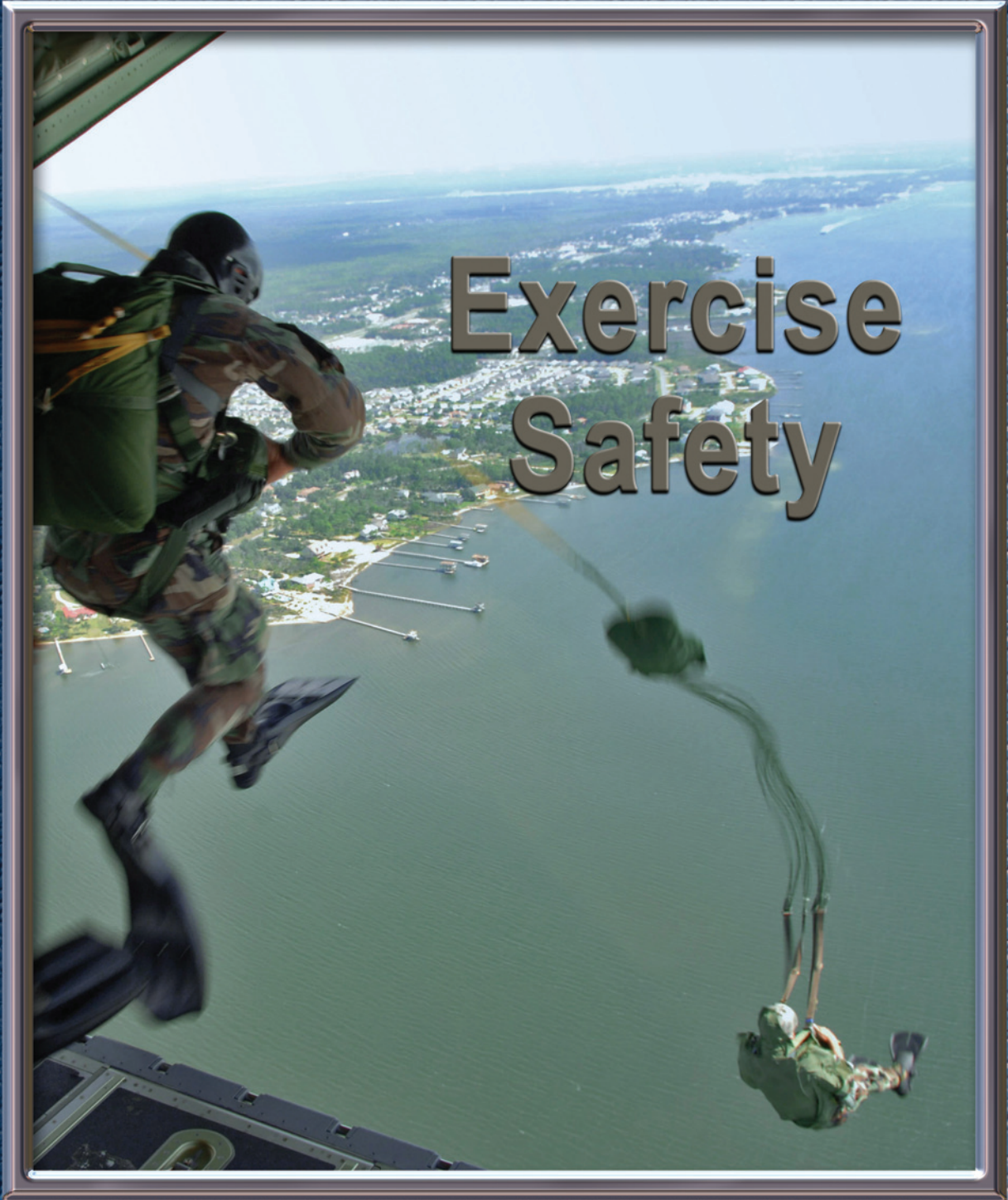


UNITED STATES AIR FORCE  
**FSM** MAR 2008  
FLYING SAFETY MAGAZINE





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USN Photo by PH2(AW) Richard J. Brunson  
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U.S. AIR FORCE

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**“Exercises – Always an Experience”**

Most aircrew look forward to exercise deployments. It’s when you get to put the skills from part task training together into complex scenarios against worthy adversaries and weapons systems. It’s quite an ego boost to see those skills put to the test and prove your competence. Unfortunately, exercises are also where numerous “call signs” originate, mostly from unplanned gross buffoonery. The exercise environment is very complex, sometimes unforgiving, and one that should be taken seriously. In-depth study and planning by participants are required to ensure the safety controls built into the rules of engagement and exercise architecture are effective. When you deploy to an exercise location, you’re operating in a new environment and, for the first couple of flights, you’re normally “being all you can be” just to stay in your assigned airspace. Pre-mission planning, route study, and knowledge of the SPINs will normally keep you out of trouble.

Exercises are also where troops tend to “push it up” once the day is done. The same level of planning and supervision that goes into the missions should go into ensuring everyone who goes out for a night on the town has a wingman and is accounted for and on his or her game the following morning. Many times I’ve seen schedule changes from aircrew being unfit to fly or a maintainer unable to make it out of bed after a night out. Or, even worse, people flying who aren’t responsible enough to admit they’re in no condition to do so. Millions of dollars are allocated for exercises annually to ensure we have the best-trained Airmen in the world. Let’s make sure these tax dollars aren’t going to waste and that everyone returns from the exercises safely, with their skills honed a little sharper from the experience. Fly safe!

Safety Sage

**GENERAL T. MICHAEL MOSELEY**  
Chief of Staff, USAF

**MAJ GEN WENDELL GRIFFIN**  
Chief of Safety, USAF

**COL WILLIAM "WILLIE" BRANDT**  
Chief, Aviation Safety Division  
DSN 246-0642

**GWENDOLYN DOOLEY**  
Chief, Media, Education and  
Force Development Division  
Editor-in-Chief  
DSN 246-4082

**LT COL THOMAS GREETAN**  
Deputy Chief, Media, Education  
and Force Development Division  
Associate Editor-in-Chief  
DSN 246-4110

**ROBERT M. BURNS**  
Managing Editor  
DSN 246-0806

**SHERYL OPEKA**  
Executive Assistant  
DSN 246-1983

**DAN HARMAN**  
Electronic Design Director  
DSN 246-0932

**DEPARTMENT OF THE AIR FORCE —  
THE CHIEF OF SAFETY, USAF**

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**E-Mail** — [afsc.semm@kirtland.af.mil](mailto:afsc.semm@kirtland.af.mil)  
**Address Changes** —  
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# Big City Lights!

