

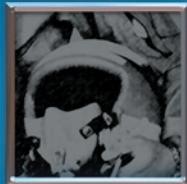


# Where the Rubber



# Meets the Runway





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Photo Illustration by Dan Harman





## INFORMATION FOR MAINTAINERS OR THOSE INTERESTED IN MAINTENANCE INFORMATION

Did you know that HQ AF/ILMM, the owners of US Air Force aircraft maintenance, has a web site dedicated to aircraft maintenance issues? If not, you should. Every maintainer, especially supervisors, should be visiting the ILMM web site (<http://il-u.hq.af.mil/ilm/ilmm/acmaint/>) for the latest information from aircraft maintenance headquarters about what is going on in the aircraft maintenance career fields. There are links to CFETPs, UT&W schedules, KEEP Program, and the A&P certification program, to name a few. You can also contact the Maintenance Chief's Advisory Board (MCAB), the Maintenance Training Advisory Group (MATAG), and the headquarters staff directly through the e-mail links.

We, as maintainers, need to be able to access this vital information in order to pass it on to the troops. AF/ILMM places important issues on the web site to help keep the maintenance community abreast of future changes, and ensure everyone is up to date on the latest maintenance news. If you need more information or have a suggestion for the web site, please contact HQ AF/ILMM via the web site.



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HQ AFSC Photo by MSgt Michael Featherston

## SAFETY Q&A WITH SENIOR LEADERSHIP

**MR. GREG ALSTON, HQ AFSC/CD**

*Editor's note: In October 2003, Mr. Greg Alston became the Air Force Deputy Chief of Safety and the Executive Director of the HQ Air Force Safety Center. He is a retired Air Force Colonel and a command pilot, with more than 2000 flying hours in the F-4, F-16, AT-38 and F-117A. He has been working in safety almost continuously since July 1991, when he received an assignment to the Pentagon as the Chief of Flight Safety Programs. In 1995 Mr. Alston became 49th Fighter Wing Chief of Safety at Holloman AFB, N.M., where his unit won the National Safety Council Award of Honor*

*and the U.S. Air Force Explosives Safety Award for overall safety programs. He served two years as Deputy Division Chief for Plans, Programs and Policies at the Air Force Safety Center and two years as Air Combat Command Director of Safety at Langley AFB, Va. At ACC, his efforts led to record reductions in flight and ground mishap rates and his office won the Secretary of the Air Force's Mr. Will L. Tubbs award for the best ground safety program. Before his current assignment, he was the Deputy Chief of Safety and Chief of the Safety Issues Division at the Pentagon.*

## **What is your safety-related background?**

I've been in safety since 1991, when I got an assignment to the Pentagon as the Chief of Flight Safety Programs. We were just standing up Safety under the Chief of Staff—it used to be under the IG. I've been in Safety ever since, except for one year as a squadron commander. I left the Pentagon in January 1995, to be the Chief of Safety at Holloman AFB, N.M. In July 1997, I came up here, to work in SEP—Plans, Policy and Programs. Did that for two years, and then was requested to go be the Chief of Safety for ACC in July 1999. In July 2001, I went to be the Deputy Chief of Safety at the Pentagon. Then in October 2003, I came here. I've been teaching safety for at least 10 years, for Embry-Riddle Aeronautical University. I'm a member of their CASE Advisory Council—Center for Aerospace Safety Education. I wrote a textbook on safety, called "How Safe Is Safe Enough?" It's used in Australia and the Pacific Rim, and it's being introduced to the U.S. academic field. I've worked directly for the last six Air Force Chiefs of Safety—Generals Cole, Godsey, Gideon, Peppe, Hess and now Maj Gen McFann.

## **As you serve as the Air Force Deputy Chief of Safety, what are your priorities for improving our safety efforts?**

My priority is to focus on risk. On my first day here, I said, "I want to make the Safety Center the center of gravity for mishap prevention." Part of this is that for the last couple of years, we've been trying to change our culture from safety data collection to one of a mishap-prevention culture. To do that, we've got to focus on risk and prevent the mishap before it happens. Part of that is standing up the AFOSC—the Air Force Operational Safety Council. We just had our second meeting. General Moseley, the Air Force Vice Chief of Staff, chairs it. This is helping to change our culture to mishap prevention, because if the top buys into it, then everyone will follow. So here we have the corporate top of the Air Force talking safety, talking risk, and I think that's going to help focus on risk management. To change the culture takes five years. We're engineering this culture. It could take five years to where people think daily, automatically, about "Where's the risk and what can I do about it?" The one thing about risk we have to remember is we're not looking for the minimum amount of risk—we're looking for the right amount of risk. Because there's risk in every activity—we have to co-exist with it. We can't eliminate it.

## **What do you believe the Air Force can do to improve flight safety?**

There are a couple of things. All the easy things have been done, so nothing is going to be easy. What we're up against right now is ourselves—our humanness. Human factors are causing our mis-

haps. We actually have a very good flight safety record, but we have a long way to go. To do that, we have to focus on human factors. Part of that is leadership. Humans really make all the rules, so it's what kind of equipment we acquire, what we design, how we maintain that equipment, how we train to fly it, how we operate it, how we supervise. Humans are involved at every stage, so when a part breaks it's not a maintenance mishap, necessarily—humans designed the part, we maintain it—so we have to really focus on our approach to risk and identify risk through leadership. Don't accept unnecessary risk is the bottom line. We had our best year ever in flight safety last year. Part of that is because of this effort to change the culture. This was well before Secretary Rumsfeld's 50 percent challenge—we're already doing it. Creating the AFOSC, working on ORM, getting leadership involved, and it's paying off this year.

## **What about reducing vehicle mishaps?**

We're already doing a lot of good things. We're sharing with industry. The Motorcycle Safety Foundation has some great ideas, and we're embracing those. Insurance companies have really good ideas on how to prevent accidents, so we're embracing those. We've already redesigned training for our young folks—initial training and follow-on training. Because our biggest risk is in 18-24-year-olds. The other thing I'd like to do is to train our mid-grade NCOs on how to mentor an 18-year-old. What does an 18-year-old need? The squadron commander is not going to be his role model—his or her role model will be the staff sergeant or the tech sergeant. The person they work with, who's providing that one-on-one leadership daily. If we can get that into Airman Leadership School, teaching those folks how to mentor an 18-year-old to stay alive. What do they need? Those are the ones who are going to work all day Friday, drive all Friday night to get to the beach, party all weekend and drive back Sunday night so they can get to work on time. They need to know better. The staff sergeant and tech sergeant can mentor them on how to behave better.

## **What special safety concerns are posed by our war efforts?**

Distractions. In flight safety, we're not going to compromise anything—the pilots are going to get crew rest; maintenance will not compromise safety—they're not going to cut corners; they just don't do that. If an airplane can't fly, we don't need it to fly—we're not being overrun, so they're not going to take a risk. The bigger problems are distractions, being away from home, and we just need to be aware of that. You're out trying to go fight the war and your wife calls and the car won't start. You're not there; you feel

helpless; you're distracted. Your daughter's going to be homecoming queen and you can't walk her out on the field. Those kinds of distractions—being deployed away from home. That said, in wartime, people seem to focus more, too, so we have fewer mishaps during war. More of the mishaps are back here, in training, not in the deployed locations. There are still the distractions—you're wondering where you're going to deploy to; if the terrorists are going to hit your hometown... There are a lot of distractions in the war on terror. The distractors are part of our humanness.

**Speaking of our war efforts, do you see any special concerns with the support side of aviation—our maintainers, weapons, security, supply, transportation and the rest of the Air Force?**

There are things we are aware of, such as experience levels—especially in Security Forces, where we have young folks who are working 12-hour days who are deployed a lot. I think we're handling it pretty well, as an Air Force. Maintenance troops are working hard, too. Fatigue could be an issue. I think our leaders are aware of these issues and are managing it pretty well.

**What role do you believe supervisors and co-workers play in ensuring our Air Force works and plays safely?**

Supervisors are important. Co-workers and peers are very important. We used to house people in dorms, where they had a lot of support to guide them along the way and help them out. Now we're trying to give young people privacy and improve their quality of life, but what we're actually doing is taking away, in some ways, their support group—their peers. You've heard the old saying, "Friends don't let friends drive drunk"? Co-workers and friends don't let friends drive without their seatbelt on, or jump from one balcony to another. Friends need to step up. Supervision has a huge role, but peers take care of each other. Use the buddy system—don't let your friend be stupid and take unnecessary risk.

