the next sortie. Now designated as the spare aircraft, the HEI-loaded jet was flown in the second launch without event. That pilot was briefed several times that the jet was loaded with HEI and the "2" placard was properly displayed when he arrived to preflight the aircraft. After recovery, between the second and third launch, the "2" placard was not put back on the jet (link seven).

Between the second and third launch, there was a complete shift change between the crew chief, pro-super, and Top-3 supervision. The new Top-3 was briefed about the HEI ammunition and he, in turn, briefed the pilot scheduled to fly that aircraft. Due to the timing of the pilot-ready jets and the mission priorities, the Top-3 made a change in the planned aircraft line-up. My wingman was unknowingly scheduled to fly the HEI-loaded aircraft. When my flight arrived at the operations desk to get a "step brief" from the Top-3, we were told that the jets were not yet ready. We were also told that number 2's aircraft was one of the new embedded global positioning system/internal navigation system (EGI) modified

aircraft which had an improved navigation and weapons delivery system that was procedurally very different and difficult for an inexperienced pilot to use properly. My wingman had never flown in an EGI jet and did not want to make his initial EGI familiarization flight at night. The Top 3 approved the jet swap at the duty desk. My wingman would then fly an unmodified jet and I unknowingly acquired the HEI-loaded aircraft (link eight). We waited at the operations desk with the Top-3 for 20 minutes before we received our "step brief." In all that time, the Top-3 made no additional mention of any of our jets carrying HEI or any other non-standard configuration (link nine).

We finally stepped out the door 20 minutes later than we had planned. The parking locations given to us were situated on opposite ends of the ramp and somehow had been reversed. This made us later still as we each walked first to the wrong jet, then all the way across the ramp to the correct one. My aircraft's forms were cluttered, and after reviewing 10-15 pages of information notes, I discovered that the intake and exhaust inspection (red X) had not been properly annotated and carried forward. The crew chief made the appropriate changes to the forms before I made my final review. The ER was not signed by the pro-super, which is not uncommon for second or third flights. I felt comfortable with my thorough review of the forms and signed my own ER (Red Dash) instead of delaying even longer to wait for the pro-super to come out and sign it off (link 10). There was no mention of HEI anywhere on the forms, the orange "2" placard was nowhere in sight, and the new crew chief never mentioned anything about the type of ammunition loaded.

The sun had just set about 10 minutes prior, but there was still plenty of ambient light to do a visual walk-around without using a flashlight. In order to check the bullet type in an A-10, you have to open a 5-by-7-inch access door under the nose of the jet and look up about 2 feet into the ammo feed mechanism. There is usually enough daylight reflected off the parking ramp into this area to easily distinguish bullet colors, but the sun had already set. I was late, in a hurry, and didn't use my flashlight because I thought there was still enough

natural light to determine color (link 11).

I had been flying at this particular base for more than a year and a half and had never seen anything other than TP rounds loaded in the gun for local area sorties. We had only recently completed the approval process for live ordnance, and I knew that there were specific restrictions on where these jets could be parked. I was under the impression that if HEI rounds were loaded in a jet, then that jet would have to be parked in the live load area, not on the regular parking ramp (link 12). I was in a rush to meet my takeoff and range time and as I looked up into the gun bay, I saw dark colored bullets in the feeder mechanism that appeared blue because that was what I was expecting to see. At that moment, I became link 13, the last link in this long "safety chain."

The final result of this long chain of events was 100 rounds of 30mm high-explosive incendiary ammunition, a few which undoubtedly did not explode, spread across the training range and an out-of-cycle range clean up costing hundreds of EOD man-hours. Everyone who participated in this chain of events had at least one chance to prevent this incident. They could have followed tech order guidance to the letter, paid closer attention to the details, applied sound common sense and/or operational risk management principles, or just had the presence of mind to ensure that important details were communicated properly and timely.

The breaking of any one of the 13 links of this chain would have prevented this mishap. In the grand scheme of life, our actions at any given time may seem insignificant; however, the cumulative effects of those actions, along with the actions of everyone around us, can easily lead to a mishap or to the prevention of a mishap. The links in a chain that can lead to a mishap must be proactively identified at every level before it is too late to turn back. In this case, the bullets were already on the target before the links became obvious. This was definitely too late. Don't get caught as one of those links in a mishap chain the next time you find yourself training in the dark. ■



Bird/Wildlife Aircraft

According to airline industry estimates, birds and other wildlife have been responsible for the death of at least 350 people since the industry began keeping such records. Aviation officials are concerned that this number will continue to grow as the number of incidents increases. In 1999, according to the Federal Aviation Administration (FAA), pilots reported a record 4,798 collisions with birds. This was up from 1,720 in 1990.

*By Maj. Bradley D. Bartels
Air Warfare Center F-16 Flight Safety Officer
and
Master Sgt. J.C. Bollman
Air Warfare Center Range Safety Developmental Projects Officer
Nellis AFB, Nev.*

One reason for the increase is certainly improvements in reporting procedures. However, other factors have contributed as well. The bird population is on the rise because more wildlife refuges are being

Strike Team

created every year. The number of planes flying every year is also going up. These newer planes compound the problem because they are quieter and faster. The increasing numbers on both sides adds to the congestion and can only result in more collisions. This potential for disaster is not limited to just civilian aircraft. Since 1985, there have been 41,535 bird strikes to Air Force planes costing the Air Force almost 522 million dollars. One of the more devastating incidents happened in 1995. Twenty-four Air Force crewmembers were killed when an AWACs aircraft crashed after the engines ingested a flock of geese. It is because of these figures and lost resources that the U.S. Air Force takes aircraft vulnerabilities to bird strikes so seriously and implements the Bird Aircraft Strike Hazard (BASH) program so vigorously.

BASH is officially tasked with preserving war-fighting capabilities by reducing the wildlife hazards to aircraft operations. Flight Safety offices provide worldwide on-site technical assistance for this program. These offices are responsible for developing research programs to reduce bird strike potential around airfields and during low-level flight operations. The Air Force BASH team manages the largest bird strike database, which is often used for conducting detailed statistical analysis for aircraft component design and environmental assessments. In addition to this database, the following Internet sites also provide valuable information on this subject:

<http://www.nw.faa.gov> - This site offers the FAA National Wildlife Strike database from 1990-1998. This database is in a 13-page slide show presentation including the Wildlife Hazard Management System, alti-

tude of occurrence and a breakdown by species.

<http://www.int-birdstrike.com> - This site provides information from the International Bird Strike Committee, which was set up as a voluntary association of professionals working towards reducing the frequency and risk of bird strikes.

<http://www.birdstrike.org> - This site has a forum where U.S. civil and military aviation can exchange information on bird strikes and wildlife management data.

<http://www.birdcast.org> - This site offers displays by species, daily bird counts, control data and acoustic data.

<http://www.ahas.com> - This site is the Avian Hazard Advisory System. This evaluates the current and forecasted risk on visual rated routes, instrument rated routes, ranges, military operating areas, military airfields and the U.S. Bird Avoidance Model (BAM) maps.