**CAPT NICKLAUS WALKER**  
22 FS/SE  
Spangdahlem AB, GE

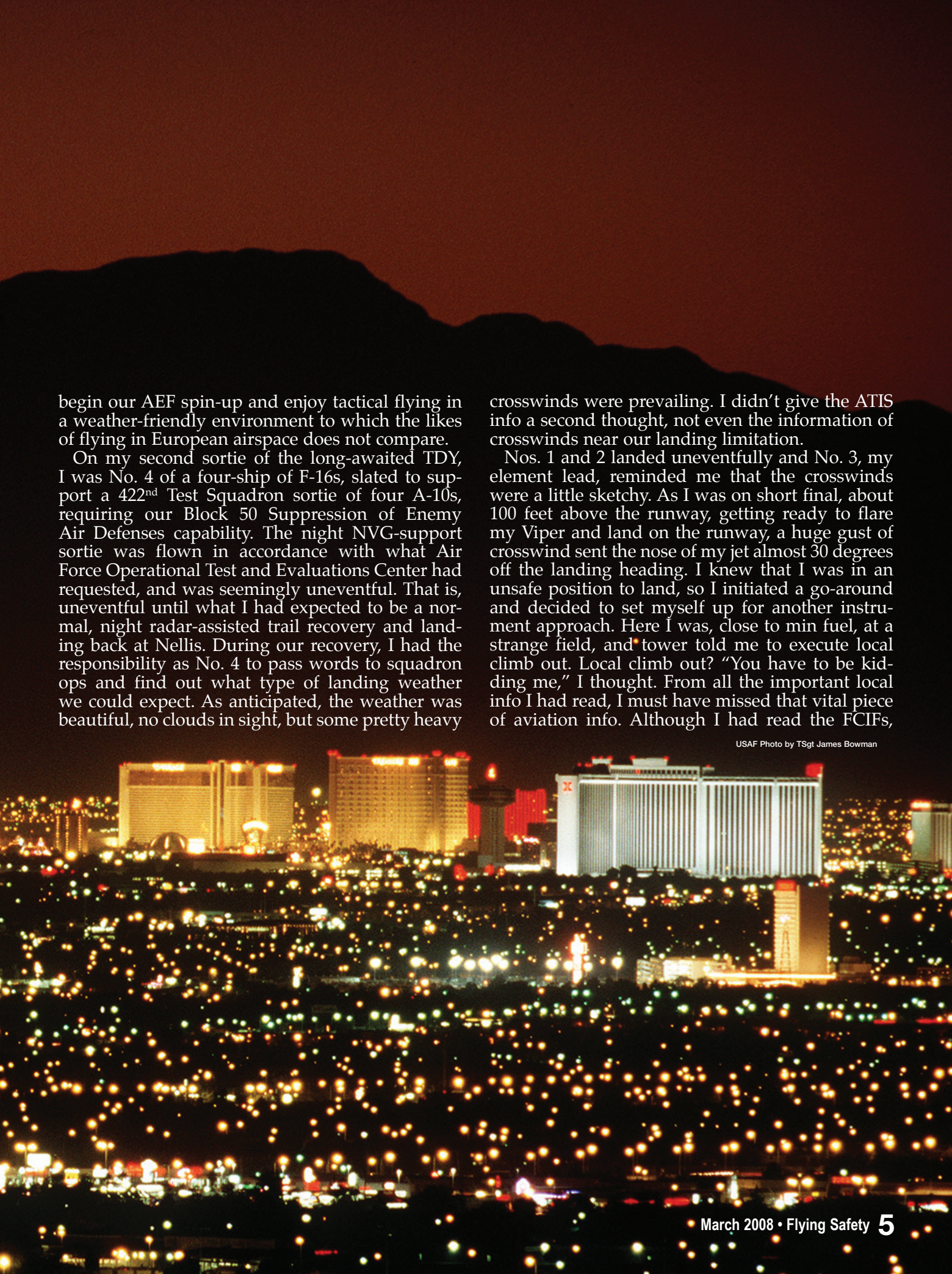
So “there I was,” no kidding, I had arrived. Or at least, I thought I had. Our squadron was TDY to no other than the “home of the fighter pilot,” Nellis AFB, Nev. Many fighter pilots, if not all, have dreamed of flying in and around Nellis, mainly because of its wide-open training ranges and almost perfect flying weather. It’s no wonder that only the best of the best get their weapons and tactics training at a base that is so fighter-centric and has an environment that permits syllabus completion and excellent, real-world training.

Our squadron was lucky enough to be at Nellis in preparation for our Air Expeditionary Force deployment, which would take place a very short three months later at an undisclosed location in the sandbox. Our squadron “Patch” (weapons and tactics officer) had stressed the point that all of us in the squadron, from the oldest, crustiest lieutenant

colonel to the youngest member of the LPA, were in essence, “small fish in a very big pond” when it came to our tactical prowess and knowledge, in comparison to the rest of the fighter brethren flying and fighting from the hallowed desert runway of Nellis. Therefore, all of us needed to be ready to fly the simplest parts of any sortie, from the local departures to the visual flight rules (VFRs) recoveries, in order to avoid buffoonery and to focus on the important part of each sortie — the tactical training we needed.

Being the professional aviators that we are, each of us completed the required reading of local area operations, flying crew information files, and the Nellis in-flight guide. After completing the assignment and signing off with our initials that we had indeed read and understood the rules and regulations of flying in the area, we all felt prepared to





begin our AEF spin-up and enjoy tactical flying in a weather-friendly environment to which the likes of flying in European airspace does not compare.

On my second sortie of the long-awaited TDY, I was No. 4 of a four-ship of F-16s, slated to support a 422<sup>nd</sup> Test Squadron sortie of four A-10s, requiring our Block 50 Suppression of Enemy Air Defenses capability. The night NVG-support sortie was flown in accordance with what Air Force Operational Test and Evaluations Center had requested, and was seemingly uneventful. That is, uneventful until what I had expected to be a normal, night radar-assisted trail recovery and landing back at Nellis. During our recovery, I had the responsibility as No. 4 to pass words to squadron ops and find out what type of landing weather we could expect. As anticipated, the weather was beautiful, no clouds in sight, but some pretty heavy

crosswinds were prevailing. I didn't give the ATIS info a second thought, not even the information of crosswinds near our landing limitation.

Nos. 1 and 2 landed uneventfully and No. 3, my element lead, reminded me that the crosswinds were a little sketchy. As I was on short final, about 100 feet above the runway, getting ready to flare my Viper and land on the runway, a huge gust of crosswind sent the nose of my jet almost 30 degrees off the landing heading. I knew that I was in an unsafe position to land, so I initiated a go-around and decided to set myself up for another instrument approach. Here I was, close to min fuel, at a strange field, and tower told me to execute local climb out. Local climb out? "You have to be kidding me," I thought. From all the important local info I had read, I must have missed that vital piece of aviation info. Although I had read the FCIFs,

USAF Photo by TSgt James Bowman





USAF Photo by SrA Brett K. Snow

IFG, and local area ops, I had obviously not paid close enough attention to the local IFR procedures, thinking that we would never need to know them, because of the almost constant VFR weather that exists at Nellis. Even though I knew that we would be flying at night, which meant IFR flight, I wrongfully omitted reading most of that information from the required readings.

Overwhelmed with having just executed a go-around at night, at a strange field, and NOT knowing the local climb out, time seemed to speed up for me in the cockpit, when things should have been very normal for a professional aviator, which I had perceived that I was. I queried tower for local climb out instructions as I pitched the jet around to an outside downwind position, not knowing where the high mountain ranges were at the moment — the same ones that had been noted in many local area briefs.

I was thankful that the tower was able to get me the instructions necessary for me to avoid running my jet into the side of a mountain, which now seemed to be replaced by complete darkness. For a fighter pilot, this course of events SHOULD NOT have been task-saturating, but for me, on this night, they were all that I could seem to handle. But my sortie wasn't over yet; I still needed to put the jet back on the ground. With the excitement that accompanies not knowing simple climb out instructions, combined with my taking the jet around after a huge gust of crosswind, I was too worried about what should be the simplest part of our jobs: landing the jet. I had decided to carry more airspeed on the second approach, because I was concerned with the still-present crosswinds. That was the wrong train of thought, leading to me carrying too much speed for the next landing attempt, which would have caused me to land too far down the runway.

I correctly decided to go around, but didn't have the gas to execute another instrument approach. I requested a night closed pattern to be able to land, without declaring emergency fuel in front of the rest of the test sortie aircraft, which by now were setting up for their approaches. Combined with everything that had gone wrong on the two previous approaches, accomplishing a maneuver that I hadn't seen since the B course was more than enough reason for concern. Fortunately my element lead was still on our in-flight victor frequency and demonstrated proficient and very welcomed mutual support in helping "talk me down" to a successful landing.

Most of the military flying community might not think this was a big deal, but for me, on that night, it was. The lessons learned that night reminded me of the need to practice critical elements of basic flying. I **should have** read the local operations regulations more carefully, known the local climb out for the field we would be flying out of for the next two months, and should have completed an often-forgotten in-flight check we all know and love: NMAILMAN. If I would have been disciplined enough to accomplish this very easy check, it would've saved me from being task-saturated during a moment in the cockpit when I didn't need to be. I **should not have** thought that I was "above" reading vital local IFR regulations, disregarded a time-proven technique of safe instrument flying (NMAILMAN), and should not have imagined that I had "arrived" because we were flying at the "home of the fighter pilot." Fighter pilots are disciplined, professional, and perfectionist aviators. That night, with Vegas' big city lights glaring in the distance, I wasn't any of those. 🛩️





# Code One

**CAPT KORY "FLEX" KLISMITH**  
51 OSS/OSC  
Osan AB, South Korea

USAF Photo by SSgt Elizabeth Concepcion

It was a dark and stormy night. Well, all right, it was dark. My squadron was in the final week of a Green Flag exercise at Nellis AFB. This was a night week for me, as I had flown day sorties for the first half of the exercise. My flight lead and I were fragged for a night CAS sortie, and we were fortunate enough to have drawn two lines with heavyweight live ordnance. It was going to be a great night, with some good training for not only us, but also for our Army brethren on the ground.

Our mission was straightforward, one we had done countless times before at home and a few times earlier during Green Flag. We were to depart Nellis and meet up with the JTACs out in the training area. To increase our training and sortie duration, our mission would be augmented by hitting the tanker just north of the play area, and then returning to work with the ground controllers.