**How does Operational Risk Management relate to our on- and off-duty safety efforts?**

ORM plays a big role. We all understand ORM—we're trained in it. It needs to carry over to Personal Risk Management. It's an individual who is the final risk accepter. We all do it. When you drive home—you as an individual are accepting that risk of getting on the road. If they're flying an airplane or riding a motorcycle—it all comes down to the individual. We should all use the "ACT" acronym—A-C-T:

- Assess your environment for hazards;
- Consider your options; and
- Take action to live.

If we can ingrain that in our force—it all comes down to personal risk management. A person will accept all kinds of risk. General Jumper will accept risk for the Air Force. One person, ultimately, is going to accept certain risks. The wing commander is going to accept certain risks for the wing. A squadron commander will accept risk for the squadron. Everyone else is sort of forced to accept that risk, but all risk is accepted by somebody. At the end of the day, you are the final risk accepter in your life, for your actions.

**What do you see as the greatest safety problem in off-duty activities?**

It comes back to the personal risk management thing. People aren't really assessing what hazards are around them well enough. I think we do an OK job—better than the private sector—but we have a long way to go. They're accepting unnecessary risks. A lot of times, when you hear about a fatality, they're not paying attention, they're distracted, they're speeding. Like the guy here who was going 100 mph down Central on a motorcycle, popped a wheelie, lost control and died. There was no margin of error. We lose a lot of people on motorcycles. They buy a big bike they're not used to—proficiency issues for motorcyclists is a trend we're seeing. Accepting unnecessary risk—you need to consider, "How am I going to get injured or killed?" and then don't.

**What are your goals as the Air Force Deputy Chief of Safety?**

I'd like to complete the transformation to a risk-management culture for the Air Force. Giving the Senior Airmen the mentoring training. Give all levels of PME ORM training. Talk about risk management, and especially emphasize personal risk management. Having the AFOSC, where the corporate top of the Air Force is talking about risk. Identifying risk and zeroing in on it. If we do all this routinely, we have a mishap-prevention culture. I think we can do a lot better. All mishaps are preventable. If you're sitting at a stoplight and someone hits you, when you didn't do anything wrong, even that one is preventable. It may be out of your particular control, but it's preventable by the other guy. Sometimes they're out of our control, but they are preventable. So if they're all preventable, then by default, zero should be possible. But it's going to be hard to achieve because of human factors. We have to really address the human. That's what I want to achieve. Where we're looking at where our fallibilities are. The human condition is fallible. What I mean by that is, we are subject to perception problems, physiological problems, psychological problems, fatigue, distractions, father died, money problems, you could be ill—all those

things can lead to a mishap. So, we need to zero in on that. Our condition is fallible—we can't change the human condition. We can change the conditions in which we work. Better training, better leadership, more awareness, technology to protect us from ourselves. When we're thinking like that, we'll be where I want to be. It takes five years, so we still have another three years to go to see if that culture took effect.

### **What changes are you seeing in the Air Force culture?**

It started two years ago—took a while to get it rolling. Probably the biggest accomplishment is the AFOSC. General Jumper approved it, General Moseley, the CV, chairs it, all the Air Force Air Staff two-letters are members, plus many others, including every MAJCOM vice commander, is a member of that Council. Those three- and four-star generals are talking risk, talking safety, and now after talking about it in the AFOSC, they're going to make sure their commands are doing it. We're trying to infuse from the bottom, too, getting to those young individuals—that's the biggest challenge—better training up front, ORM training at all the PME levels and basic training. Heightening awareness is already taking place, and we're seeing it in the positive trends we have. It was about two years ago, when we started. We're seeing the results this year. We've had the best flying year we've ever had. That's the maintainers, the pilots, the whole supervision of the operation. We're all embracing the new culture of mishap prevention. Granted, it's not where we need to be yet—we still have some work to do.

### **Secretary of Defense Rumsfeld has challenged DoD to reduce mishaps by 50 percent. How will the Air Force work to reach that goal?**

We've already been doing that. We started before he ever gave us that challenge, by engineering a mishap-prevention culture, by establishing the AFOSC, so the corporate top of the Air Force is talking risk. By improving our driver training education programs. Working with industry to find ways to save lives on the weekends. We've already started that, focusing on some of the technologies, like the engine-improvement program. For this challenge, in destroyed aircraft we're already down 45 percent from the FY02 baseline. In the destroyed aircraft rate, we're down 48 percent. In aviation fatalities, we're down one-third. In PMV fatalities, we're down 14 percent. We've got a ways to go, but the trends seem to be going in the right direction. This was all started before Secretary Rumsfeld's challenge. In some ways we can meet that. If we don't change our mission, which has risk—it's an activity, so there's risk—we can make headway by training, supervision, and technology—some tech-

nologies take years to develop. While we might not get 50 percent in every category, we're heading toward that mark.

### **The Air Force Chief of Staff, Gen John Jumper, has initiated a program of motorcycle mentorship. What's your view of that and how do you see it affecting Air Force riders?**

I like the idea. I used to sit in meetings with General Jumper and Secretary Roche on motorcycle fatalities, and it would just be agonizing—"What can we do?" We had the motorcycle safety summit. General Jumper likes the "Wingman" term, and in this mentorship program, his first thought was, "We need a motorcycle wingman program, where young guys ride with older guys, to learn." I think it was AETC that actually called it a "mentorship program," and General Jumper embraced that as the way ahead. Older, more experienced riders, teaching riding wisdom, mentoring the younger folks. It's a voluntary program, but highly encouraged. I think part of it is identifying who the motorcycle riders are. Do that during in-processing, and the squadron commander can talk to the young riders—all riders—about motorcycles. Encourage their people into this program. They go for rides on the weekends; they talk about safety before they go. I'll be very surprised if it doesn't show some degree of success.

### **Is there anything else you'd like to add?**

At the levels I'm working, it's very nice to see the top generals in the Air Force—no kidding—embracing safety. They actually feel it's a duty, and we owe it to the nation and the families who are entrusting us with their loved ones, to take the best care of those people we can. We do that pretty well, but off-duty, it's tougher. Guys are out there dying alone—without a supervisor, without the first shirt, without a peer, getting into single-car accidents, and they die. So we've got to encourage individuals to take care of themselves, using personal risk management. We have the top-level support; now we need the bottom-level support. We need the individuals to believe in safety as much as the top generals do. \*





# "Two,

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After reading enough safety articles to tire even the staunchest of insomniacs, it occurred to me (in the latrine, of course) there are similarities about mishaps. These similarities allow me to group them into three categories and come up with a few basic axioms that might lead us to strategies to combat and defeat some potentially bad stuff.

For simple-minded folk like myself, I like to lump all mishaps (flying, ground, recreational) into one of three simple categories: Stupid Human Tricks, Acts of God, and Breakable Chains.



## tupid Human Tricks

The first category (inspired by Late Night Dave) is events that are usually preceded with the words, "Watch this!" These words, generally harmless when spoken by a child on a three-foot diving board in the backyard pool, are not what I want to hear from someone operating a bass boat or a motorcycle doing 80. Once, after hearing these words over the radio during a low-level in Northern Iraq, I responded with, "Wedge flight, KNOCK IT OFF...NOW!!" The lesson to be gleaned from this is that if someone is about to execute what looks like an (idiotically) entertaining maneuver, you probably want to either back up or get that person to terminate and rethink.



USAF Photo by TSgt Jeffrey Allen



### cts of God

The second (inspired by the Weather Channel) is events that we really can't do too much about other than hunker down and get ready to pick up the pieces. Your house gets struck by lightning—Act of God. It's not that we can't plan ahead for Acts of God or nature; we can and we do. HUREVAC is a classic example. We know when the hurricane is coming; we disperse aircraft and assets to safer climes and strap down everything we can't take with us. I say "we" in this case because "we" all work together and act to mitigate the severity of the consequences.