<http://www.afsc.saia.af.mil> - This site is the Air Force Safety Center's Aviation Page, which offers information about avoidance, harassment, strike statistics and wildlife information.

<http://wwwmil.acc.af.mil/se> - This site features the BAM, which creates a map of the relative risk of bird strikes for a selected flight route.

<http://www.tc.gc.ca> - This site offers the Canadian transport procedures manual, which includes flight manuals, bird strikes and bird statistics reporting along with wildlife control awareness program.

<http://www.safetycenter.navy.mil/aviation/operations/bash> - This site is the premiere Navy web site offering bird strike data for every Naval Air Station and Marine Corps Air Station in the U.S. and overseas.

While there are many other useful websites, these mentioned here are among the best. Birds and wildlife will always be a hazard to aviation. However, if we recognize the potential for catastrophe and use planning models, we can reduce the contributions made every year toward the bird strike statistics. Staying current on the latest information and sharing new information will help to mitigate some of the vulnerabilities our planes face when we share the skies with our feathered friends. ■



Mishap Prevention Planning

*By Chief Master Sgt. F.J. Milligan
Air Warfare Center Safety Manager
Nellis AFB, Nev.*

The term Air Warfare Center (AWFC) is normally associated with the words unique and busy. Despite our very high OPSTEMPO, we manage to successfully accomplish the mission. The key to our success is a safe, healthy work environment for our people. This environment is established and sustained by an aggressive mishap prevention program. In fact, a vibrant mishap prevention program acts as a force multiplier, preserving our precious assets: our people and resources.

"Safety," like any other process or military operation, does not just happen. A plan is required to achieve the desired goals. Following is how the AWFC tackles the safety process:

Balance. In every operation, we balance the possibility of a mishap and the resulting consequences with the objective of the operation. The AWFC has implemented this process through the effective use of operational risk management — a tool that allows commanders and personnel at all levels to make precise decisions that balance risk with readiness or productivity. In our flight world, commanders, pilots and maintenance personnel all assess whether the risks posed by weather, crew fatigue, mission profiles, crew training and other factors are worth accepting in order to complete objectives for a training event, search and rescue, test or other type of mission.

Plan. We plan for success by matching resources to the tasking. It is a leader's responsibility to ensure that his or her people have the resources and training necessary to accomplish their assigned task. Extending people beyond their resources, training or ability, is a plan destined to fail. When occasional mishaps do occur within the AWFC, we

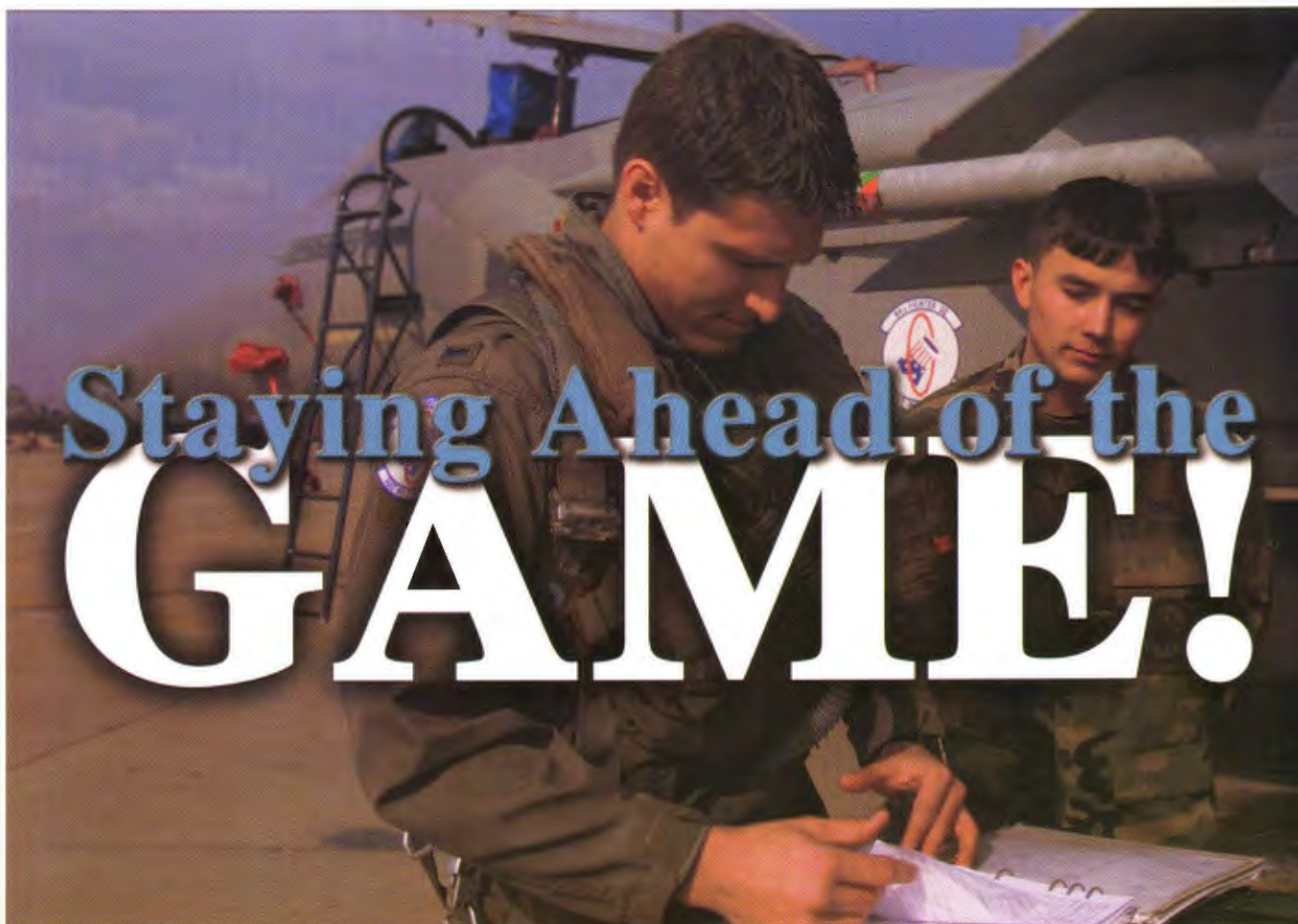
take actions to learn as many lessons as possible and we update and change our plan. Our weapons and range operations have an extremely low number of mishaps, in spite of the high number of complex and high-risk missions. Why? Because each has a well defined plan that is updated regularly.

Execute. Mishaps are usually the result of poor execution. The best plan does no good if it is not used or is outdated. Our nuclear unit carries an impeccable safety record that is due to strict adherence to plans and no tolerance for deviations.

Teamwork. This is where our ground operations come together. We work as a team and back each other up. Most mishaps in all safety disciplines are caused by human factors. Ground safety has embraced personal risk management and is institutionalizing this concept to control off-duty mishaps and teach teamwork. We want to help each other whether on or off duty. It is that simple.