Though we had both flown in the area a few times before and were comfortable with the local procedures, our preflight briefing was quite thorough, including the usual task of in-flight refueling and the rare opportunity to expend live ordnance. Our squadron had represented itself well thus far in the exercise, and we were determined not to be the flight to tarnish that image! After the brief, we dressed, got our tail numbers, and Life Support gave us a ride to the other side of the flight line. Everything was completely normal through takeoff.

It was on departure that I first felt the difference in the night's sortie. Coming to Nevada with its warmer temperatures, and carrying heavy ordnance, common sense and a quick glance at TOLD will tell you that the mighty A-10 was going to feel more like a pig than a "Hawg" that night. So the decrease in performance was expected. What was



different about that night and less expected was the turbulence! The few and scattered clouds that night were well above our planned altitudes en route, in the target area, and in the refueling track. The turbulence was the only weather issue that would prove to be an annoyance.

Upon entry into the training area, another flight from our squadron was already working with the ground party, as fragged. We held high to save gas and stay out of the way, as the other flight took its turn down the chute. The random encounters with turbulence were a constant nuisance, but manageable. The clock ticked away as we held high, and before we were able to get into the fight, it was time to meet our ARCT with the waiting KC-135.

With heavyweight bombs still on board, we recognized that refueling was going to be a little more challenging. As we approached the refueling track, about to make the descent down to our expected altitude of 15,000 feet, we got some news from the tanker crew that would make refueling even more interesting. Apparently, a previous flight experienced a lot of rough air at that altitude, so our only chance of getting on the boom was going to be up around FL200. OK, I know some of the Viper, Eagle, strategic airlifters, and bomber guys are already starting to laugh at me. I'd say the tanker types were laughing too, but they probably have a better idea of where this is going.

There was no calm air to be found that night, but at the higher altitude, the perturbations were a little more bearable. The change in venue and its respective loss in excess thrust on our part, however, did combine with the heavy weight and the rough air to make this venture a little more challenging. My flight lead was first. After a few tries, he was able to stabilize and get a decent drink of JP-8. Then it was my turn. As I moved in from pre-contact, the rough air and lack of performance began to try my patience. En route to the boom, I made one of the worst mistakes a receiver can make, especially in less-than-ideal conditions: I scared the boom operator on my first attempt. This meant that on successive attempts, both of us were frustrated and more cautious. I know for my part, I needed to back off and hang back in pre-contact a few potatoes to calm down. As I tried unsuccessfully two more times to get on the boom, I pulled my power back too far, and it took me what seemed like forever to get back into position. After these attempts, getting extremely frustrated and embarrassed, we heard the next set of fighters checking in for gas. Realizing just how long I had taken, not wanting to hold up the rest of the train, I finally called "knock it off" as I felt myself getting even more rushed into a potentially hazardous situation.

From there, we left the track and returned to the impact area. Of course I was disappointed in my bumpy, ham-fisted performance trying to get on

the boom, but I was at peace with my decision to cease my futile attempts at refueling. My flight lead agreed, and we left that discussion for the debrief, to concentrate on the rest of the mission. For the remainder of the sortie, the turbulence continued to be an annoyance, but didn't prevent us from getting our ordnance on target in concert with the guys on the ground. From our employment through to touchdown and shutdown, the sortie was completed without issue, except for some items we would talk about later on the ground.

Where am I going with this? Sounds like just another CAS sortie and a ham-fisted wingman having trouble getting some gas, right? As it seemed at the time, it was. With the sortie complete, my crew chief grabbed my helmet and saddle bags, and I lifted myself and my damaged ego out of the cockpit and proceeded with my postflight walkaround. Using my cranium lamp, I completed the walkaround and signed off the forms. Still "Code 1." Time for the debrief.

My flight lead and I rejoined in the Life Support truck and went back to the Ops building. I handed my 781 to the One Charlie behind the desk and turned to put my gear away, only to be stopped in my tracks by the Top-3. He asked me if I knew anything about a hole in my jet. Obviously the answer was no, I wasn't aware. I'd like to think I would've noticed something like that. Apparently when I had come back to the building, he was on the phone with MX. With a puzzled look on my face and a weird feeling in my stomach, I waited for him to hang up the phone. We talked over the details, and he informed me that I had left the aircraft with a crescent-shaped dent in the nose next to the refueling door, complete with a 4-inch gash in the sheet metal! I couldn't believe it. How could I have missed that? There was no way I had hit the boom that hard! Wrong. I did.

After getting the word, we went back out to the flight line. I just had to see for myself. Wow! Even in the dark, it was an obvious oversight on my part. How could I have missed it? I thought I did a pretty thorough postflight. Then I thought about it. I took a close look at how I do my walkaround after each flight. This is where I realized the gaping hole (pun intended) in my postflight. As I would climb down the ladder, I immediately started my inspection by going under the nose. Upon completion, my last "big picture" look at the jet on my way to sign the forms was from the left rear quarter. There was my problem.

I had a habit pattern for my postflight walkaround that was incomplete. Somewhere between my initial FTU training, with checklist in hand and where I was operationally, I had sacrificed a consistent, thorough inspection for a few minutes' head start on getting back for the debrief. In my community, as I'm sure it is





USAF Photo by SSgt Brian Ferguson

in many others, our IPs preach a lot about habit patterns. Most of this is in regard to preflight operations, AO admin, and weapons delivery. One habit pattern that I'm sure falls out of the crosscheck of more than a few folks is a thorough postflight. I hope my wounded pride will not have been in vain, and others can learn from my embarrassing oversight. Remember, not only is the sortie not over till the debrief is done, but the flight isn't over until you've verified the condition of the aircraft after the mission is complete!

Fortunately for me, our maintainers were quick to forgive and were able to have some fun at my expense. The sheet metal crew not only had the hole patched in minimal time and ready for the return flight to home station, but they also had drawn a huge band-aid on the lovely primer-colored patch! In the center, they labeled it "Flex-aid" in my honor! My director of operations, also having a sense of humor, made sure that I was piloting that jet for the flight home. It was all a fitting penance and served to cement my lesson learned. ✈️



# Train Like You Fight ... Safely



**MAJ ROBERT K. CARLSON**  
AFSOC/SEF  
Hurlburt Field, FL

As the global war on terror continues, ground and air forces strive to find training at home that is realistic to conditions they will face overseas. Joint training exercises with integrated application of live ordnance in close air support operations are extremely beneficial in preparing military members of all services for dynamic combat environments. Earlier this year, I was scheduled to participate on a mission of this type. I was to be on the crew of an AC-130 participating in a training mission at a U.S. Army live-fire range. I was on the first night's mission of this week-long exercise, where we would be conducting live-fire training with Army ground forces. The exercise entailed a robust urban scenario, complete with realistic building complexes, hundreds of soldiers, and a full opposing force of highly trained simulated enemy personnel.

Being an attached flyer at the time, I decided to hunt down mission information the Friday before this Monday mission. I had flown missions on this same range in the past, but it had been several years. Additionally, I did not want to be behind on the exercise when I showed for the flight Monday. I asked the Current Ops and Plans staff if I could see information on the mission, but I was informed that the ground forces were still developing the plan and would probably not have anything for us until Monday, mission packages were in the works, and crews would be thoroughly briefed during mission planning when they showed up for the flights. Additionally, a liaison officer from the Army base would be there Monday to answer crew questions and fly on the AC-130.

When I showed up for the flight Monday, I con-



***The mission that day was not only effective AC-130 live-fire training, but a great chance to apply our communications and risk-assessment skills.***



USAF Photo by TSgt Justin D. Pyle

ducted the standard check-in routine and attended the mission planning and briefing session. The tactical crew members were all handed mission packages. I began scanning the material contained in the folder: the Army regulation for the range, flight plan, frequencies, route and range charts, and the basic description of the scenario. What sparked my curiosity were the missing elements of this package: exact ground force composition, planned movements to and on the objective, administrative limits to both friendly and OPFOR personnel, target building locations, and annotated areas where we were allowed to and prohibited from expending ordnance. I hoped the missing information would be supplied in the formal brief or at least available when I asked the questions after the briefing. It was not.

After the briefing by the liaison officer, we asked very pertinent questions to safe live-fire operations. Much of the standard information briefed and planned to with in-flight guide checklists was not provided. Apparently, the information either did not flow from the Army planners hundreds of miles away, or the information simply did not exist. Furthermore, new information on apparent Army attack helicopters participating in the exercise was revealed matter-of-factly while trying to answer an unrelated question! At this point, the entire crew's confusion and frustration was obvious. Additionally, we found out that our LNO was not even from the ground force conducting the mission. He was from the base office that ran the range exercise scheduling and was not privy to the details of the tactical plan.