### reakable Chains

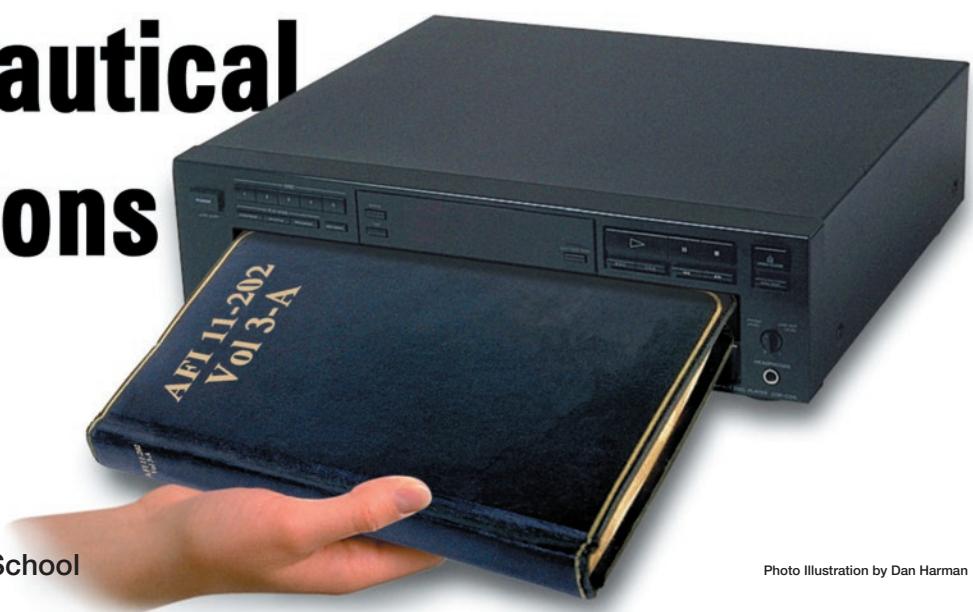
The third category (inspired by reading countless, boring, safety reports) is mishaps where a chain of several events leads to someone's misfortune. Take, for example, the late Friday afternoon departure to Wally World. Mom and Dad work all day and pack the kids in the car for the trip down to Orlando. Some light drizzle off the Gulf makes the road a bit slippery and Dad slows down to 70 to compensate but he still has to check into the hotel by 2200. After a quick trip thru the McDrive for a gut bomb and fries, Mom and the kids are fast asleep by Gainesville. Dad has a little "fat puppy syndrome" as well, but drives on as the darkness and a bit of fog rolls across the interstate. Can you see where this is going? Whether Dad falls asleep and runs off the road or hits another car is unimportant. What is important is that while several factors usually lead to what could be a potential mishap, one intervention can save the day. Switching drivers, having someone stay awake and talk to the driver, or stopping for a while to rest and let the traffic clear are simple, singular actions that could break the chain of events leading up to a potential mishap.

There were 78 ground fatalities in 2003, nine of which did not involve *driving* a conventional conveyance (car or motorcycle). The remaining 69 Airmen lost their lives while someone was driving. While most of those came with the common narrative "lost control of vehicle and struck a —" five could be classified as Stupid Human Tricks, 12 involved other vehicles that may have been causal (possible Acts of God), and 20 involved alcohol. (I agree that drinking and driving is absolutely stupid, but it is preventable and not a Stupid Human Trick.) Can you believe that nearly one third of our ground fatalities still involve alcohol? Egad! Finally, 40 Airmen died on Friday, Saturday, or Sunday. Heck, if we could just prevent the weekend mishaps we could certainly meet the SECDEF's goal of reducing mishaps by 50 percent.

While we can't provide supervision for members while off duty in the conventional "hands-on, Friday briefing" sense, perhaps we could try a slight intervention to break that chain of events. As a supervisor, when those under my wing were on the road *solo*, I would call them on their cell. A 30-second call to check on how they were doing ("Is everything going as planned?") might be the difference between an uneventful trip and the next ground fatality.

If your wingmen get a little loose in formation to where you can't see them, it might not be a bad idea to say, "Two, say position," and if you know they're getting low, "Two, pull up!" If we'd do that much in the air, we could do at least that much on the ground for our wingmen on the road. I'm sure there's a commander or two out there who wouldn't mind their flight leads making one extra radio call. ✈

# The “Plug and Play” Approach to Aeronautical Publications



**LT COL MIKE MAHER**  
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How many times have you heard a disgruntled pilot complain about USAF flying regulations, stating, “Why can’t you just give me the AIM (Airmen’s Information Manual) and let me have at it?” Or, “The Navy’s flying regulations say you can do anything that isn’t prohibited, but the Air Force says you can’t do anything not specifically permitted.” Heck, the Army hasn’t re-written some of their service-specific flying regulations since the mid-80s, and the task is so enormous they are considering just following the FAA regulations.

Well, there’s a lot of history and plenty of reasons USAF guidance has evolved into today’s AFI 11-202, Volume 3, *General Flight Rules*. Most guidance is based on application of FAA and International Civil Aeronautics Organization (ICAO) rules of the air, while other inputs have been “written in blood” from particular instances and occurrences throughout the history of military flight (“Don’t fly with your spurs on,” etc.).

The more I instruct at the Advanced Instrument School, the more I realize the effectiveness of AFI 11-202, Volume 3, as a common source of flight directives that include Air Force-specific guidance on how to apply domestic and international flight directives (e.g., DoD directives, MAJCOM supplements, MDS-specific guidance, Federal Aviation Regulations [FARs] and ICAO Standards and Recommended Practices [SARPs]). As such, AFI 11-202, Volume 3 is a robust, single document providing precise guidance to the USAF pilot, while allowing the flexibility of a “plug and play” approach resulting in a safe application of the “rules of the air.” In situations where the guidance

appears vague, AFI 11-202, Volume 3, has been designed so that FAA, ICAO or military guidance may be applied in those areas. In some instances, it prescribes the USAF method of compliance, or exempting itself from the intent of regulations written primarily for civilian operations. As with any flying activity, it cannot address every conceivable circumstance and pilots in command (PICs) are expected to use their best judgment to ensure the safe conduct of the flight.

To fully comprehend how flexible AFI 11-202, Volume 3 is, it is essential to understand a few basic precepts. The instruction is purposely designed to be supplemented with appropriate publications that apply to a given scenario, theater of operations, or even a specific country. By referring to a few key source documents that impact the regulation (for a full list of source documents, see AFI 11-202, Volume 3, Attachment 1), you can see how the aeronautical publications provide blanket coverage for global USAF operations. Keep in mind that any time you try to reference civilian source data, there are military exceptions, waivers and exemptions that may not be readily apparent, presenting the possibility of misapplication of rules for military operations. My advice: When using civilian documents to perform in-depth research on procedures, look at documents that show how to do something already allowed in AFI 11-202, Volume 3, but not specifically described in the DoD publications. Keep in mind that HQ Air Force Flight Standards Agency (AFFSA) is the policy maker for all USAF operations. Any questions should be referred to your Stan/Eval, AFFSA, or the Advanced Instrument School for further clarification.

Photo Illustration by Dan Harman

So, how do all the other rules and regulations and instructions and directives, etc., tie in? As everyone knows, Air Force-specific guidance comes in many levels of regulatory input, which can add to, but not subtract from, the basic regulation. For example, MAJCOM supplements to AFI 11-202, Volume 3, are simply vehicles to publish guidance on how to accomplish the directives in the basic regulation and to address areas where the basic regulation allows accommodation of specific command and control systems and philosophies. Information in the 11-2 Mission Design Series (MDS) Specific, Volume 3, instructions (e.g., AFI 11-2C-5, Volume 3) may contain specific operational guidance unique to individual aircraft and crew positions, but cannot be less restrictive.

The host of other DoD flight planning regulations is also key to the application of these directives. The DoD General Planning (GP), Area Planning (AP), Flight Information Planning (FLIP) and aeronautical charting documents are well known to the USAF aviator, but the concept of their source input eludes even the most sterling of aviators (unless they have had the opportunity to be a part of their development/maintenance process). In general terms, these documents are constructed and maintained using a significant number of inputs. Basically, the National Geospatial-Intelligence Agency (NGA, formerly NIMA) collects worldwide data from host nations, ICAO procedures, regional directives (EuroControl, etc.), the USAF/USA/USN theater FLIP maintenance working groups and the multi-service level FLIP Coordinating Committee. The information is documented as initial source data and used to construct publications that take into account all the procedures (domestic, international, military and civilian) along with military exceptions and/or additional restrictions. Anyone with experience dealing with a complicated mission will agree that the search for applicable information can take you through 7-10 publications for each location you are transiting. One of the primary reasons for this is the desire to avoid duplicating information throughout multiple documents. While publishing the information in multiple places may appear on the surface to make the information more accessible to the aviator, the requirement for updating multiple documents, and the fact that some information may not crossflow to other documents, would actually make the process more cumbersome and less accurate.