Leadership. The true "chiefs of safety" are our commanders and leaders at every level. The most common mistake in the Air Force is when our supervisors do not accept their role as a leader. These positions are not just functional activities. They have leadership responsibilities. Leaders must involve everyone in planning and execution. If everyone is involved with a plan's formulation, they will understand what they are accomplishing and can aggressively, but safely execute the plan.

These elements make the AWFC's safety process a success. I hope the insights shared here will help others win the mishap prevention battle. An aggressive mishap prevention program gives everyone a stake in helping to preserve the Air Force's warfighting capabilities. ■



Staying Ahead of the GAME!

Though I have been flying for over 20 years now, the one event that still sticks out in my mind is one of my first sorties as pilot in command. The lessons I learned from this “near mishap” have stuck with me through the years, helped me fight complacency and kept me focused on the tasks at hand—no matter what the mission.

Long ago and far away, I started out my flying career as a T-38 instructor pilot. As a green bean in the squadron, the plan was to give me a couple of strong students from the class that had just advanced from the mighty Tweet. Surprisingly, on the first day, a third student, let’s call him “Stanley,” appeared out of nowhere and parked himself at my table. Instead of protesting my new addition, I let him stay and pressed on. While I knew I was God’s gift to undergraduate pilot training (UPT), I had minimal experience and figured out early on that Stanley was going to be a

challenge. His gray matter was not quite soaking in my words of wisdom or my attempts to emphasize certain things. In fact, I was using a lot more red ink than I had originally planned. But Stanley did progress with the class and we soon approached the solo phase of training.

A ride or two before solo, I found myself once again in the cockpit with Stanley. We had returned from the area to work on overhead patterns. The area work had not gone too badly, so we were both feeling pretty good. We shot a couple of patterns and I gave my standard “little power” and “watch the altitude” comments, but all-in-all things were going okay. This was true especially when compared to some of the other sorties we had experienced together. I began to think (first problem - I know) that Stanley was “beginning to get the picture.” It was then that the fun began on the next pattern.

The final turn on this one had been pretty

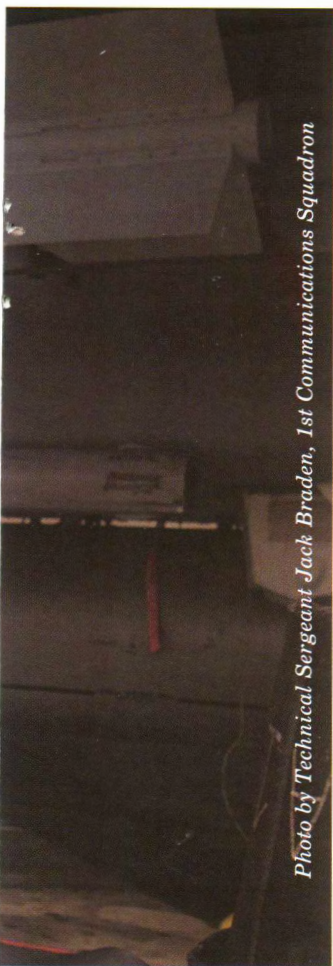


Photo by Technical Sergeant Jack Braden, 1st Communications Squadron

good, but we were a little steep on final. Stanley seemed to be correcting though so I let him continue. I did not want to be like one of those control-riding instructor pilots (IPs) I had heard about. One of my UPT classmates had literally flown the final turn, hands off, as the controls magically moved themselves. He got a great rating on that pattern. I was bound and determined not to repeat that kind of experience for any of my students. Besides, "I was a great pilot" and had cat-like reflexes. I knew I was prepared for everything — except for this...

Yeah, Stanley had been correcting his glide path, but he definitely lost the feel for altitude above the runway. As we crossed the overrun, he chopped the throttles to idle (just like the rest of his patterns) and raised the nose to flare. Unfortunately, we were still about 50-100 feet in the air. I immediately

grabbed the controls and slammed the throttles to full afterburner, but I could not stop that sinking feeling. We bounced on the runway and immediately rolled 90 degrees to the left. So I kicked in the right rudder. Sure enough, just like the books say, the rudder is the last thing to stall and we immediately rolled over on the right wing. Finally, I was able to play in the right amount of rudder and get the wings level. About that time, the afterburner decided it would finally cooperate and lit off. We gently climbed away and I brought the bird around for a full stop. Sometime during landing roll, when I was trying to surgically remove the seat cushion, Stanley said: "Don't know about you, but that scared me." See — he really did have intuitive powers of observation!

I had always heard stories about time compression and was not sure I believed them, but that little ride proved to me that it really does exist. During the few seconds of that dance, I can clearly remember waiting for the

crunching and cartwheeling to begin; thinking about the fact that next month I was supposed to get married and my wife-to-be was out of town; wondering when in the heck that afterburner was finally going to light; and, oh yeah, after we started climbing away, hearing "FLARE GO AROUND!!!" It was like being in a state of suspended animation. Afterward, the runway supervisory unit controller informed me that all he could do was swallow the mike as we did our little saber dance with less than three feet clearance between the runway and the wingtip.

That ride taught me to never get comfortable till I am home in my easy chair. I learned that as a flight lead, IP or wingman, I have to be well ahead of the jet. If I ever see myself losing the capability to think ahead of the aircraft and my wingman or student, then I will immediately "Knock-it-Off" and avoid the Christmas rush. I did not realize it at the time, but I was starting to set my own risk management limits. I would much rather tell my student, wingman or flight lead that I did not feel comfortable in certain positions, than risk losing control of the situation again. As an A-10 IP, I have found that rule of thumb extremely important. Since all instruction in the hog is from a chased position (there are no family models still flying), I know even less about what is actually happening in that other cockpit than I did in that T-38. This keeps me keyed to send the flight around early. If I find in the debrief that the individual I was flying with recognized the situation and was correcting — great! We both still learned something from the event, and, even better, we are both still alive to talk about it.

Through the years, I have read too many mishap reports that highlight good pilots who let themselves get complacent. Often it was "just" a cross-country, an external tank check sortie or a continuation training mission to the range with experienced pilots in the formation. But I am here to tell you that there is no such thing as a "no threat" sortie. If it does not look right, smell right and taste right, then it is probably wrong and could hurt a bunch. If you are not well ahead of your aircraft, wingmen, crew and mission, then "Knock-it-Off" and regroup or go home. The risk is not worth the cost. I was lucky enough to have survived this one, but I doubt I will ever be that lucky again. ■

F4D Phantom II

The F-4 is a two-place (tandem), supersonic, long-range, all-weather fighter-bomber. Mission capabilities include: long range, high-altitude intercepts utilizing air-to-air missiles as primary armament and close air support missions utilizing a choice of bombs, rockets and missiles as primary armament.

General Characteristics

Length: 62 feet, 10 inches (18.9 meters)

Height: 16 feet, 6 inches (5.0 meters)

Wingspan: 38 feet, 5 inches (11.7 meters)

Max Speed: 1,459 mph

Ceiling: 59,400 feet

Range: 1,375 miles

Armament: Up to 16,000 pounds of externally carried nuclear or conventional bombs, rockets, missiles or 20mm cannon pods in various combinations.