USAF Photo by Capt Denise Boyd

After 10 minutes of running into a brick wall when trying to get answers to our safety-driven questions, we let the LNO know that we would not shoot on the range unless we got these answers. Although the CAS live-fire objectives were a high priority for the ground force, the crew correctly calculated that the risk was too high with the current level of information on the exercise.

After many phone calls to the actual Army planners from our LNO, Plans office, and crew members, we received all the answers to our questions. Additionally, we got the word that the Army attack helicopters would not participate after all, alleviating the problem of not talking with other air assets flying on the range while expending live ordnance.

After conducting another risk assessment with the answers to our questions, we determined we possessed enough information to safely conduct the full profile of the exercise. We took off, performed about three hours of very effective and realistic live-fire training with the Army Special Forces personnel, and returned to base.

After landing and debriefing the mission, I was glad to have received peacetime training on such a realistic, robust scenario. Additionally, I was very happy the ground forces received the necessary live-fire CAS training they needed before deploying overseas. But then I thought of how close we were to not participating due to the lack of minimum information from a safety standpoint. Had we not received word before our needed step-time of the cancellation of the Army helicopters, it's likely we would have not fired our weapons and conducted the scenario "dry," limiting the effectiveness of the training of both the aircrew and Army personnel.

With the current high ops tempo for AC-130s in the global war on terror, combined with the dynamic, congested, joint environment we find overseas, it is commendable that we strive to "train like we fight." However, risk management must be considered when developing realistic training scenarios. Had we not conducted the live-fire training, there were four other opportunities during the latter days of the week. The risk of firing without the standard peacetime information we receive from ground forces would have been unacceptable. Any perceived or overt pressure to "get the job done" should never outweigh the risk involved. The mission that day was not only effective AC-130 live-fire training, but a great chance to apply our communications and risk-assessment skills.

There are many instances where the tempo of mission planning is not controlled by the air component, but rather by the ground forces conducting assaults. Their plan will be based on their timeline to their own leadership. It is up to the aircrew and their mission planners to stay away from the "passenger syndrome" on the ground. To avoid this, aircrew and air planners should proactively hunt down needed information, be active players in the full mission planning cycle, and continually evaluate hazards and risks involved. Furthermore, aircrew need to continually reassess their risk-management decisions as new information is received in dynamic training and combat environments. I'm very grateful to have robust training missions before deployments, and I'm glad that risk management is a top priority in the AC-130 community. Only by preserving our valuable ground/air personnel and air assets will we continue to successfully apply our combat power overseas. ✈️





# RIPPLES IN THE WATER

**CAPT CHRISTY L. ZAHN**  
60 AMW/SGPFT  
Travis AFB, CA

USN Photo by MCC Shawn P. Eklund

Imagine sitting by a pristine lake: the view is “perfect,” the temperature is outstanding, and the lake is like glass — not one ripple is visible. You think to yourself, “Man, this is perfect.” You grab a pebble and toss it into the lake. You watch in amazement as the initial pebble ripple builds ... one ring, two rings, and before you realize it, the whole lake is disturbed. The moment is lost, and the lake is no longer serene. This scenario is the same issue that happens when an accident or incident occurs.

Initially, the mission was moving along; everything seemed perfect. Then without warning, as we were unloading the crew bus, it was hit from behind, and the bus driver who was helping us unload was hit by the bus. “Plop,” the first ripple formed. I watched in horror as the tug started heading toward the aircraft. I jumped out of the way

and the tug hit the fire bottle and dragged it toward an engine before coming to a stop. Another ripple began to build. I ran over and checked on the bus driver who was lying on the ground with the bus over him. I asked him if he was OK. He responded, “My legs hurt terribly and so does my back.” A bigger ripple began to build. I told the driver not to move as I grabbed his radio to call for help. I then ran over and checked on the tug driver. He was in shock, although he said he was not injured. Another bigger ripple built. By then, the pro super showed up. I asked him to call for assistance. He sat in shock. Again, I repeated my request: “Listen, you need to call for medical assistance; the driver is hurt.” He finally called for medical assistance. The radio operator responded, and we finally heard sirens in the distance.





USAF Photo by 1st Lt. Nicole Langley

The ambulance crew packaged up the bus and the tug drivers. Another still larger ripple formed. Our mission was cancelled because we couldn't get the aircraft out of parking with the tug crashed in our parking spot. An additional ripple formed. The tug driver was released without injury, although obviously shaken. The bus driver, however, was not as lucky; he sustained injuries to his legs and neck. Another ripple cascaded outward. The driver was released to his home and was off work. Another larger ripple formed. His unit had to pick up his schedule while he recuperated. Another larger ripple formed. His family had to sustain a larger burden because of the accident, and the Air Force had to pay for medical care. An even larger ripple formed. It was identified that the tug had a malfunction, and the driver, while trying to stop the vehicle, put his foot through the rusty floor, and an additional larger ripple formed. Before you realize it, the pristine lake is no more, and an accident had occurred.

What if you had the potential to maintain the pristine lake? What if you could stop the pebble from dropping into the water? Would you do it?

What if I told you that you have the potential to stop that pebble before it hits the water? With the help of the Voluntary Protection Program, you have the potential and the responsibility to stop an incident or accident before the ripples ever start. Imagine with this new culture, if you could reduce the ripples by as little as 52 percent (based on DoD VPP CXFactsheet Web site). That's 52 percent more funds available to purchase that new equipment you need and want, or 52 percent more money to use toward educational TDYs. Maybe even 52 percent more man-hours to assist you to stop that ripple before it starts. Would you do it? What if you and your wingman could join together and increase that 52 percent exponentially? Even better yet, what if every military, civilian, and volunteer member of your unit, squadron, group, wing, MAJCOM and Air Force were working to stop those ripples? Just think what our outcome would be.

The Occupational Safety and Health Administration initially proved the old motto "We are better synergistically than we are alone" back in 1979, with the implementation of an experimental pro-



gram. In 1982, that experimental program became what is known as VPP. It was designed to recognize outstanding efforts of employers and employees who have achieved impeccable occupational safety and health programs and who have driven their injury and illness rates below the national average. It builds on a four-stage process: management leadership and employee involvement, worksite analysis, hazard prevention and control, and safety and health training.

The pinnacle of VPP is "star" status, which means that a company has developed and maintained an impeccable comprehensive safety and health program. As a result of this program, that company achieved an injury and illness rate at or below the national average. Such companies are recognized for their ability to control workplace hazards that may hinder their employees' performance. Furthermore, these companies will be re-evaluated by OSHA every three to five years to ensure they continue to be the pinnacle of the field.

"Merit" status is the foundation for star status. In order for a company to be recognized as merit status, they must have good safety and health management systems, although the systems need a bit of finessing to be judged "outstanding." Within the merit status, the companies have shown a desire to achieve star status and must do so within three years of achieving their merit status. While in this program, the companies will be evaluated by OSHA every 18 to 24 months.

The last program in VPP is called "star demonstration." In this program, the companies have demonstrated outstanding safety and health programs, although they are non-traditional and do not necessarily meet the star program status. However, if their programs are considered to be worthy of star status, then OSHA will consider approving changes to the star status. Companies operating under the star demonstration program must be evaluated by OSHA every 12 to 18 months.

The Department of Defense spends from \$10 billion to \$21 billion annually on injuries and illnesses. In this case, the pebble is a boulder and the lake is tumultuous. In FY06, the Air Force spent more than \$29 million in equipment damage and/or personal injury. Furthermore, the Air Force paid more than \$125 million for civilian workers compensation costs. In addition, the Air Force is losing tens of thousands of workdays toward our mission from preventable injuries and illnesses annually. The ripples continue.

Former Secretary of Defense Donald Rumsfeld said, "World-class organizations don't accept preventable accidents." Furthermore, he challenged us to reduce our mishaps by 75 percent by 2008. The Department of Defense encouraged all of the services to pursue VPP, and the Air Force embraced the culture of VPP in 2006. Since then, many bases have started their journey toward star status.