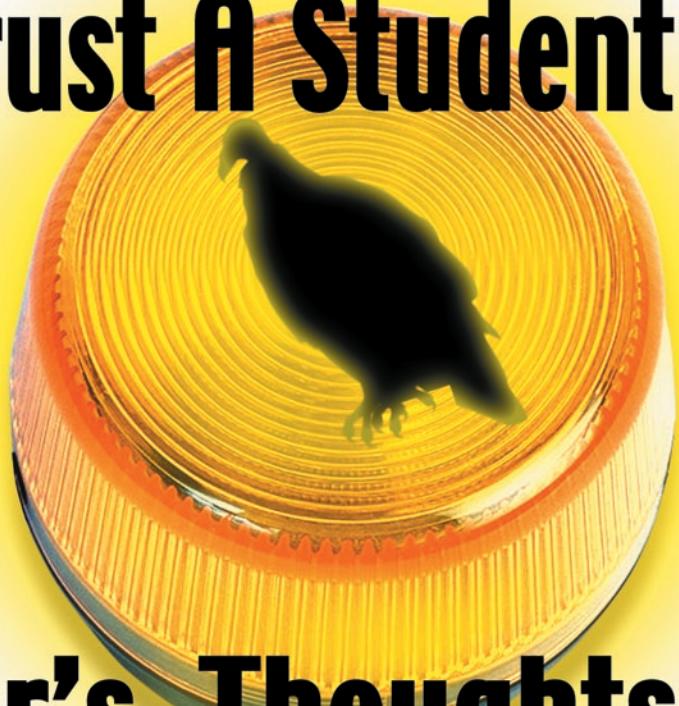
Well, OK, so this is all fine, but what about all those civil regulations that AFI 11-202, Volume 3, says "the PIC will ensure compliance" with? Domestically, Title 14 - Code of Federal Regulations, Aeronautics and Space, commonly referred to as "the FARs," provides the U.S. host-nation aeronautical information procedures (AIP) and is the

same guidance that foreign carriers use to navigate within U.S. domestic airspace. Title 14 is divided into Chapters, Subchapters, Parts (most recognizable level to Airmen) and Subparts. While the USAF aviator is responsible for operating under these rules, additional guidance published in FAA Order 7610.4J - Special Military Operations, specifies exceptions to the FARs. The basic concept is that there are areas of military operations which are not applicable to the civilian sector. For instance, although the military is subject to Part 91 – General Operating and Flight Rules (except 7610.4J), there are some operations that do not apply. Throw in a plethora of FAA Advisory Circulars and you generate the big question—which Parts are applicable and which are not? In these cases, the application of AFI 11-202, Volume 3, and MAJCOM/MDS supplements gives the military aviator the 99.9 percent solution to those disparities without having to reference every FAA publication.

Internationally, the ICAO is the big cheese. The ICAO is actually a UN organization, with its beginnings traced back to the Chicago Convention of 1944. Their charter is to maintain a common set of aviation standards around the world to better promote air commerce. ICAO SARPs provide a general application of aeronautical navigation procedures worldwide. These SARPs can be modified by individual countries to address sovereign airspace requirements, and while an individual country does not need ICAO approval for a deviation from the standard, they must publish those deviations in their host-nation AIP. ICAO Document 8168, Procedures for Air Navigation Operations (commonly referred to as PANS-OPS), are a part of the ICAO SARPs, with Volume 1 approximately the equivalent of the AIM and Volume 2 approximately the equivalent of the U.S. Terminal TERPS manual. While the basic ICAO procedures are described in the AFM 11-217 series, the guidance on when to apply them is directed in AFI 11-202, Volume 3. Most aircrew problems with ICAO procedures stem from the fact they do not have ready access to ICAO publications, from which they can extract information to fully understand the philosophy behind the requirement.

Needless to say, there will always be contradictions and situations that are not completely covered in any regulatory guidance, be it civilian or military. However, AFI 11-202, Volume 3, in conjunction with FAA, ICAO and other DoD publications, provides the 99.9 percent solution to the AF aircrew. Hopefully, the concept of how all the regulatory guidance fits together will help crews better understand the USAF guidance laid out in AFI 11-202, Volume 3. The most important thing to do when observing conflicting information is to consult with your Stan/Eval, AFFSA, or the Advanced Instrument School cadre. □

# How Far To Trust A Student



## One Instructor's Thoughts

**MAJ JEFF YEVCAK**

**12 FTW/SEF**

**Randolph AFB, TX**

"Randolph tower, Arock 61, Quarry for initial with Zulu."

"Arock 61, report four-mile initial."

"Arock 61 will report four-mile initial."

It's almost the end of another afternoon T-1 PIT formation airdrop and single-ship transition sortie. The weather is pretty good and it's been a great flight. Arock 61 just entered the north VFR entry point for Randolph Runway 14L. They descend to 2600 feet MSL and maintain 250 KIAS per local procedures. Major Rich Jones, a PIT IP in the 99th Flying Training Squadron is flying in the left seat as a JSUPT student. His student, Capt Jian Pena, an instructor in the 48th Flying Training Squadron at Columbus AFB, MS, who is finishing up T-1 PIT, is in the right. After Capt Pena finishes making the radio call, BANG! Several Master Caution lights on the instrument panel illuminate. What has just happened?

Time for the training to kick in. Step 1: Maintain aircraft control. Not a problem, other than a little noisier than normal. The aircraft seems to be flying OK. Step 2: Analyze the situation and take appropriate coordinated action. Maj Jones transfers aircraft control to Capt Pena and looks over the Master Caution panel while reaching for the Dash-1. The biggest thing that catches his attention is the lights that are illuminated—Battery Cut Off,

Photo Courtesy of Author  
Photo Illustration by Dan Harman

Battery Feeder Fail, and Emergency Bus Feeder Fail. Their T-1 has lost all main electrical power. After a quick run-through of the Section 3 checklists, Maj Jones resets the battery system, and electrical power is restored. With this done, the Master Caution panel is cleared and it's time for Step 3: Evaluate the ability to safely land the aircraft.

Maj Jones calls the squadron supervisor on duty to relay the info and get assistance on the VHF radio, while Capt Pena continues to fly the aircraft, climb to the high pattern of 3100 feet, and declare an emergency with the tower on UHF. The 99 FTS squadron supervisor coordinates with the Wing Supervisor of Flying in the tower for a chase ship. Another Randolph T-1 happens to be in the pattern and Lt Col Fred Girbert, 99 FTS PIT IP, rejoins and surveys the damage. "You've got a large hole about halfway up the nose on the left side. Did you strike a bird?" This confirms what Maj Jones believes has happened. Lt Col Girbert continues, "Other than the hole in the nose, you look clean. Wings and engines look good." Armed with that knowledge, Maj Jones decides it is time to put the aircraft on the ground.

Now, another problem crops up. Maj Jones can't see out the windscreens because of all of the blood covering it. This means that Capt Pena, the student, will have to make the landing. Maj Jones

has the option of flying a “side-window” landing, but decides that would be too dangerous. As the PIC, Maj Jones really should make the landing. But when you can’t see the runway...

It just so happens that this isn’t just another simulated EP that we PIT IPs give to our students to see how they handle stressful situations. It happened on May 8, 2003.

“There I was...” stories. If you’re a fighter pilot, you lift up your hands so your right hand is slightly behind your left, pointing at your watch, simulating rolling in behind an enemy. Even us “heavy drivers” do this to show a closure to precontact or a rejoin of a large formation. However, it’s difficult when you’re part of a 15-ship airdrop to get that many hands together to represent everyone.

As a T-1 schoolhouse instructor at Randolph, I emphasize with students that they were, in fact, instructors prior to attending PIT. Maybe they were a C-5 aircraft commander, or an F-15 flight lead. They let a less-qualified person fly and land the aircraft, or maybe just fly and land on the wing. So, although not formally an “IP,” they were an instructor. The opening scenario then begs the question: If you were this instructor, how far could you trust your student?