PILOT SAFETY AWARD OF DISTINCTION

*Lt. Col. Kevin L. Martin
71st Fighter Squadron, 1st Fighter Wing
Langley AFB, Va.*



On 6 Oct. 00, Lt. Col. Martin and his wingman were flying their F-15s in a 2V2 air combat training sortie 150 miles out over the Atlantic Ocean. During a launch and leave portion of the sortie, Lt. Col. Martin and his wingman performed a 180-degree maximum performance turn and accelerated to leave the fight. While passing 500 knots and the transonic region, Lt. Col. Martin's aircraft violently shuddered and started to tuck and roll right. He quickly reacted to counter the motion with left aileron and kept the aircraft controllable while simultaneously canceling afterburner to reduce the aircraft's speed. Lt. Col. Martin then expertly coordinated a "Knock-It-Off" and quick rejoin with his wingman while he pointed his aircraft toward home, declared an emergency and looked over his aircraft for damage. Lt. Col. Martin immediately noticed pieces of his left vertical stabilator missing and a master caution light with an associated hydraulic light. Lt. Col. Martin's wingman rejoined and completed the battle damage check, confirming that not only was 80 percent of his left vertical stabilator missing, but the rudder was completely gone, the left horizontal stabilator was badly damaged, and the cone between the horizontal stabilator and the left engine was destroyed. Lt. Col. Martin and his wingman then continued toward home while avoiding populated areas in the case that more pieces of the aircraft should fall off, or more catastrophically, should the aircraft become uncontrollable. During the RTB at 10,000 feet, Lt. Col. Martin configured the aircraft and performed a controllability check noting that the aircraft abruptly rolled right at landing airspeeds. He conferred with the SOF and decided that the aircraft was landable by using approach speeds just above the uncontrollable speeds found during the controllability check. He reduced the gross weight of the aircraft, confirmed the correct landing configuration, and chose an approach path to the airfield that would avoid populated areas. He then expertly landed the aircraft despite significant crosswinds that were compounded by his missing vertical stabilator. Upon landing, he shut down both engines and had the aircraft towed by maintenance. Lt. Col. Martin's superior situational awareness and decisive actions were responsible for preventing the destruction of a 35 million dollar combat resource, and possible loss of life.

AWARDS

AIRCREW SAFETY AWARD OF DISTINCTION

*Cpts. Michael Starr and Roy Fatur
1st Lts. Thomas Bickerstaff and Edward Sumangil
34th Bomb Squadron, 366th Wing
Mt. Home AFB, Idaho*

A crew from the 34 BS arrived at Ellsworth AFB S.D. to ferry a B-1B back to their home station at Mt. Home AFB, Idaho. The crew departed Ellsworth with Lt. Bickerstaff at the controls, climbing through weather to avoid forecast icing and turbulence over western South Dakota. Several moments after reaching their final altitude of 30,000 feet, Lt. Bickerstaff reported, "My control stick's locked up!" Capt. Starr assumed control of the aircraft to find that although he retained pitch control, the stick would not move at all in the lateral direction. With the plane beginning a slow roll to the right, the pilot took the necessary actions to disconnect the linkage between the two control sticks. Though Capt. Starr's stick remained frozen initially, with a subsequent forceful left input, the stick suddenly broke free. With the sticks disconnected, Capt. Starr commanded movement of the flight controls through mechanical linkages only, while Lt. Bickerstaff was solely capable of controlling the aircraft via electrical servos and actuators. Lacking any information regarding the source of the lockup, the four aviators concluded their best course of action was to proceed to Mt. Home with Capt. Starr, as the most experienced pilot, continuing to fly the aircraft with the disconnected sticks. En route to their home station, Capt. Starr determined that precise control of the aircraft was not possible without the assistance normally offered when the B-1B dual flight controls work in tandem. After the crew coordinated for the use of a nearby military operations area, he performed two practice landing approaches from 20,000 and 18,000 feet. Though it was not difficult to maintain an established course or descent rate, any attempt to change the aircraft's flight path resulted in a rapid overshoot of the intended parameters. Working together, the crew decided to attempt a landing from an extended straight-in approach to recover the aircraft. After lining up the runway centerline, Capt. Starr relied on power application to control the descent rate, flare, and touchdown. They successfully landed the aircraft on the first try. Subsequent investigation revealed a build-up of excess chaff particles had prevented intruding moisture from flowing through the aircraft as designed. As a result, the water had been redirected to an exposed pivot point in the mechanical roll linkage, where engineers theorized it froze and prevented any lateral movement of the control sticks. Capt. Starr and his crew displayed ingenuity, courage, and skill in their handling of this previously undocumented malfunction, saving not only their lives, but also a national asset valued at over 280 million dollars.

WEAPONS SAFETY AWARD OF DISTINCTION

*Tech. Sgt. Gary M. Spangler
28th Munitions Squadron, 28th Bomb Wing
Ellsworth AFB, S.D.*



During a routine scheduled inspection of a Conventional Rotary Launcher (CRL), structural damage to a phenolic block was discovered. This particular phenolic block is not listed within given inspection criteria as an inspectable item. The phenolic block's purpose is to secure several major electrical and hardware components. If this block fails during flight, pieces could either be ingested in the aircraft engine intakes, damage the aircraft hydraulic system, cause damage to the \$750,000 composite graphite tube, or the attached electrical cables could wrap around the 2,000-pound weapons fin and present a very dangerous condition during weapons release. Sgt. Spangler's thoroughness led him to the technical order (TO) for further guidance in correcting this matter. To his dismay, the TO did not reference any portion of the damaged phenolic block. Realizing the significance of his discovery, Sgt. Spangler initiated a one-time special inspection on all locally assigned and worldwide CRLs. Of the 19 CRLs inspected, six were found with similar phenolic block damage. On a broader scope, he immediately contacted the assigned Air Force Item Manager and designing Boeing structural engineers for assistance. In a joint effort, this team of specialists worked to resolve the failing phenolic blocks issue while further researching to identify any additional areas of the block that also needed established inspection criteria. In a culmination of effort and expertise, Sgt. Spangler made a proposal to build future phenolic blocks out of a stronger, proven more reliable material. In addition, he proposed relocating segments of electrical equipment to ease load tension. Due to Sgt. Spangler's diligence and dedication to the mission of the B-1B, the entire TO inspection criteria, along with his proposed suggestions are currently under review. His outstanding ability to quickly assess a hazardous situation and take immediate, wide-ranging action, prevented a possible in-flight catastrophe.

FLIGHT LINE SAFETY AWARD OF DISTINCTION

*Staff Sgt. John D. Davis, Jr.
27th Component Repair Squadron, 27th Fighter Wing
Cannon AFB, N.M.*



Sgt. Davis was supervising preparation of a pallet for deployment to Southwest Asia in support of Operation NORTHERN WATCH when he noticed a contamination indicator on a hydrazine-shipping casket. This indicated the possibility of a hydrazine leak within the container. He immediately notified his supervisor of the situation, initiated an evacuation of the surrounding area, cordoned off the area to limit possible exposure, and directed the base hydrazine response team and emergency vehicles to the area. As a result of his quick thinking and decisive actions, the entire area was evacuated in under 3 minutes, no personnel were exposed to this highly toxic chemical, and the hydrazine container was properly secured and then transported to the Fuel Systems Repair shop for recovery of the hydrazine. Sgt. Davis' actions not only prevented a potentially serious mishap or a possible in-flight emergency and divert to an airfield ill equipped to deal with hydrazine, but also kept the deployment to Southwest Asia on schedule by preventing an undue delay in uploading the cargo. Sgt. Davis exemplified true risk awareness and professionalism.