We stand shoulder to shoulder with more than 1,200 other companies that are involved in VPP. Many of the nation's top companies are using VPP to meet and exceed their goals of reducing injuries and illnesses on and off duty. Forty-seven of the Fortune 200 companies are among the VPP elite. These companies have seen some phenomenal reductions in their mishap numbers. In one year, three US Navy shipyards have seen a reduction in workers compensation costs by \$2 million collectively. Furthermore, more than 100 General Electric sites are VPP, and they have seen a cost savings of \$61.5 million per year. Since becoming a VPP site, Lockheed Martin has seen a reduction of their workers' compensation costs of more than 75 percent. That's a lot of ripples!

The moment before the pebble hits the water, you have the potential to reach out and grab it before it drops toward the bottom of the lake and starts the ripples. That moment is now! With a criterion that is performance-based, we can enhance our safety and health programs, and in turn, reduce the number of pebbles that are thrown into the lake. Within the VPP culture, our new culture, we have to invest in everyone's safety and health, both on and off duty. Could the tug in the mishap sequence have been stopped? Was it a known malfunction within that type of equipment? How could we have protected the driver? Did any of his co-workers/wingmen know that the floor was rusting out? These are all questions we need to ask as we look at the ripples in the lake. Everyone — from management, leadership, and employees — needs to mitigate all the potential hazards for the good of each other. Worksite analysis needs to be accomplished before engaging in a task. How many rocks can we prevent from dropping into the lake? After we have identified those hazards, how can we mitigate them? Was the tug in good working order? If not, we need to get it repaired before using it again. Another rock can be added to the pile. Lastly, by engaging in safety and health training, we can develop a stronger knowledge of this paradigm shift in culture and catch the rocks before they hit the water.

Shoulder to shoulder, hand in hand, we too can reduce our injury and illness rates on and off duty with the help of VPP. By amplifying VPP into programs such as Wingman, AFSO-21, ORM, CRM, MRM and AFOSH, and then applying VPP principles to our programs, thus enhancing our current culture, we have the opportunity to stand shoulder to shoulder with the top companies in the world. VPP allows the best, the elite organizations to save millions of dollars each year and millions of rocks each year from creating ripples. As we stand with those companies and embrace the culture of VPP, we can enjoy the pristine lake once more. It is with this hope that we embark on the journey of VPP and the road to continuous improvement. ☛



# Exercise Safety



***Working together***






*multiplies our combat skills.*





# My 41-Hour Bus Ride

CAPT WAYNE WATERS  
77 FS  
Shaw AFB, SC

Bus stop 



It started out in the planning stages as one of the best FAIP cross-countries seen to date (at Columbus at least). My buddy (to protect the innocent) and I planned a three-hop cross-country on Presidents Day weekend from Columbus AFB, Miss. to March ARB, Calif. We had training squares to be filled and thought it would be a great opportunity to visit somewhere different for a change. We also thought it would be nice to see family and friends in the process. Lots of flying and fun were the plan, at least we thought.

We briefed our plan to the DO the week before the cross-country. He thought it was a sound plan and told us his biggest concern was the possibility of us breaking far from our home base. We had predicted this was going to be an issue and called T-38 bases near our destinations to ensure they would be able to support us in the event we were to break. I'll never forget the last thing he said as we walked out of his office: "Don't screw this up." We, of course, assured him that we wouldn't, and we meant it. At least we meant we would not knowingly screw up anything within our control.

My buddy and I had more than a year of experience (300+ hours) as instructor pilots in the T-38, which, combined with UPT, was enough to get cocky and complacent, but not enough to keep us out of trouble. We had flown several times together and knew each other's abilities pretty well.

On the first day of the cross-country, my buddy, a squadron scheduler, had to finish some work in the squadron before departing, so I showed up at base ops to check the weather and NOTAMs, finalize our plan, and file the DD 175. The weather appeared to be clear along the route of flight, but the winds at Sheppard, our first stop, were going to be close to the crosswind limits. At the time of our arrival, they were forecasted to decrease below the maximum allowable limits. I quickly thought of a backup plan, which was to go to Tinker or Vance AFB, Okla. It was only a minor change to the flight plan, and I thought if we needed to file in-flight, it would be a piece of cake. It was a few hours before we were supposed to depart, so I thought I'd go with the original plan and watch the weather to make the final call. I called Tinker and Vance AFB just to make sure they could accept us, and they said it wouldn't be a problem since it was only a gas-and-go. As we approached step time, I checked the winds again to ensure they were trending as forecasted. They were, but not as fast as predicted. I decided to delay our takeoff 30 minutes just in case. As that time expired, I called the T-38 squadron supervisor at Sheppard to see what their status was. He told me he was stepping pilots out the door, so we decided to press with our original plan. I felt like we had dodged our first obstacle and knew we had a good backup plan in case the winds again went out of limits.

The first sortie to Sheppard was uneventful, except for my landing. The winds continued to decrease as predicted and even shifted around slightly to favor the landing runway. This ultimately led to a firm touchdown, because I wasn't paying attention to the winds. I was disappointed with myself for botching the landing in front of my bro in the back seat. He just laughed, and we taxied in to get our gas and grab a bite to eat. While we were eating, I decided to call Kirtland again, our second stop, to see if we would still have to go to the civilian side, since the ramp would be full. They politely told me that no one had cancelled, so we decided to simply taxi to the FBO on the other side after landing.

In the T-38, you always try to go to a military base with a start cart, because it's required to crank engines. However, most approved civilian fields and FBOs have their own start cart, or at least can borrow one from the airlines that frequent the airport. Once we arrived in Albuquerque, we shortly found out that the FBO's cart was broken. They weren't sure how long it would take to get another one. My buddy decided he would try to expedite the process of getting a start cart and pay for the fuel. I handed him the fuel card and filled out the forms for our second sortie.

Keep in mind that there was no published guidance on where to keep the forms in the T-38, especially once you're on the ground. Normally I'd put them back in the seat, but it was windy that day. I was afraid they would blow out of the cockpit with the canopy open. For some unknown reason, I decided to put the forms in the air scoop directly behind the nose wheel tire. This scoop aids the gear when using the alternate gear extension lever, and the forms fit perfectly there. The only problem with this is that you may forget and leave them there. If the forms are left in the nose wheel air scoop, they could fall out during taxi or potentially go down the intakes in flight. That's obviously not good.

I went inside to check on the status of the start cart. There was still no cart. I decided to go back out and speed things up by accomplishing the pre-flight. During my walkaround, I started to talk to a pilot from an aircraft nearby. This must have interrupted my habit pattern enough, because I forgot where I placed the forms. As soon the conversation ended, my buddy ran out to inform me that the FBO found a start cart. I finished my walkaround, jumped in the cockpit, and started to run my pre-start checks. My buddy and I flew enough with each other to feel confident that each had done his respective checks, so I simply said my checks were done in the front, and he responded that his were done in the back. In the meantime, the forms were still in the nose wheel air scoop.

We taxied out and flew an uneventful mission to March ARB. We even took the nickel-and-dime tour





USAF Photo by SrA Matthew C. Simpson

over the Grand Canyon. Once we landed and shut down, my buddy handed me the fuel card from his pocket and asked me to put it in the forms. When I reached for them, they weren't there. I initially thought my buddy was joking around. I told him to knock it off and give me the forms, but he said he thought I had them. I looked all over the cockpit for them. We even drove back to the runway to see if they fell out when we opened the canopy. They weren't there.

I tried to think back to the last time I had them. I knew I had filled out the forms in Albuquerque, so maybe I left them at the FBO. I decided to call back to see if I had left them there. They hadn't seen them. I then feared the worst. I envisioned every page of the forms scattering over the entire Albuquerque airport and shutting down airport traffic for at least half an hour. I called back to Kirtland to confirm my worst fear, and luckily they hadn't seen nor heard about any 781 forms.

I knew at this point I had to call back to Columbus. I did the honorable thing and confessed to losing the forms. I got grilled with questions and then remembered I had put them in the nose wheel air scoop. I considered us to be pretty lucky. What if we would have sucked the forms down the intake? I don't think my buddy would have been my buddy after that.

To make a long story short, the 781s were never found. The transient guy at March found a small piece of the K section lodged between the wing root and the intake, but I still don't know where the rest of the pages fell. We were lucky.

Our punishment was to return to Columbus on the next Greyhound bus, which took 41 hours. I begged the DO not to make my buddy ride the bus because it wasn't his fault. I lost. It was a painful trip, but I learned a few valuable lessons that weekend. Complacency can kill, and nothing beats good CRM. I also have never again forgotten the forms. ✈️



# We're Not Gonna Make It



## ANONYMOUS

USAF Photo by TSgt Erik Gudmundson

In the spring of 1999, I had been flying C-130s operationally for about 13 months. I had logged roughly 300 hours in the Herc, had completed my first overseas deployment a few months prior, and figured I had seen just about all there was. I was feeling pretty comfortable and very safe any time I flew. In my mind, I had become bulletproof. It's funny how life can bring you back to reality in one quick instant. Not in a "ha ha" funny way, but in a "punch you in the face" funny way. The experience I shared with 63 other souls in May 1999 wasn't funny at all.