I remember a discussion in 1993 with my squadron commander about this subject. He told me that my C-141 instructor school slot was eliminated because our wing had too many instructors at the time. I was one of six in that situation in my squadron alone. It was then that he talked to me about already being an instructor simply by being an aircraft commander. The only thing I couldn’t do that IPs could was perform touch and go’s—I flew around the world with copilots, filled out training folders, taught national and international procedures, evaluated general knowledge, and a host of other things.

Here I was, an instructor, without any formal training or formal guidance on how to do it. All I had to go on were the examples of other aircraft commanders and instructors. My next assignment was as a T-1 instructor at Reese. I remember being told upon PIT graduation that we were minimally qualified as instructors. The real place where we would learn how to teach students was “on the line.”

The best thing about my first two students at Reese was they gave me great feedback on how far to let a student go. These two were very good students and they never did too many things wrong. When they did it usually wasn’t drastic, and I could correct and instruct without having to worry about returning home to a note to see the ops officer. However, when my second JSUPT class arrived and I flew my first T-1 “dollar” rides with students, it was an eye-opening experience. I realized that the amount of prior flying experience a student had was the big factor when estimating

what challenges that might be in store for me on a student sortie.

Every IP experiences an epiphany when they truly learn one thing: You never know what a student will do in a given situation. At least in a T-1, it is extremely difficult for a student to fly the aircraft inverted up initial. But for “fast movers,” this may not be the case, especially when the aircraft is built for extreme maneuverability. This can also apply to fellow pilots who you think would know better. However, their training, or present mindset, or a momentary distraction can easily cause you to lose control. I was an IP in the T-39 at Edwards AFB when I went to fly one day with the newest T-39 pilot—a CV-22 test pilot. This gentleman was very well trained and extremely knowledgeable about testing aircraft. But his background, and thus most of his flying experience, was in helicopters. Needless to say, the “death spiral” we were performing at one point wasn’t fun, and I had to take the aircraft from him because I was unsure he knew what situation he was in. He didn’t until I recovered the aircraft and explained the situation. What a great learning situation for the both of us.

So, where am I going with all of this? I’m trying to give you a little of the mindset of a Maj Jones. Now, most IPs will tell you that they won’t trust a student in the jet any farther than they can throw them. Which means you never trust a student. As the IP, you’re the one responsible and the one who will answer if the jet gets “bent” on the sortie. However, most have never had to confront a situation like this.

As luck would have it, this sortie was Capt Pena’s last flight prior to his IP checkride and graduation from PIT. The landing was uneventful and they taxied clear of the runway before shutting down engines. The bird they never saw was a four-pound Turkey Vulture. The hole it made was nearly 18 inches in diameter. After about three months of repairs, this aircraft was back flying at Randolph.

I have been fortunate because I haven’t been in a situation anywhere near this one. However, if you are an instructor, what would you do if you were to return tomorrow from that 2v2 training sortie as flight lead and you lose your pitot-static instruments and have to fly and land on your wingman’s wing? Or how about returning in your KC-135 from the AR track and your windshield “spider-webs” so you can’t see out of it and there are only two pilots on board? I bring these scenarios up because the time to think about a situation like this is when you’ve got your seat parked in a chair that has an airspeed reading of zero, not when it’s happening and you’re strapped in and airborne.

*Note: Maj Jones was awarded the 12th Flying Training Wing Flight Safety Award of Distinction for his handling of the situation and recovery of the aircraft.*

# The Ragged Edge Of Fatigue

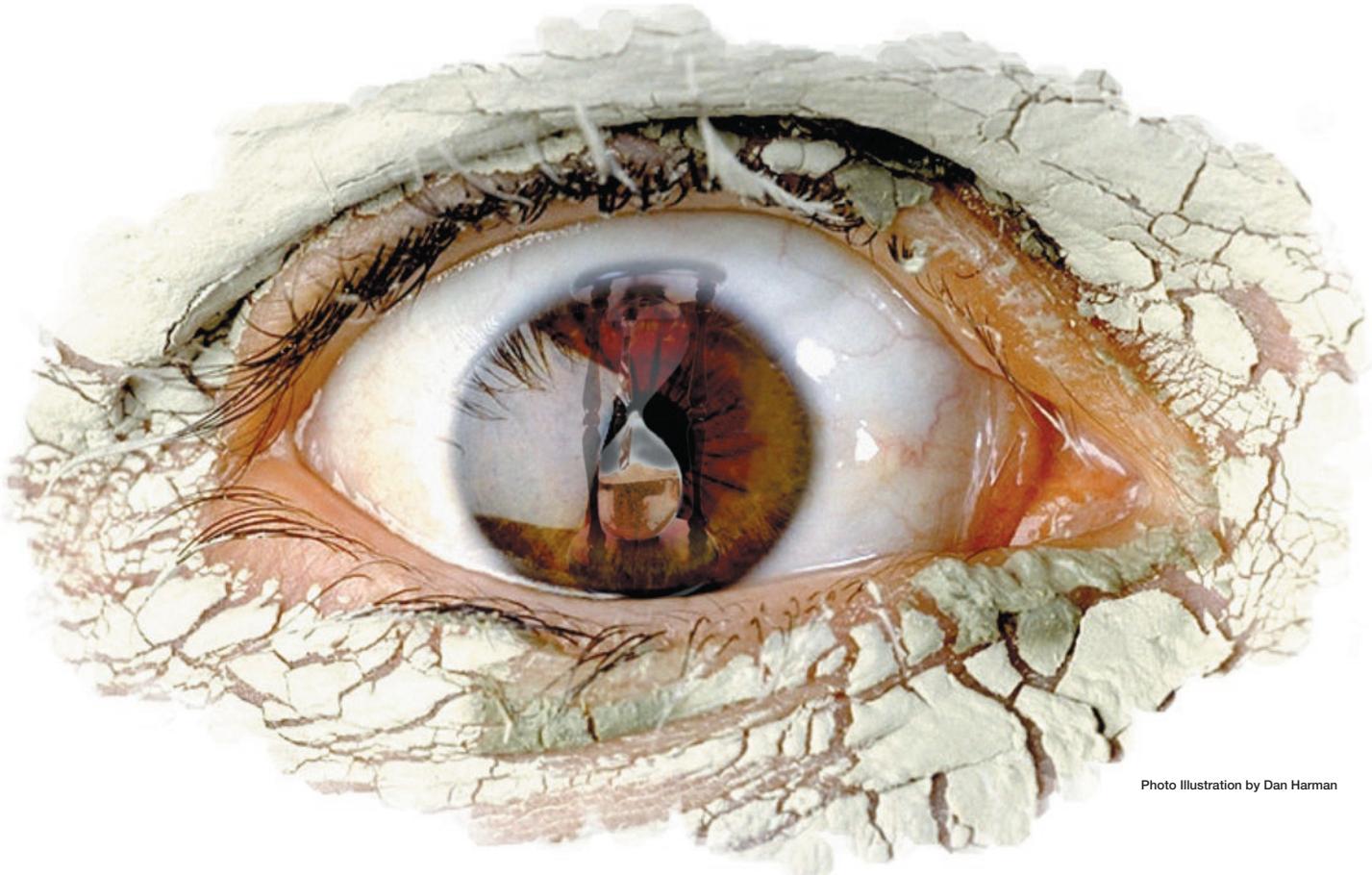


Photo Illustration by Dan Harman

**CAPT PHILIP COOPER**

Chief of Safety  
JSOAD-AP

Most crewmembers have experienced flights that bump them up against the end of their crew duty day. These flights push us to perform toward the peak of our capabilities. A thorough ORM assessment allows the crew to mitigate the risk of flights like these.

Combat is different. Missions that bump you against the end of your crew duty day are rarely scheduled like this. In combat, a simple one-hour logistics flight hauling people and cargo from point A to point B can turn into a multiple-hour flight with numerous unplanned complexities, dictated by combat-related contingencies. How do you separate professional aviators from weekend, fair-

weather pilots? Try conducting an evolving combat sortie on night vision goggles (NVGs), landing at the end of the crew duty day, and doing it smartly and safely.

My crew experienced several of these missions during a 10-calendar-day period in which we flew four functional check flights and six mission sorties in our MH-53M Pave Low. The majority of these sorties were flown to the last minute of our crew duty day, pushing the following day's flight to land later. On Day 1, 17 November, we landed at 19:40Z (22:40L) and by the ninth day, 25 November, we were landing at 0400Z (0700L), pegging out our fatigue factor needle. Though we did not have to fly on the

night of the 25th, thirteen hours after landing early that same morning, we started mission planning for what seemed to be a thankful break. The mission for the 26th started out as a one-hour flight to one landing zone (LZ) and back. During the planning, the mission stretched to a four-hour sortie as we added new air support requests (ASRs). This was no big deal since it would make for an eight-hour day instead of the 12-14 hour days previously experienced. However, instead of our day starting later on the 26th, it started earlier, forcing our crew into a reverse circadian rhythm.