CREW CHIEF SAFETY AWARD OF DISTINCTION

*Master Sgt. John Bazzle and Tech. Sgt. Carolyn Schafer
303rd Fighter Squadron, 442nd Fighter Wing
Whiteman AFB, Mo.*



Sergeants Bazzle and Schafer were performing an engine run on an A-10 aircraft for an oil leak check. The engine had lost nine half-pints of oil the previous night during a 2-hour sortie. The day shift had performed maintenance on the aircraft, replacing the oil pressure regulator and accomplished an operational check with no discrepancies noted. Sgt. Schafer, who was assigned to night shift, decided to perform one more operational check before the aircraft was released back to service. During the engine run, Sgt. Schafer was in the cockpit and Sgt. Bazzle was connected by interphone on the ground. First, the #1 engine operated at idle for 5 minutes

and no leaks were noted. Then, the throttle was advanced to 85 percent for 5 minutes then placed back to idle. Still no problems were noted. Finally, Sgt. Schafer decided to advance the throttle back to 85 percent one more time. Approximately 3 minutes into the run, the engine oil pressure light came on and the oil pressure gauge dropped to 38 psi and was falling. Sgt. Schafer then pulled the throttle back to idle and the oil pressure recovered to 41 psi. At this time, Sgt. Bazzle noticed oil blowing from the exhaust and advised Sgt. Schafer to shut down the engine. On engine shut down, smoke and oil were coming from the tail pipe, which instantly turned into flames. As Sgt. Schafer called in the ground emergency over the UHF radio, she began to motor the engine to avert a major fire. The fire was extinguished when the engine was motored. When the fire department arrived, smoke was still coming out from the tail pipe of the engine. Sgt. Bazzle then advised Sgt. Schafer to motor the engine for 2 more minutes, which expelled all the smoke from the engine. Due to Sergeants Bazzle and Schafer's exceptional attention to detail, quick response and expert handling of the situation, no injuries were incurred and a multi-million dollar aircraft was saved from destruction.

GROUND SAFETY AWARD OF DISTINCTION

*Staff Sgt. Vincent L. McWilliams
303rd Fighter Squadron, 442nd Fighter Wing
Whiteman AFB, Mo.*



Sgt. McWilliams was accomplishing an initial look phase inside the F-139 panel when he noticed that the left pitch control interconnect pushrod attaching bolt was not secured with a cotter pin. Further investigation revealed that the right pitch control interconnect pushrod was not secured either and both the retaining nuts were loose. He brought this to the attention of his supervisor and because this is not a specific inspection item for this inspection, Quality Assurance elevated this concern to A-10 SPO Depot at Hill AFB, Utah. Substantiation of Sgt. McWilliams' discovery eventually resulted in an Immediate Action Time Compliance Technical Order (1A-10-1441) that required the immediate inspection of the left and right pitch control interconnect pushrod for proper attaching bolt cotter pin installation on all other A-10 aircraft. Further validation of this finding was established when seven A-10 aircraft from other units were found as

being deficient. Sgt. McWilliams' professionalism is portrayed by his attention to detail.

WEAPONS SAFETY AWARD OF THE QUARTER

*Staff Sgt. Benjamin R. George IV
86th Fighter Weapons Squadron
Eglin AFB, Fla.*



Sgt. George's efforts contribute to the safe and successful execution of ACC's premier Air-to-Ground Weapon System Evaluation Program (A/G WSEP). He personally persuaded Ogden Air Logistics Center's senior leadership to provide a dedicated munitions assembly facility for all A/G WSEP operations conducted at Hill AFB, Utah. Sgt. George's uncommon persistence eliminated the need to utilize already saturated ACC munitions facilities and allowed for safe and autonomous A/G WSEP operations. He also performed an in-depth safety inspection of the deployed munitions assembly facility to ensure all equipment was serviceable and in proper operating condition.

During the facility safety inspection, he personally identified and rectified an overdue munitions hoist inspection and ensured the hoist met safety requirements. As lead munitions assembly evaluator, he closely supervised three teams of deployed munitions personnel for over 90 days during A/G WSEPs 00-10 and 00-13. His vast munitions expertise was called upon time and again in the development of a detailed munitions assembly schedule that would accommodate separate and highly complex munitions operations simultaneously conducted at Hill AFB.

Sgt. George reviewed training records of all deployed technicians to ensure only fully qualified personnel were permitted to handle munitions. He also performed countless over-the-shoulder evaluations to validate personnel proficiency and gauge the deployed unit's knowledge of safety standards. He astutely identified a discrepancy between the AGM-130 assembly technical order and the F-15E Non-nuclear Munitions Loading Manual while monitoring the assembly and testing of eight live AGM-130s. His attention to detail enhanced safety of flight by ensuring the AGM-130 fuze arming lanyard device was wired correctly prior to mission employment. In addition, he focused the efforts of several technicians from the Boeing Corporation throughout critical AGM-130 and GBU-15 telemetry installation and testing, and supervised the installation of flight termination systems in all AGM-130s. His exacting standards promoted strict range safety and provided weapon command destruct capability from the mission control center.

Sgt. George was selected by the A/G WSEP project officer to serve as the first-ever maintenance liaison in the mission control center during AGM-130/GBU-15 missions. His munitions expertise provided real-time maintenance analysis and weapons safety oversight during actual weapons employment. He further evaluated the safe assembly and testing of an additional 28 GBU-15s (general purpose bombs), 4 GBU-10s and 2 GBU-24s. During the GBU-15 buildup, he discovered another technical order deficiency involving the ADU-456 guidance section torquing procedures that resulted in improper spacing between the weapon's guidance section and the warhead. His tenacious drive and superior munitions experience were instrumental in averting a potentially catastrophic in-flight weapons mishap. Sgt. George then submitted an AFTO Form 22 to correct the ambiguous guidance section torquing procedures. He recognized a need for an in-depth munitions safety course which would highlight weapon safing, arm/de-arm procedures, and hung weapon procedures for AGM-88, AGM-65G, and laser-guided bombs. He then developed and implemented a comprehensive weapons academics course that will pay huge dividends towards weapons safety for all future evaluations.

His continuous efforts to improve the 86 FWS Safety Program culminated in the squadron receiving an "outstanding" rating in ground and weapons safety for the fourth year in a row, during the 53 WG's Annual Safety Inspection. Sgt George's philosophy of "safety first" ensured weapons safety on the ground and in flight.