Our crew was TDY to Pope AFB along with three other crews from our base to interfly with four Pope aircraft in an eight-ship C-130 formation. Each aircraft was stuffed to the gills with paratroopers, and we were going to drop them at Andrews AFB for their annual air show. Following the airdrop, we were to land at Andrews, load up the troopers, then fly back to Pope and land. The entire time we would be in formation. No big deal. I've flown in much bigger formations. It's part of the Herc mission; nothing for an experienced co-pilot like me to get too excited about.

Pope provided the mission commander and handled all coordination and briefings. Looking back on it all, the formation briefing was lacking. It didn't cover necessary "what if" scenarios — what do we do if No. 3 drops out, if the weather crumps, that kind of stuff. More importantly, it didn't cover the differences in the way our wings operated. Pope aircraft have a high-powered radar that enables them to lead a formation and conduct airdrops in IMC. Our aircraft didn't have that radar, so we never airdrop in IMC. Thus, our crews weren't proficient in actual IMC airdrops. This was never discussed in the briefing. To make matters worse, no crew from my base questioned it, either. The biggest topic that was disregarded in the briefing was the one thing that almost killed 64 people. If I knew then what I know now, I would have demanded a better briefing.

When C-130s take off in formation, the crew must ensure that they have at least 15 seconds of separation from the preceding aircraft. This 15 seconds of separation is procedure. We use techniques to ensure that we attain 15 seconds.

At my base, we always conducted "normal





USAF Photo by SSgt Jacob N. Bailey

method” formation takeoffs. During a normal method takeoff, all aircraft taxi onto the runway together and stop on the runway. Lead centers on the left half of the runway, No. 2 on the right half, and so on until all aircraft are stacked nicely on the runway, tail to nose, alternating left to right. The larger the formation, the further lead must taxi down the runway to accommodate all formation aircraft behind him. At my base, we had 12,000 feet of runway. That’s more than enough to stack eight aircraft on the runway for takeoff. So, at our base, we always conducted normal method formation takeoffs. When conducting this type of takeoff, it’s rather easy to ensure you have the mandatory 15 seconds of separation. The pilot flying takes a time-hack when the preceding aircraft rolls, and he doesn’t release brakes until 15 seconds have expired. Simple.

In May 1999, Pope only had about 7,000 feet of runway available. If all eight aircraft take the runway together, lead may or may not have enough

runway ahead of him for takeoff. So, Pope’s aircrew routinely conducted “feed-on method” takeoffs. During a feed-on takeoff, all aircraft hold short of the runway and once cleared for takeoff, lead centers himself on runway centerline and continues rolling. No. 2 rolls in behind lead and has a number of techniques to ensure he has at least 15 seconds of separation from lead. Then No. 3 does the same behind two, etc. This is a much more dynamic method. Crews must be versed and prepared for this method to ensure they attain 15 seconds of separation.

I had never seen a feed-on method takeoff. I have doubts whether any of the crews from our base had ever seen one, either. During the briefing, no crews from my base thought it was important enough to discuss. Following the briefing, I asked my aircraft commander how we were going to do the takeoff, and he said that I would learn during the takeoff. Who cares if I could back up the pilot or not? This guy was an instructor. Our navigator and flight



engineer were both evaluators. Our loadmasters were instructors and evaluators. Far be it from me to step up and break the error chain by asking if anyone else was as confused about the takeoff as I was. Besides, I was bulletproof. To make matters worse, we were tail-end Charlie in an eight-ship formation. During any C-130 formation takeoff, follower aircraft get knocked around to some extent as they climb through wake turbulence in search of smooth air. The further you are back in formation, the bumpier the ride.

All ground ops went as planned, except that No. 7 dropped out for maintenance problems, so we moved into the No. 7 spot. Once cleared for takeoff, things started happening much quicker than I was accustomed to. My thoughts went something like this: "The pilot seems to be rolling pretty fast. But hey, this is my first feed-on. I'm just learning. Maybe that's the way we always do them. This pilot doesn't like it when I speak up. It's better if I keep my mouth shut and just watch. That's what he told me to do. Besides, he won't do anything stupid. He's been doing this stuff for a long time now."

There's a joke that is sometimes passed around Herc aircrew: "What's the first thing to go through the co-pilot's mind during a C-130 crash? The navigator."

I made the "go" call at the appropriate speed. The pilot rotated on my call and began his climb into the churning air. But this time something was very different. It's normal for C-130s to experience un-commanded rolls as they climb through wake turbulence. It doesn't always happen, but it's not a big problem when it does happen. The fix is a quick application of opposite aileron and coordinated rudder, then either maneuver the aircraft to the side or climb above the turbulence. This is a common occurrence, and normally, it is easily alleviated. Not this time, however.

The aircraft rolled right, and continued rolling right. The pilot went full left aileron. I felt the rudder pedals move under my feet as the pilot tried for some semblance of coordinated flight. The visual picture outside was abnormal. I had never seen this sort of bank this close to the ground. A quick scan of my ADI showed us rolling through 60 degrees of bank and still rolling right. Airspeed was barely above 110 KIAS. "What's going on here? Why are we rolling?"

The pilot went both hands on the yoke and yelled, "Help me out here!" I slammed all four throttles up. They didn't move. The pilot had already pushed them as far as they would go before he went both hands on the yoke. My right hand smashed the yoke full left. It didn't move either. The pilot had it there already. What else can I do?

That's when it hit me ... WE'RE NOT GONNA MAKE IT ... today I die.

The next thing I knew, the pilot knocked my hands off the throttles and he pulled No. 1 and No. 2 to flight idle. The C-130 wing gets a large amount of lift from the two props that sit just in front of it. Removing the prop wash on the left and keeping it on the right has a similar effect as ailerons. I imagine he had less than two seconds to react. But it worked. We snapped out of the right bank and fell into a left bank. He slammed No. 1 & No. 2 to max, and we climbed slowly, wings level, about 60 degrees off heading from the rest of the formation. That is the day that I almost gave up my wings.

Here's what I know. We exceeded 60 degrees of bank, more like 70 degrees, possibly greater. I never saw more than 110 KIAS. We had 64 souls on board, and we were heavy. Our performance data says that we should have stalled. Maintainers were watching the takeoff from the ramp adjacent to the runway. They estimated that our right wing came within 35 feet of striking the ground. They also said that they went running to their trucks to call for crash rescue.

### So, what went wrong?

- 1) The pilot got way too close to No. 6 during takeoff. He later estimated that he got within 12 to 13 seconds of No. 6. I'd say it was around 10 to 11 seconds. Why did that happen? He was way too aggressive on his takeoff, and nobody on the crew knew what to look for to ensure we had 15 seconds, because there had been no prior coordination with the crew. Normally, it's a time-coordination between the pilot and navigator, with the co-pilot backing them up. None of that happened, and I had no idea what to look for. Thus, there was no way for me to back him up.
- 2) We later found out that we had a right quartering tail wind on takeoff. That kept the right wing wake turbulence in our face during takeoff. We did not do any wind analysis before takeoff.
- 3) We were No. 7 in the formation. Normally that's not a big concern, but when added to points 1 and 2, it can be a killer.

To this day, I am never relaxed during a formation takeoff. I always check the winds and ensure we have 15 or more seconds of separation. I teach my students to never let a pilot push them into passenger syndrome. If they don't understand something, demand an explanation before flight. Don't halo-effect a crew because they've been around much longer than you have. You could pay for their stupidity with your life. Had I simply demanded an explanation from my pilot about feed-on takeoffs, I could have yelled "Reject" during the takeoff once I realized that nobody had any idea how close we were to No. 6. CRM issues abounded on this mission, but that's for another discussion. ✈️



# When It Rains, It Pours; Don't Be Your Own Raincloud



**CAPT AARON BROWN**  
87 FTS  
Laughlin AFB, TX

I knew it was my turn to die. As I looked through the drizzle-covered canopies of the three other Vipers lined up with me at EOR, I could see my slant-tailed killers taxiing to join us. Secretly I hoped one of the Hornets would make a mistake during our 4v4 Air Combat Training mission, so I could be a hero for Mother Russia and launch every last one of my simulated “Alamo” and “Archer” missiles into their proud Navy formation. Alas, if the Blue Air does their job, a Red Air pilot should die quickly and often.