Just before the brief, one of the ASRs went away, shortening our flight to two hours. The weather report was good, with 100 percent illumination, but likely to deteriorate at 2100Z, four hours after our expected land time. Before we stepped, the mission commander told us of a possible direct action (DA) mission in which we might be asked to cover the casualty evacuation (CASEVAC) portion. Therefore, we talked among ourselves about the likelihood of once again landing at the end of our crew duty day.

During the first two-and-a-half hours of our flight, the mission commander told us we would have the CASEVAC for the DA mission at the end of our current mission. The flight so far was benign and almost lulling, challenging us to maintain mission focus as we made our way to the DA briefing location. Our doldrums soon faded when the pilot in the right seat noticed a MANPAD blast straight up into the air about three miles away, and Chalk 2 spotted tracers as if someone on the ground could hear us but had no idea where we were.

About five minutes later one of our missile warning receivers chirped and our right scanner, witnessing a rocket zooming up at our belly, called a break left while the crew punched flares. Chalk 2 followed suit until one of their scanners noticed that the rocket was actually an illumination flare, most likely shot off by the Marines on the ground. The pure adrenalin coursing through our veins effectively countered the reverse circadian rhythm and stored-up fatigue from our nine days of long hours. By the time we landed in the LZ for the DA brief, we were wide awake. As expected, we learned that our role in the CASEVAC would be to ground lager and wait for the call if a mass casualty situation occurred.

For the next three hours, we sat in the LZ with rotors spinning, listening to the DA mission on the radios as the adrenaline, previously sustaining our alertness, petered out. Soon, we felt the effects of gravity upon our eyelids. By 2350Z we were five hours past the end of our scheduled land time, a half hour away from home, one hour away from a 14-hour crew duty day, and at the continuation fuel that would enable us to swing by one last LZ on the way home to pick up a few passengers going our way.

While sitting in our LZ, we could not see that the weather toward home had deteriorated down to 800-foot ceilings with barely two miles of visibility. We figured it was a thin layer though, and rather than flying tactical low-level, in bad weather and at the end of a long day, we elected to keep Chalk 2 low while we climbed up to see where we would break out. Passing 3000 feet, we began to break out, but still had a slight haze, so we passed our new altitude to Chalk 2, who began a climb to our altitude. That was the last call we would make to our wingman for a while because our radios all decided to quit working simultaneously.

For the next 20 minutes of flight, our crew worked to get the radios back online, approach plates out, and to keep the spinning side of the aircraft pointed up. Chalk 2 did an excellent job of talking to the appropriate agencies for us and correctly guessing we were not planning to make that last stop before returning home. About 15 miles from home, we descended to our minimum altitude and broke out with about three hazy miles of visibility. Finally, we got four of our six radios back online, but not the one we needed to talk to tower. Therefore, we relayed through Chalk 2, who was now descending to our altitude and trying not to hit us.

With wheels finally on the ground at home, we poured ourselves out of the aircraft, having pushed ourselves to the limit. The cumulative effects of long-hour days and reverse circadian rhythm took its toll on us. Though none of the ten missions individually pushed us to the edge of the envelope, each of them cumulatively pushed us further to the edge until finally we were at our limit. We fortunately got the next seven days off by scheduling default. What made this situation unique is there was no breakdown in leadership or discipline, nor was there a mismanagement of crew schedules. Our crew received the proper crew rest, but the cumulative effects of fatigue and shifting sleep cycles hampered our internal clock's ability to keep up.

The basic causes of fatigue are threefold: insufficient sleep, disruptions to the body's clock, and extended duty periods. While our crew received the required crew rest, the other two basic factors leading to fatigue were clearly at work. Our crew recognized the effects of these factors and we resolved to pull ourselves from the schedule if tasked to fly on day 11. That is a tough thing to do since we all want to complete the mission, but as Secretary Rumsfeld said, "World-class organizations do not tolerate preventable accidents." What we learned is we must be ready to assess what our bodies are telling us and be able to make the tough call in order to keep from falling off the ragged edge of fatigue. □

# The Time It Takes:

To become a safe aircrew member/technician...one lifetime

To receive a Flight Safety award...one year

To implement a unit Flight Safety program...one month

To carry out a formal Flight Safety survey...one week

To conduct Flight Safety Training...one day

To hold a Flight Safety briefing...one hour

To read a Flight Safety poster...one minute

To destroy all of the above through a Flight Safety accident...one second



HQ AFSC Photo by MSgt Michael Featherston  
Photo Illustration by Dan Harman



Photos Courtesy of Author  
Photo Illustration by Dan Harman

## Just Another Combat Night Sortie

**CAPT TODD KNIGHT**  
388 FW/SE  
Hill AFB UT

I'll admit it: Although I've sat through many Crew Resource Management (CRM) courses, like many of us, I have struggled to stay awake. But, let me tell you a story about how good CRM prevented a bad situation from getting worse. In this case, it enabled the Air Force to save two valuable combat assets—an F-16 and, more importantly, my life. Here's my story.

My flight lead, Capt Jason "Hollywood" Smith, and I were frapped to conduct night Close Air Support (CAS) in support of Operation Iraqi Freedom (OIF). Unlike most nights, however, the winds required that we take off from Runway 14. Though this was our first time using this runway (Runway 32 is always the active), we were comfortable to proceed because a previous AEF rotation of F-16s had taken off from Runway 14 with no problem. As we approached the runway, it became apparent that Runway 14's lighting was as poor as 32's—marginal at best. In fact, the runway's poor lighting was cited as a contributing factor in two previous mishaps. Nevertheless, we were accustomed to flying with the poor lighting and weren't put off by the deficiency. The weather was scattered at 15K and forecasted to get slightly worse. Illumination was low, making it a very dark night. All in all, just another combat night sortie in Iraq. Well, almost.

Due to FOD on some of the taxiways, Hollywood back-taxied 2000 feet on the runway so he could use all 11,500 feet for takeoff. I waited on the taxiway for him to take off, and then back-taxied to start my takeoff roll. By the time I got rolling, almost a minute and a half had elapsed, leaving me about 12 miles behind Hollywood. As I selected afterburner and approached 120 knots, roughly 2000 feet down the runway, I hit a dip in the concrete that drove the nose of my combat-loaded F-16 into the ground. I always thought flying was a bit like "saddling up," and trust me, hitting this dip certainly galvanized my thoughts. Shortly after being bucked, the land-

ing light extinguished and then I felt my nose wheel vibrate at about 150 knots. I checked the engine. All looked normal. Not wanting to do a high-speed, heavyweight abort for an inoperative landing light and a little vibration, I continued the takeoff. Once airborne, I double-checked my engine and raised the gear. It came up normally. As I started to rejoin, I told Hollywood about my rough takeoff roll. He had also encountered a rough takeoff and decided to call the Supervisor of Flying (SOF) so he could inform subsequent flights of the hazard. We commenced our four-hour sortie but decided we would accomplish a battle damage check before landing to ensure the landing gear on both jets were undamaged. Better safe than sorry, right? So, off we flew to Fallujah for immediate tasking.

Meanwhile, back at the dimly lit airfield, Airfield Management was conducting a routine sweep of the runway. At the same time the SOF, Capt Dylan "Trunk" Baumgartner, was preparing for a shift change with Capt Andrew "Dice" Lyons. Airfield Management called and said they found a large chunk of tire on the runway. The two SOFs then became an instrumental team in the CRM process. Their first action was to contact us and discuss the situation. At the time, we were over Baghdad, observing ground tracer fire, approaching joker fuel and ready for our next tanker rendezvous. When our controller told us to contact the SOF, I wasn't prepared for what I was about to hear.

The SOFs informed us that tire pieces were found on the runway, and the pieces looked a lot like an F-16 nose tire. Since my landing light had extinguished on takeoff, I knew it was my tire—*was* being the operable word. The SOFs then said an inbound dust storm would make the airfield zero-zero in 30 minutes. To boot, all the local divert airfields were forecasted to have poor weather also. Great; any more good news? So, I'm now at bingo fuel, the weather is crumpling, and I'm almost positive my nose tire is gone.