WEAPONS SAFETY AWARD OF DISTINCTION

*Staff Sgt. David R. Ashley and Airman 1st Class Antonio L. Cooper
79th Fighter Squadron, 20th Fighter Wing
Shaw AFB, S.C.*



Sgt. Ashley and Airman Cooper were performing maintenance on an aircraft when they heard several loud popping noises, followed by the sight of several maintenance personnel evacuating the area. They ran to the left side of the aircraft and noticed several MJU-7 flares burning and bouncing around under the aircraft in the immediate area. Sgt. Ashley quickly grabbed a fire extinguisher, with the support of Airman Cooper, and attempted to extinguish the burning flares. Using the stream from the fire extinguisher, they moved



the burning flares away from the other aircraft. They continued this operation until the fire department arrived. Their quick thinking and regard for the safety of others possibly saved Air Force lives and valuable aircraft assets. Hats off to both of these safety-conscious individuals.

53 WG OUTSTANDING PME PERFORMERS



*Mr. George Foreman, Staff Sgt. Fred Gamblin,
Tech. Sgt. John Swindell, Mr. Dale T. Pierce*

OUTSTANDING PROGRAMS

*53rd Wing Operational Risk Management (ORM) Program/28th Test Squadron
ORM Implementation and Sustainment Plan.*

<http://wwwmil.wg3.eglin.af.mil/53TEG/28ts/28tsorm/default.htm>

*53rd Wing Ground Safety Program
<https://wwwmil.wg53.eglin.af.mil/spstf/se/seg.htm>*



Road V

*By Tech. Sgt. Frank Mahovich
Air Warfare Center Weapons Safety Manager
Nellis AFB, Nev.*

“Road rage” seems to be an epidemic plaguing our streets. I feel like every time I change the channel or turn a page in the newspaper, I run across a story about the latest “Mad Max” and his or her tale of destruction played out on our nation’s roadways. My article focuses on a particularly disturbing episode, which involved a woman indicted for leaving the scene of an accident and driving recklessly here in Nevada. The rationale behind such acts varies and no one solution will fit each scenario; however, being prepared to respond before something actually happens will go a long way to mitigate any potentially tragic consequences.

On the day of the incident, two 18-wheelers were traveling north on Interstate 15, just north of Jean, Nevada. One of the truck drivers attempted to pass the other. The driver was unable to gain enough speed to pass, and the two trucks traveled beside each other at approximately 50 mph. This caused traffic to back up behind them. Witnesses stated two cars passed the trucks on the right shoulder of the interstate while a motorcyclist attempted to pass the two trucks by driving **between** them. One of the motorists was the woman mentioned above. She pulled her vehicle directly in front of the trucks and repeatedly slammed on her brakes. One of the 18-wheeler drivers hit his brakes in reaction, which caused his trailer to swerve and hit the motorcyclist passing between the trucks. The motorcyclist was killed.

I asked myself why? What was the point? When the passing trucker knew he was not going to be able to pass the other truck, what stopped him from slowing down and pulling

back behind it? When there are two or more lanes, at least one of those lanes is supposed to be used for passing not driving abreast of another vehicle. This lack of consideration for fellow motorists set off a tragic chain of events. The two motorists who passed on the right shoulder were obviously violating the law, as was the motorcyclist who tried to pass by riding between the two trucks. What could cause these four individuals to throw common sense out the window as they deliberately disobeyed traffic rules, endangering their own lives and those of the motorists around them?

There are many different theories, causes or excuses for road rage. These range from stress to temporary insanity. Some believe that within the human psyche there is an urge to release our aggression on a nameless “other” when we feel it is justified. Maybe we are mad about something that happened at work or distressed about a situation at home which we feel that we have little or no control over. Our cars, however, represent an environment that we control — or at least think we do — and there is a whole highway full of unsuspecting people that we can demonstrate that to. This transference of anger, frustration or lack of control takes the form of cutting someone off or retaliating when someone cuts us off; tailgating or responding to a tailgater; taking someone’s parking space when you know they had been patiently waiting for the previous occupant to leave or reacting when that happens to you; blocking the road by driving slowly or taking risks to pass a slow driver; and having the need to make someone pay for their driving errors. This “I’ll show them...” attitude seems to turn into a blinding rage that



Warriors

causes us to defy the rules of the road, gravity and common sense. On top of this already potentially explosive situation, there has been a steady increase in our country's population and no corresponding increase in the infrastructure. The result is more people on the same number of roads. As the congestion builds, the patience spans decrease making the situation even more volatile. This is especially true for a technologically advanced society like ours, where people get impatient when the microwave takes a whole 30 seconds to heat something or the computer takes more than a minute to boot up. Given these factors, how can you protect yourself and keep from becoming the next road rage statistic?

First, realize that none of these road rage precursors occur in a vacuum. As the saying goes, "it takes two to tango." If just one of you decides to overlook the actions or mistakes of the other driver, then the situation can be defused in most cases. In the story above, if the truck driver had simply pulled back behind the other 18 wheeler, then there would not have been a traffic backup to trigger off the short fuses of the other drivers. If the two motorists and one motorcyclist had been more patient, then one of them would still be around to share his coping techniques. It can be annoying or frustrating when one driver does something rude or inconsiderate, it can be tragic when another driver responds in kind.

A good place to start is to recognize how you are contributing to the problem. I struggle with this just like a lot of you and I have been known to demonstrate offensive road rage maneuvers. Admitting that you are

capable of and preparing yourself for the potential of road rage is essential to your security. I have had the opportunity to deal with road rage on a daily basis since being stationed in Las Vegas. Maintaining my composure helps me defuse the situation. I count the cost of retaliating and have come to the realization that it is just not worth it. If someone feels the need to cut me off and pull in front of me, so be it. There is not a thing I can do to change what just happened. I can try and prevent it from happening to others by writing down the license plate number and reporting it to the authorities, but that is where my control ends as far as the offending person is concerned. I cannot take responsibility for or control what that person did to me. I can control how I choose to respond and whether or not that response will include remaining calm and obeying the traffic laws. For me these are the keys, staying composed and practicing basic defensive driving techniques. Both of these have definitely improved my chances of surviving the daily traffic gauntlet.

You may have a totally different technique and that is okay. Do whatever works for you. The main thing is to acknowledge that road rage has unfortunately become a part of our lives and we would be well advised to learn how to deal with it successfully. In parting, I would like to leave you with a challenge. The next time you find yourself on either end of the road rage highway, pause and think about the worst possible outcome of your actions or response. If your response ends up killing yourself or a family member or causing the death of another driver, is proving your point really worth that kind of cost? ■

A View from the

"Safety Guy"

*By Mr. Kevin R. Carr
Air Warfare Center Range Safety Division Chief
Nellis AFB, Nev.*

As the “Safety Guy” for the Nevada Test and Training Range (NTTR), I have a collection of “war stories” that are packed with “lessons learned” concerning the range safety business. Based on recent events at NTTR, I would like to share two of those stories to highlight good safety practices that should be used in any controlled range environment. As a bonus, this stuff can also be applied to your drive home today.