The weather was appropriately foreboding and while I mentally reviewed our briefed red air tactics, the most dreaded radio call of all interrupted my thoughts: “Viper flight, taxi back, you are weather cancelled.” My flight lead protested, but a PIREP for clouds from 1,000 to 30,000 feet was hardly conducive to safe air combat training. After Viper 1 let the Hornets know we were cancelled, I stared incredulously as the Navy jets took the runway and blasted off into the rainy haze. What did they hope to accomplish?

“Sorry, bud, it looks like we’re done,” I told the Air Force Academy cadet sitting in the backseat of my D-model F-16. He had some bad luck trying to get an incentive ride over the past few weeks of his “Operation Air Force” summer visit, and this was his last chance. Hearing the disappointment in his reply, I made my first mistake: straying from the acceptable wingman radio calls of “4” and “3, you’re on fire,” I asked if the Top-3 would let me take off single ship to at least get some air under the poor kid’s butt. I was a little surprised when after a short delay, the response was, “Go for it!” I waved off the de-arming crew and before I knew it, I was climbing through the clouds with a cadet in the back as giddy as a school girl.

My next task was to find some clear air, or the unlucky cadet was going to see 80 minutes of flawless Viper instrument flying. I tried calling the Hornets on their discrete frequency to see if they had found something workable. I suppose they had because they were too busy with their 2v2 to even answer me. Suddenly we burst into a bizarre bowl



***Combine bad weather, dissimilar aircraft, an incentive flyer, and a gear short circuit with my switch mistake and questionable decision to pull Gs in a cloudy cave, and you have a recipe for disaster.***



USAF Photo by TSgt Michael Ammons

of clear air in the MOA, a cloudy cave about five miles wide, with a floor at 22,000 feet and a ragged ceiling at 28,000. With such a tight squeeze and no discernable horizon, aerobatics were out of the question, but I could certainly “G” it up for the kid.

I told him to get ready for a warm up, and we pulled through an easy 4 G turn. I asked him if he was ready for more, which he affirmed enthusiastically, so I accelerated to about 420 knots at 26,000 feet, rolled to about 80 degrees of bank, and blended in the Gs for a level left turn. I planned to show him 6 Gs, but we never got there. As the jet decelerated and we approached 5 Gs, I felt an un-commanded right roll, followed by the sensation that the jet stood on its tail, and we pivoted violently right with a jarring shudder. Next, I found myself bouncing off the side of the cockpit and then hanging in my seat in an inverted spin. Not good.

Luckily, only a month before, I had attended the F-16 Spin Recovery training at Edwards AFB, Calif. where I intentionally sent the jet out of control and recovered more than 10 times in one flight. The

only difference now was that I had less altitude, no horizon, and a cadet instead of a highly experienced test pilot in my back seat. The first step for recovery is easy: CONTROLS, RELEASE. I did the next one without thinking: THROTTLE, IDLE. Now we waited.

I never had to perform the rest of the critical checklist. It seemed like forever, but in a matter of seconds, thousands of lines of computer code helped the flight control surfaces dampen the yaw and convince the nose of the bucking bronco to dip 60 degrees down. Seizing the opportunity and using the HUD for my attitude reference, I pulled the nose through until we were pointed straight down. As we accelerated through 200 knots, I threw the throttle to MAX and pulled. As we reached wing level in the weather at 20,000 feet, the first thing I noticed was a loud whooping sound from the back seat. “WHOO! THAT WAS AWESOME!”

“No,” I replied, “That was *not* awesome.” As I got back to a safe airspeed and pointed home, the jet seemed to be handling normally. The cadet promised





***I went from hero to zero with the flip of a switch.***

me he hadn't bumped the stick to cause the un-commanded right roll. When I declared the emergency for departure from controlled flight, I think the cadet finally realized the gravity of our situation!

I wasn't far from home, but I had a lot of altitude to lose and was very heavy with 8,300 pounds of fuel remaining. To help burn gas and descend, I elected to lower my gear, passing through about 14,000 feet. Dumbfounded, I watched as I got *zero* green lights and an intermittent red light in the gear handle. Not surprisingly, my first call to the SOF was something like, "You're not going to believe this."

My problem was this: I had an airplane I needed to land ASAP because I had no idea why it stopped flying or when it might happen again, but as far as cockpit indications go, I had no gear to land on! As with most gear problems, I needed a chase ship, but I was the only F-16 dumb enough to be flying.

The SOF and I started through the gear checklists as I set up for an ILS. I thought I felt the drag of the gear, but I wasn't sure of anything anymore. Meanwhile, the SOF set up a "Conference Hotel" where he phoned Lockheed engineers who were always on call to help troubleshoot airborne F-16

problems. As I broke out of the weather and passed the tower on a low approach, the SOF confirmed that my gear was down but there was no way to be certain it was locked (gear not locked tends to collapse on landing).

The SOF recalled the only fighters airborne, and as the rest of his four-ship landed, the Hornet lead rejoined on me, clearly annoyed in his radio calls that we had cut his training short. So there I was, orbiting at 1,000 feet above the ground in light rain, in a jet that might depart at any moment, with a dissimilar chase ship inspecting my landing gear from mere feet away. Understandably, I had to tell the hyperventilating cadet to go oxygen-100 percent and "cold mic."

Boring details aside, after 70 minutes airborne, the Lockheed engineers were certain from the evidence at hand that there was simply an electrical short in the gear sensing system and that I could safely land. Needless to say, as I set the jet down as gently as I could, I was ready to go around with afterburner at the first sign of the gear giving way. We stopped straight ahead uneventfully on the wet runway and waited for the emergency vehicles.





USAF Photo by MSgt Paul Holcomb

Now that we were safe, my mind instantly started replaying the whole sortie, trying to make sense of what just happened. Why did the jet go out of control? Was the gear problem related or just bad luck? Back in maintenance debrief, I was starting to feel proud of myself. I had just handled a multiple system EP in poor weather and saved an Air Force jet. Then the OGV flew in, assaulting me with questions! Was the pitot heat on? Did you see any icing? Did the cadet bump the stick? Was the fuel balanced? Where was the CAT switch?

Time froze. The CAT switch? Where *was* the CAT switch? I thought back to the only time I would have checked it: on my initial sweep of all the switches during ground ops. There was a black hole where the memory should have been. When I came to, the OGV was already radioing for maintenance to check the CAT switch. I waited for the reply like a defendant waiting for his sentence.

For those non-Viper pilots wondering what the CAT switch is, let me explain. The F-16 was originally designed to be a lightweight and nimble air-to-air machine. As the Air Force added external fuel tanks, targeting pods, and bombs, the airplane

obviously didn't handle as well. In fact, at certain gross weights and configurations, the engineers found that if they didn't limit the AOA to 15 degrees, the jet had a tendency to depart flight. Enter the CAT switch — CAT 1 = full-up Viper, CAT 3 = 15 AOA limit. It's a simple set-and-forget toggle switch.

Our configuration that day was clean with two wing fuel tanks. This is technically a CAT 1 configuration, although in an air-to-ground mission, we would still set CAT 3 for realistic training. But this had been an air-to-air sortie, so our flight lead had briefed us to set CAT 1 to get the best performance. At the step desk, I found out I would be getting the D-model with the cadet. While the single seat C-model is barely CAT 1 with two tanks, it just so happens that the D-model is not. Academically I knew this, but on that day, whether due to complacency or distraction, I hadn't checked the switch. It was now up to where the previous pilot had left it.

The verdict was in. "The switch is in CAT 1." My stomach dropped, and I instantly fell into the downward spiral of disappointment and self-loathing every fighter pilot feels when he realizes *he* screwed up. I went from hero to zero with the flip of a switch.

In the days that followed, there was much speculation and arguing over whether my jet should have departed, even in CAT 1. Even if the analysis from the engineers a week later hadn't damned me, I had already learned my lesson. When I stood up to brief my buffoonery at the next pilot safety meeting, I had this advice.

First, there is no good excuse for missing a switch, yet it happens all the time. I have to work at identifying my own areas of complacency or moments of distraction, and if I catch it, I know I need to recheck what I was doing and be extra vigilant.

Next, we have all heard that almost all accidents are culmination of factors that by themselves are easily handled, but together create a catastrophic event. Combine bad weather, dissimilar aircraft, an incentive flyer, and a gear short circuit with my switch mistake and questionable decision to pull Gs in a cloudy cave, and you have a recipe for disaster. What would have been the tipping point to a class A mishap?