We needed time to think and run the checklists before lowering the landing gear. Hollywood turned our flight toward the tanker, politely asked a flight of F-18s to give way, and we each took 3,000 pounds of fuel. After this, the SOFs began reading checklists and told us to selectively jettison stores *prior* to lowering the gear. Because we couldn't see the primary jettison area, Hollywood requested the coordinates from the SOFs. Using all available resources, Dice quickly called Fighter Ops and had a wingman pull the coordinates off Falcon View. Dice then passed the coordinates to us, and I was able to safely jettison my two 500-pound GBU-12s and one 2000-pound GBU-31.

By now the weather was getting worse. Time was of the essence, yet we still had not gone through the blown nose gear, approach end cable engagement, and emergency ground egress checklists. The SOFs continued reading through the checklists, making sure to emphasize important safety tips. One such safety tip is to go around if you miss the cable because the nose wheel will likely reverse caster on landing—resulting in a cartwheel. Nice information to know ahead of time. They also said that in 10 minutes the WX would be near zero-zero. We could see the weather rapidly moving in from the north. We needed to hurry, but couldn't afford to leave anything to chance.

Thinking ahead, the SOFs decided to park a truck at the approach end cable with its headlights on so I could see the cable's location. This was a fantastic idea since my landing light was out. In hindsight, this helped me not only see the cable, but allowed me to position the jet in the right attitude prior to cable engagement. Fabulous! The SOFs then told me about their own cable engagement experiences and what to expect. These two SOFs were on their "A" game that night and were doing everything possible to help get our two aircraft on the ground safely.

Now over the field, I lowered my gear. As expected, Hollywood confirmed with his NVGs that my nose tire was gone. Damn the luck. By now the north end of the runway was obscured, but the south end was still clear. We needed to land *now*. I checked Hollywood's gear; all looked normal. Knowing that I was going to shut down the runway, Hollywood landed first and relayed weather conditions so I could find the runway. He told me to leave my NVGs on until short final, to call up Steerpoint 20 (the approach end of Runway 32), and to start the approach *now*. The SOFs verified with Hollywood that the truck lights helped illuminate the cable and did not hinder the approach to landing. Good thinking.

Now it was my turn. The AB was lit and I was spiraling down, near the 4G gear limits, to burn and transfer gas into the aft system for the approach end arrestment. I hit the tank inerting

switch and opened the air refueling door per the checklist. The checklist says to start feeding gas from the forward tank at 3000 pounds and to land with 1500. But, since I needed to keep divert fuel in case I missed the cable, I started feeding from the forward tank with 5000 pounds and planned on landing with 3000 pounds. My next challenge was trying to land on the runway centerline without a landing light. I would simply have to do my best.

After finishing my third spiral, it was time to land. I couldn't see the runway at first, but then began to break it out at about three miles. Being steep, I dove the jet at 15 degrees nose-low until established at half-mile on a 2.5-degree glidepath. I then took the NVGs off in case I needed to eject. Airspeed and AOA, to my surprise, were perfect. The cable was 2000 feet down the runway. I lined up in the center, and kept thinking over and over to keep the nose gear in the air after landing so it wouldn't hit the cable. I landed approximately 400 feet down the runway at 13 AOA. I slightly lowered the nose and took the cable at five degrees nose-high. As soon as I hit the cable, the aircraft immediately veered toward the left side of the runway; I placed the throttle to off in case I was to depart. Fortunately, the aircraft came to a stop, and I emergency ground egressed. My exciting adventure came to an abrupt halt.

Upon investigation, aircraft damage included a missing chunk of the speed brake (likely from the cable engagement), a bent engine inlet strut, and a broken taxi light from the blown tire (both likely from the impact on takeoff). They also found a four-by-eight-inch piece of rubber stuck in the right ECS duct. The only way for it to get there is by crossing the inlet duct, yet no damage was done to the engine. In the end, the lesson learned is that CRM helped our team save two valuable assets. Maybe it's just Airmen helping Airmen. Call it what you will, but more importantly, do it.

Epilogue: I feel lucky this was not a reportable mishap. I also feel grateful to my bro's. My flight lead, Hollywood, could not have done a better job handling an emergency or keeping his cool when things started deteriorating rapidly with the weather. The two SOFs that night, Trunk and Dice, did a phenomenal job of keeping the situation under control and deserve a lot of credit in helping this aircraft get on the ground. The Airfield Operations flight also deserves credit for finding the FOD and informing the SOF, not to mention providing the vehicle to illuminate the cable. The weather situation complicated the problem, but there was a divert airfield (though a long way away) if needed. After I landed, the field was closed for the next five hours due to weather. On this night the SOFs and the entire team could not have done a better job. 



# Blown Tire

**CAPT JOHN C. BISSELL**  
358 FS  
Davis-Monthan AFB AZ

Another hot day at Base X, but things were looking up. The Box was closed and I was stepping out the door to knock out one of the remaining rides on my Instructor Pilot checkout with the Squadron Director of Operations. I was running through my head what standard errors he would try and give me on this medium altitude ride. I was not expecting the entertainment that this sortie was about to include. Since we were flying combat sorties, maintenance had left our Hawgs combat-loaded for a quick turn-around to fill the next day's schedule. Not much to worry about; we had been here for months and it was the latter part of the day. It would actually be cooler than we were used to. And so the bottom line was to keep No. 2 from pooching things up too badly so that I could move on to the low-altitude attack rides.

Ground Ops was normal through taking the active, I signaled for run-up and No. 2 indicated he was ready to go. Brake release was followed—not too quickly—by check speed at 1000 feet. As I mentioned before, we were heavily loaded and the temperature was still high. Rotation happened normally and I got airborne with a not-so-normal thump against the left side of the aircraft. I had always heard that if you have a blown tire in the

A-10 you (the pilot) need not be too concerned with the go/no-go decision. I had spoken to two pilots before about tire failure on takeoff, and they both said they experienced immediate deceleration with no option to continue the takeoff. This was something new; I just shredded my left main tire as I was lifting off. This was something that I had not really spent much time thinking about.

After the jolt from the tire separating and hitting the underside of the aircraft, the next thing I heard was No. 2 saying, "No. 1, I think you just blew your left tire." The Dash-1 directs not to reposition the gear or flaps for this type of emergency. I next needed to maintain airspeed below gear and flap limiting speed. I pointed the nose toward the closest tactical range to find a good place to hold so I could burn down gas and lighten the gross weight. The A-10 does not have a fuel dump. Remember when I said that it was later in the day? Now night was going to be an issue. I really did not want to land with a bad main tire when it was going to be hard to see (call me crazy). No. 2 was doing a good job of holding on. He informed me that I had damage to the left flap and gear area and that the tire was not looking good. He could not tell if the tire was completely destroyed or if only the tread had



USAF Photo  
Photo Illustration by Dan Harman

separated from the aircraft. We then received a call from the supervisor of flying that large chunks of rubber were thrown near the departure end of the runway.

Let's recap. It is quickly getting dark, I am slowly burning gas, and I have bombs on the aircraft. The only good news was that because we were going to land late, we would be unable to make the pilot meeting that was scheduled for that evening. I was not keen on keeping the bombs on for a heavy-weight landing and the Supervisor of Flying (SOF) and our squadron Top-3 did a good job of greasing the wheels for us to drop on range. The range was under the control of a ground forward air controller who was happy for the work. After informing him of what was going on and what I needed to happen, he quickly passed flight lead discretion to me to employ on range. I had never spent much time thinking about how to accurately drop ordnance with the gear down. After my first attempt, the ground FAC reported, "Very short at 6 o'clock." After a combat offset, the next few releases were vast improvements. I can safely say that I have a pretty good sight picture for how to expend with the gear down in level flight. If anybody needs a technique, drop me a line.

I had dropped a considerable amount of weight both in ordnance and gas. The real problem was the time of day. I was losing daylight rapidly. We decided—yes, I said we—that the prudent thing to do would be to land with daylight vice continuing to hold so as to burn down even more fuel to get lighter.

I set up for a shallower than normal approach so as to fly the aircraft on to the runway. As I touched down I noticed a yawing motion caused by the extra drag, but found the aircraft controllable. What we did not know was that the tire had actually maintained integrity, and that only the tread had separated from the tire.