While the person in my first incident, Driver 1, may not win the Darwin Award, his story definitely illustrates the pitfalls of not being prepared to enter an active bombing range. This was Driver 1’s first experience on the range. His job was to perform a site survey. He entered the range with a radio, which he used to periodically contact the range control officer (RCO). After driving for two hours and not reaching his destination, he decided he was lost and tried to call the RCO; however, the radio’s battery was dead. A few minutes later, an A-10 flew over his location, and, eventually, a vehicle showed up and escorted him back to civilization.

Now for the rest of the story ... Driver 1 entered the range for the first time without a map, Global Positioning System (GPS) device, compass or co-worker who was familiar with the terrain. In the process of driving around for two hours, he had unknowingly left his approved area and had entered a range where an A-10 aircraft had been approved to drop live ordnance. The good news is that after Driver 1’s range time had expired, the RCO tried repeatedly to bring him up on the radio. After several attempts to contact Driver 1 failed, the RCO implemented emergency search procedures to stop all bombing operations and reasigned the A-10 to search for Driver 1. The search went fairly smoothly since Driver 1’s dust plume made him fairly easy to spot.

In case my story was so intriguing that you missed them, here are the lessons learned. First, never enter an active range without being familiar with the roads and topography. Even if you are familiar, it is always a good idea to also carry a range map and GPS device with you should a sticky

situation develop. Second, remember to bring a spare radio battery in the event that something unexpected happens and you are on the range longer than planned. As part of your preparation, you should also verify that your main radio battery is fully charged before you begin your trip. Third, an attentive RCO is a priceless commodity. Not staying on top of things can literally cost someone his or her life.

My second story involves the exploits of someone we will call Driver 2. Driver 2 and a buddy were driving high mobility military vehicles (HMMVs) on a range road. To keep up with his buddy without “eating his dust,” Driver 2 drove his HMMV on the grated side of the road and hit a piece of metal debris, which caused a rapid deflation of one of his tires. To provide an extra thrill to the E-ticket ride, Driver 2 was thrown from the vehicle, hit his head and sustained critical injuries that he did not survive.

While it is too late for Driver 2 to learn these lessons, I hope the rest of us will use his demise to avoid similar situations. First, always — no matter what kind of vehicle you are driving — wear your seat belt! Second, stick to the roads and slow down. Roads have been designated as driving surfaces and should be used as such. Also, realize the limitations of your vehicle and drive within those limits.

If you are reading this and saying, “This couldn’t happen to me. I don’t get involved with ranges,” think again. I do not need to be on the range to see folks not wearing their seat belts — I see it all the time on base. Every time I do, I know that the “superman syndrome” is alive and well. When I see military members driving their motorcycles on the road shoulders to get around traffic, I know that the potential just increased for another Class A off-duty fatality to hit the Air Force database. I hope the next time any one of you have to enter an unfamiliar environment or are thinking you can outrun your buddy, one of these “war stories” will come to mind. I hope it will cause you to stop, consider the price you might have to pay and rethink what you will do next. How many “war stories” have to be written before the lessons are truly learned? ■

SOME THINGS

Eighteen and a half years, fifteen different addresses, and encroaching gray hairs (where there is hair) qualify me as one of them ... you know ... a dinosaur — the open cockpit, leather jacket, scarf, typewriter and record album kind of dinosaur that we all used to make fun of when we were young airmen or second lieutenants. Somehow — despite our age — the dinosaurs still make it to work every day to teach the new and inexperienced airmen how to fly, fix jets and lead people. The faces and names of the dinosaurs change, but we are still out here watching as the Air Force itself changes. As we rapidly move from an air-only force to an air and space force, is there room for us dinosaurs — are we keeping up? Is there really anything we can teach today's young troops about operating today's Air Force safely and effectively?

While possible, it is highly unlikely that, somewhere in the Air Force, there is someone who has done the same job in exactly the same way for over 20 years, so I can understand why the value of us dinosaurs might be questioned this way. There are some tasks that we do the same way, especially with our older aircraft and equipment, but definitely not enough of them to justify the number of dinosaurs that exist. The Air Force has really made some major changes in the way it operates, functions and thinks. Today we are an Air Expeditionary Force. We fight day or night. We forward deploy worldwide at a moment's notice (sounds like the old SAC days). We conduct joint operations. We operate in space. We employ new safety tools like operational and personal risk management (ORM and PRM).

And we do most of this in cyberspace. As a result, we do things smarter, better, faster and — in some aspects — differently.

What is not that different though

is our bottom line. Our country continues to expect us to safely and effectively conduct combat and our growing non-combat missions in a fiscally responsible manner. This means creating a proficient and technologically advanced fighting force while minimizing the price tag for operations, equipment and personnel. This has been the driving force since day one and will continue to be one into the foreseeable future, which means us dinosaurs might not be so out of date after all. Let me talk, from my dinosaur's perspective, about a few other critical areas and you can make up your own mind about the value us dinosaurs bring to the Air Force as a whole.

Training. This is just one of those processes that was here in the beginning and is not going away any time soon. Everyone in the Air Force has been or is being trained. The way in which we train has definitely changed over the years. We employ simulators and computers in ways never dreamed of 50 years ago or even 50 weeks ago. Classrooms and lecturers have been replaced by computer-based training sessions with multimedia applications, but the end product — airmen who are able to competently and safely perform their jobs — has not really changed that much. We can simulate many things, but not the trained individuals and teams who have to operate expensive equipment in a demanding and often dangerous environment. We will always have to train to execute a mission ... how we perform that mission might change, but the end game remains the same: a wrench will be turned, a force will be deployed, a vehicle will be launched and a sortie will be flown.

Common Sense. A dinosaur with stars on his shoulders once stated that safe and effective operations are a result of "applied common sense." The basic principle of common sense does not change with the times. Because of this quality, common sense continues to be a critical element of our day-to-day and long-range decision-making and risk management processes. Fire burns whether you are sitting around an open fire (like we used to do on base) or dealing with the hot elements of the latest jet engine. The timeless quality of

NEVER CHANGE

common sense makes it perhaps our most valuable personal and organizational management tool. If something does not look or seem right, we need to apply some common sense, evaluate the risk and then act. We dinosaurs have more time on the job, which means we have had more opportunities to employ common sense and, therefore, are less likely to ask others to do things that violate this principle. We also understand and expect others to incorporate common sense into the decision-making process to get the job safely done.

The World. Yes, the world has changed and is changing every day. Some of us dinosaurs cannot name contemporary music titles and artists or the latest trends and fads, but we do know that one thing about the world has not changed — it is dangerous. Am I starting to sound like anyone's grandfather yet? The daily commute alone should verify this and scare every one of us. The highway is where the majority of our Air Force mishaps still occur. This is true even though we have made great progress in reducing the total per capita on- and off-duty ground mishaps since 1947. Our goal is zero defects, but the humanity of this world makes that too unrealistic. Every one of us participates in some form of activity that involves risk, whether it is driving or skydiving. Whatever we are doing, we always need to ask ourselves the same old dinosaur question, "Have I done everything I can to keep myself/my family/my troops from getting hurt in this activity?" The answer can be found in how often you wear your seat belt, if you make your kids wear bike helmets, if you have strong base safety programs and the list can go on and on. Yes, the world is changing, but the people living in it still get hurt. It is up to us, as a team, to adjust our safety strategies and minimize the hurts this world inflicts on us.