Lastly, I learned to listen to my instincts. There were several moments where my subconscious mind had realized I had rushed my ground ops, that the weather was too bad, and that the situation just didn't seem right. We all have a built-in ORM calculator, and the challenge becomes, "How much is too much, and when do you listen?" I wish I had taxied back with the four-ship that day. I feel very lucky that you're reading this article and not the newspaper headline, "Air Force Cadet Ejects from F-16, Eaten on Landing by Alaskan Grizzly." 🐻





# How Low Did You Go?

**LT COL GREGG ALLRED**  
72 ABW/SEF  
Tinker AFB, OK

Nearly 20 years ago, I learned some very valuable lessons that are part of the reason that I am still alive and flying today. However, there was much more that could have been learned at the time, and it could have been learned by more than just the six pilots in the flight. Our safety culture has come a long way since then — or has it?

The story began benignly enough. I was in advanced jet training, flying the TA-4J Skyhawk, and we were deployed to NAF El Centro, Calif. for our bombing training phase. Our welcome to California was a beautiful, sunny day and a magnitude 4.0 earthquake. The deployment began well, but the normally good weather didn't hold. Following a brief for a four-plane bombing mission, we reconsulted the official weather version by walking outside and looking north toward the target area. The only problem was that we couldn't see that far, due to the restricted visibility that obscured the horizon and made determining the ceilings difficult.

A check with the weather shop revealed that the weather was legally VFR, but not much else. The flight lead was an instructor pilot, and there was a second IP riding in the back seat of No. 4. There was pressure to complete the Xs, and they determined that we should give it a try. The weather didn't look that good to me, but what did I know? The ominous music should have been building in the background at this point. It wasn't unsafe to take off, but we needed a good plan to ensure safe execution of the flight, and definitely more than just "We'll take off and give it a try."

We got airborne, successfully rendezvoused and began feeling our way to the target. We managed to stumble across the run-in line and turned for the target. When we reached the bull's-eye, lead broke up into the high dive pattern. I was No. 3, and by the time I broke, lead had already disappeared into what most people would probably characterize as clouds. However, since we were in a VFR bombing pattern, we'll just refer to it as further reduced vis-





USN Photo by PH2 Bryan K. Logan

ibility. As I reached the abeam position, I couldn't see lead or the target, but I still was visual on No. 2, and trusted him to lead me to the roll-in. As I turned for the roll-in, I looked inside and set the appropriate switches so that I could unleash a fearsome 25-pound blue bomb. A mistake here could cost me a beer for not getting a bomb off on the first pass. However, focusing on setting up the weapons system almost cost me a lot more. As I looked back outside, something was amiss. I was looking up at a lot of sagebrush. It didn't take long to realize that this wasn't good. A max performance roll, which in the A-4 doesn't take long, followed by a 6 G pull, and I was headed back up for the roll-in. At about that time, the lead IP called "off safe, off target rendezvous due to visibility." Good idea, I thought, followed by, "I hope the IP in No. 4 didn't see me."

I now know that I had just experienced a classic somatogravic illusion. Normally in a day, visual bombing pattern, seeing the horizon in the periph-

eral vision was all it took to remain oriented while focusing on setting up the switches. However, with no horizon, no peripheral cues, and no scan of the ADI, orientation was left up to the vestibular system, which, safe to say, isn't adapted for the task.

The debrief was fairly uneventful and seemed to gloss over the poor decision making until the lead said, "That's about it; any questions?" As a student worried about busting the flight, I wasn't about to say anything, although clearly there were some learning points that hadn't been brought out. However, the IP from the back seat of No. 4 was well aware that all had not gone well. He looked at me with large eyes and said, "How low did you go?" I hadn't bothered to look at the radar altimeter, as my clear view of the sage brush said that I was far too low and my visual scan was fixated on terrain avoidance. I waited for my "down," but little more was said. The debrief ended shortly thereafter, and we wandered off in search of food. It wasn't until later that I realized the lead IP was every bit as worried as I was about getting in trouble for his actions.

At the time, I was content not to have busted the flight, but we really should have brought out more learning points. Why didn't we brief to overfly the target at pattern altitude to check the ceiling and visibility? It would have been obvious before we got that high that the pattern was unworkable. When did No. 4 realize my problem, and why didn't he say anything? When things are different from normal, keep your priorities straight. Bombs on target first pass don't count if the bombs are still connected to your airplane.

Fast-forward 20 years and think about how the debrief would have gone in your squadron today. Is the command climate such that junior personnel feel free to speak up? Would the senior members of the flight bring out their mistakes? Would everybody have realized that since they had narrowly avoided crashing a jet and killing a pilot, they really should talk to Safety and release a high accident-potential message, so that the rest of the squadron and the Air Force could learn from their mistakes and not repeat them? Would the DO and CC have appreciated the flight's candor, or would they have hammered everybody? Since the CC and DO are probably too busy attending meetings to regularly read *FSM*, hand them a copy of this article and ask them at the next Commander's Call. According to mishap boards, human factors are causal in 63 percent of mishaps. Does everybody in the squadron read all applicable HAPs, HATRs, and mishap messages to learn from others? If we want to kill fewer people and meet the SecDef's goal of a 75 percent reduction in mishaps, every squadron's safety culture needs to support sharing your mistakes and learning from others. Does yours? ☛



## AVIATION



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



SSgt Duncan McFarlane and MSgt Nick E. Cunningham  
173rd Fighter Wing  
Kingsley Field, Oregon

The Aviation Well Done Award is presented to Staff Sgt. Duncan McFarlane and Master Sgt. Nick E. Cunningham, crew chiefs, 173rd Fighter Wing, Kingsley Field Air National Guard Base, Ore., in recognition of their exceptional attention to detail and decisive action. On March 22, 2007, while supporting the launch of an F15-C, Sgt. McFarlane and Sgt. Cunningham responded to and contained a catastrophic failure of the jet fuel starter and resultant fire on the aircraft. After a normal engine start, as the jet fuel starter disengaged, the turbine violently failed, causing molten blade fragments to scatter underneath the aircraft. They immediately instructed the pilot to delay engine shutdown, giving them time to accomplish a fire check and to install the engine fuel drain tubes, to prevent ignition of purged fuel as it expelled to the ground. After the engine shutdown and pilot egress, they observed flames and promptly extinguished the remaining fire. Sgt. McFarlane's and Sgt. Cunningham's coolness under pressure, fluid teamwork, and decisive response prevented the fire from spreading, minimizing aircraft and collateral damage. Their actions ultimately resulted in minimal mission impact. Sgt. McFarlane's and Sgt. Cunningham's actions reflect great credit upon themselves and the United States Air Force. ➤





**FY08 Aircraft Flight Mishaps  
(Oct 07 - Jan 08)**

**3 Class A Aircraft Flight Mishaps  
0 Fatalities  
3 Aircraft Destroyed**

**FY07 Aircraft Flight Mishaps  
(Oct 06 - Jan 07)**

**7 Class A Aircraft Flight Mishaps  
1 Fatality  
2 Aircraft Destroyed**

**Flight Rate Producing**

- 01 Nov** F-22A No. 2 engine FOD discovered during postflight walkaround
- 02 Nov** F-15C → Crashed on training mission; pilot suffered minor injuries
- 28 Nov** T-6A → Dual T-6 midair collision
- 29 Nov** HH-60G Hard landing during brownout; damaged FLIR, WX radome

**UAS**

- 29 Nov** MQ-1B → Departure from controlled flight; destroyed on impact; cause unknown
- 17 Dec** MQ-1B → Lost Link; destroyed on impact; cause undetermined

- A Class "A" aircraft mishap is defined as one where there is loss of life, injury resulting in permanent total disability, destruction of an AF aircraft, and/or property damage/loss exceeding \$1 million.
- These Class A mishap descriptions have been sanitized to protect privilege.
- Unless otherwise stated, all crew members successfully ejected/egressed from their aircraft.
- Reflects all fatalities associated with USAF Aviation category mishaps.
- "→" Denotes a destroyed aircraft.
- Air Force safety statistics may be viewed at the following Web address: [http://afsafety.af.mil/stats/f\\_stats.asp](http://afsafety.af.mil/stats/f_stats.asp)
- **If a mishap is not a destroyed aircraft or fatality, it is only listed after the investigation has been finalized. (As of 11 January 08) →**



Coming in April 08

# DEPLOYED SAFETY