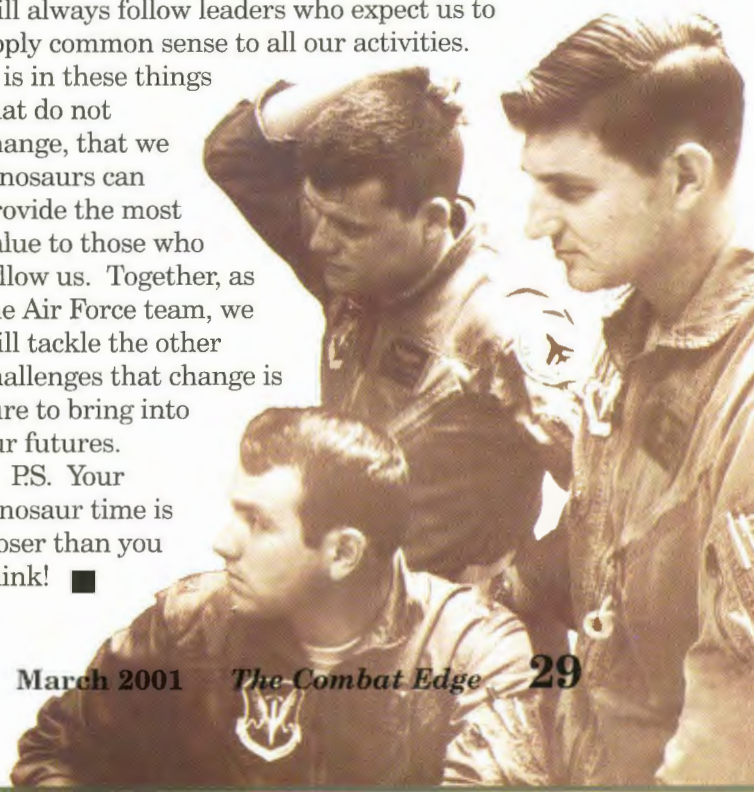
Leadership. Guess what? This one has not changed a bit. Safe operations require good leadership supported by sharp people. It is a given that conducting the day-to-day business of our Air Force has always and will always involve risk. It has always and will continue to be up to our leaders to minimize that risk as much as possible. In order to

minimize the risks, our leaders have to evaluate them. Again, the step of evaluating is the same, but the way of evaluating has changed to include some great tools, like ORM. It is "cool" (to use a dinosaur term) to watch an effective leader apply ORM. When leaders receive a task or mission, they analyze the risk, make decisions, mitigate the risk to its lowest level, make some more decisions and monitor the results. It is a pretty straightforward approach and ORM makes it work better. Safety processes are not just for our leadership to apply. Each one of us needs to apply them to every part of our daily lives. This might seem more difficult in today's Air Force because of all the things on everyone's plate, but — take it from a dinosaur — the reality is there has always been a lot on the Air Force's plate. It has been good Air Force leadership that has balanced that plate and allowed the mission to be done safely and effectively in a changing operational and world environment.

Some of us dinosaurs remember when the F-15 was brand new — now the F-22 is brand new. A really old dinosaur will remember when the shiny new F-4 showed up on the ramp. These are all indicators of how much the Air Force has changed in certain aspects and stayed the same in others. The plane names and shapes change, but the fact that they fly does not. There are other things that will never change either. We will always train and live in a risky world. We will always follow leaders who expect us to apply common sense to all our activities.

It is in these things that do not change, that we dinosaurs can provide the most value to those who follow us. Together, as the Air Force team, we will tackle the other challenges that change is sure to bring into our futures.

P.S. Your dinosaur time is closer than you think! ■





Laser Safety Dialogue

By Master Sgt. J.C. Bollman

*Air Warfare Center Range Safety Developmental Projects Officer
Nellis AFB, Nev.*

There is a critical lack of communication on the basics of laser safety throughout the Air Force. While the knowledge exists, it does so in pockets and does not necessarily get exchanged between organizations or commands. This article is meant to stimulate those exchanges by discussing laser weaponry, how it will be incorporated into the Air Force and what organizations are leading the way.

Some of the new laser systems include the Tactical High Energy Laser (THEL), the Airborne Laser (ABL) and the ZUES laser system. The THEL will be a ground-mobile system incorporating a chemical laser to combat low-flying threats. The ABL is a chemical oxygen iodine laser system designed to eliminate tactical ballistic missiles at altitudes above 40,000 feet. The ZUES laser system is a ground-mobile diode laser neutralization system, which uses a tagging laser and a neutralization laser to eliminate un-exploded ordnance.

If these systems sound high-tech, they are. Therefore, it stands to reason that everyone should be familiar with certain safety requirements. First, know what type of laser system you are dealing with. Second, identify the purpose and scope of the system. Third, identify the specific area where the system can be used. Fourth, coordinate with the bio-environmental engineers. Fifth, do an analysis of the target area. This step is most critical because a laser beam can reflect off materials and go well beyond the intended target and affect other critical functions. Finally, figure the requirements necessary for personal protective equipment.

According to our research, a few distinct organizations seem to be responsible for establishing safety standards for laser systems. These include the Walter Reed Army Institute of Research, the Naval Health Research Center Detachment at Brooks Air Force Base and the U.S. Air Force Research Laboratory Human Effectiveness Directorate/Optical Radiation Branch. All these organizations focus on the bio-effects of lasers. Specifically, they provide safety and protection information to operational units and acquisition offices. They also conduct research to advance the understanding of optical radiation effects on biological systems.

There are non-DoD organizations that work the laser issue as well. In the commercial sector, there is the Laser Institute of America, Rockwell Laser Industries and the Optical Society of America. Academically, there is the University of Waterloo, the University of Pennsylvania, the University of Missouri and the University of Illinois. On the federal front, there is the Food and Drug Administration and the Occupational Safety and Health Administration, which set laser standards and ensure regulatory compliance.

As you can see, there are many places to go to learn more about laser safety. As this knowledge base grows, it is critical that the information be shared throughout the laser community — especially with the troops in the field. This will help minimize mishap potential in the operational environment and is especially important on the modern day battlefield, which is becoming more dynamic as advanced technologies mature. Staying on the forefront of the laser safety edge through information exchanges is the key to successfully mastering this new frontier. ■



Ground Safety Stats

ACC Losses for FY 01

(1 Oct 00 - 31 Dec 00)

*Practice the
principles of
Risk
Management
both on and
off duty.*

Ground Mishap Fatalities

8 AF	
9 AF	
12 AF	
DRU	

Number of Ground Mishap/Dollar Losses

	Class A	Class B	Class C
8 AF	0	0	41/167,356
9 AF	1/125,000	0	32/80,054
12 AF	1/125,000	0	54/266,668
DRU	2/1,000,000	0	6/26,221
FY 01 Totals	4/1,250,000	0	130/697,569
FY 00 Totals (same period)	8/2,055,340	0	113/445,163

Class A - Fatality; 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 \$10,000 and \$200,000