There are numerous things that caused this mishap to occur. Here's what I think went wrong and right.

Factors such as high temperature and gross weight have to be mentioned. It was the hottest part of the summer and this caused two large problems for the tires. First, with the temperature as hot as it was, we had a higher than normal ground speed during takeoffs that increased the energy that the tires had to absorb each flight. Second, we had high gross weight while operating from a less than perfect airfield. This caused wear on the tires through rough surfaces and tight turns. Both of these factors greatly diminished the operational life of our tires.

What went right? From the first indication of a problem to the termination of the emergency by the fire chief, flight discipline between No. 2 and myself was excellent. Not once did I feel No. 2 used his position in the squadron to influence my decisions with the aircraft and how I maneuvered the flight. Which is exactly what we had discussed during our mission brief. Another important lesson that I carried away from this flight has to do with CRM. Whenever I had difficulty with the local controllers I could lean on No. 2 to talk to them and explain what we needed and where we were proceeding. The SOF also helped to explain to tower personnel what I needed and when. He was instrumental with the recovery of all assigned aircraft for a logical and smooth recovery of aircraft, in case I closed the runway down. He also helped in reminding me of DASH-1 recommendations for this particular emergency.

In summary, I walked away with a few lessons learned that were contrary to what I thought going into this sortie, and several that I relearned. When discussing tire failure on takeoff, I had always assumed that I would abort. I had discussed this problem with two experienced pilots and thought that I knew what would happen. I had a much easier time dealing with the situation because No. 2 did his job and did not try to lead from the rear. CRM came into play and No. 2, the SOF, and I worked as a team to bring the aircraft home. ■



**MAJ RUSS OCHS**  
357 FS/SE  
Davis-Monthan AFB, Ariz.

I know we've all been there before: Thrown into a last-minute sortie with minimal time to brief all the mission tasks the flight members want to achieve. So, I know we've had flight briefs that began with, "Time hack is good, Motherhood is standard."

In a perfect world, it wouldn't be a big concern to abbreviate the administrative aspects of a mission—basic radio calls, formation positions, etc. However, the sudden rush to get mission-planned, briefed, signed out, and in the right frame of mind to fly usually includes airspace, range times, or

other factors that don't easily fit into your hastily conceived plan. As a result, the need to spend most of what little time there is briefing the "meat of the mission" usually forces the amount of time spent on the Motherhood to be adequate at best. In most instances, these sorties go without a hitch. However, in those rare instances when all doesn't go as planned, the extra time spent briefing those so called "standard" items could mean the difference between a simple debriefing item and a lost aircraft or, worse, an aircrew member.

Illustration by Dan Harman

Most of you who have completed a Flight-Lead or Instructor Pilot Upgrade program have heard this before. After completing the sortie, the IP usually started his de-brief of your performance with the following, "Overall, your brief was OK, but you spent *way* too much time on the Motherhood." To me, this seemed to sting more than the critiques of my flying skills, radio procedures, or tactics. From early on, we are continually told to keep the Motherhood portion of the brief under some magical time limit so we can spend more time briefing up the other mission tasks. In many cases it becomes ingrained in our minds that the shorter we can make the Motherhood, the better our mission briefs will be. As a result, we do end up cutting the length of the Motherhood down to the desired time limit by briefing most of the items as "Standard." In fact, some pilots seem to get a sense of pride if they can make their Motherhood shorter than everyone else's. However, there is a very fine line between briefing too much and not enough. It all boils down to what each pilot understands as "Standard."

For the most part, every wing has a written set of standards that its pilots operate under. The purpose of these standards is very simple. They ensure that unless the flight lead briefs otherwise, all flight members will perform the mission-related tasks written in the standards exactly the same. These standards could be as simple as what each flight member is required to bring to the brief, or as complicated as how a four-ship will perform an Instrument Trail Departure. By knowing these standards, each pilot can develop a set of expectations that he or she has for the others and also understand what is expected of themselves. Written standards allow the flight leads to brief certain portions of the Motherhood as standard and to be certain that the flight members will know what will be required of them. This provides the ability for the flight lead to spend more time briefing his attacks, contracts or planned events in the time allowed for the flight brief. However, sometimes it isn't so cut-and-dried as to which events on a particular mission should be briefed as "standard," and those that perhaps should be explained in a little more detail.

A good flight lead should have the ability to look at what items are important to the specific mission at hand and be able to set aside the time required in the brief to discuss them in more detail. The need to brief certain items in depth could be dependent on many things. One of first factors that the flight lead should look at is the other flight members. Experience, currency and capabilities all play an important role in how much of the Motherhood can be briefed as standard. But a flight member's proficiency should

also be a determining factor. When was the last time that person flew an Instrument Trail Departure? How long has it been since they performed a night aerial refueling? These are the questions that the flight lead should be asking of the other members in order to determine if extra time should be spent discussing them. This problem could easily be compounded with the addition of more than one wingman. Who makes up the other flight members is also something that needs to be examined.

Most flight briefs are ended with the flight-lead asking the other members if they have any questions. Now, you would think that any trained, well-disciplined pilot would have no problem "fessing up" if they needed something clarified from the brief. But how many of us have ever felt intimidated in the middle of the flight brief? Imagine yourself being a brand-new wingman in your first fighter brief. Do you think you would feel comfortable asking questions about something that was briefed as "standard," and showing that perhaps you don't know the standards like you should? Probably not. In this instance, the flight lead should have the ability to get a feel if the other flight members might not be clear on something, and to test their knowledge with questions. If the flight members are

able to correctly answer questions about a few items briefed as "standard," then the flight-lead should be confident that the standards will be adhered to.

One area that written standards tend to be weak in is how to deal with emergencies. There can be no questions between flight members on how they will handle inflight emergencies if the occasion should arise. This is especially critical at night. If a NORDO situation was included in the problem, inadequately briefed expectations could lead to trouble. The flight lead should spell out what they want done in specific instances. What will be the recovery bases? Who will read the checklists? When will the lead be passed? A quick brief beforehand in situations like the few listed could make handling a flight emergency much easier than if it wasn't even discussed. The flight lead should analyze what environment the sortie will be taking place in, and make sure that the flight members are aware of his or her expectations.

Don't get me wrong. I am not saying that flight leads should lengthen the Motherhood to an hour long and cover every item in great detail. What they need to do is analyze all the factors of the sortie, flight members and themselves in order to come up with a Motherhood brief so that no one leaves the brief with questions. We need to get away from the practice of measuring the quality of our briefs by how short we were able to keep the Motherhood portion. ↑

**By knowing these standards,  
each pilot can develop a set of  
expectations that he or she has  
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what is expected of themselves.**

# ORM FOR WEAPONS OFFICERS



**LT COL JOHN DOLAN**  
**16 WPS/CC**  
**Nellis AFB NV**  
*Courtesy, USAF Weapons Review*

No, there is no typo. I am using "ORM" and weapons officer in the same title. Now, I was a previous chief of wing safety, so I have some safety stink on me. But, I'm also the commander of the F-16 WIC and challenge any of you to a BFM engagement of your choice! As confident as I am about my ability to school you on BFM, so is my confidence in telling you that ORM and weapons officers go hand-in-hand. It's more than spouting off at the wing safety day meeting "tactics is ORM," because that's all the safety knowledge you have. I'm not here to convert you into a safety officer. On the contrary, I want you to understand your role and responsibility to ORM and *use* ORM to your tactical advantage. Before you write a squadron syllabus, develop a yearly training plan or propose a Red Flag spin-up program, you have to understand that there is a trade-off between the risk you're asking your squadron commander to take versus the training you desire. Any plan of yours, without careful

thought to preparation, squadron experience and realistic objective will lead to lost confidence from your leadership, promote the persona of just another "Nellis Cowboy," and put your squadron mates in a potentially dangerous situation.

The challenge of ORM is to apply the risk of the mission to the need of training. Have you, the squadron weapons officer, ensured the flight is *ready* and has the *capability* to accomplish the mission safely and effectively? Every instructor at the weapons school asks these questions everyday before going out to fly a syllabus mission and is rooted in school history and philosophy. In the 1976 *Fighter Weapons Review* article "Instincts of the Fighter Pilot," Capt Jumper discussed two basic qualities that are fundamental to the complete development of an individual's capabilities: discipline and awareness. If one has discipline and awareness, you are on the road to a tactically smart, effective and safe sortie.

Discipline, as summarized in Capt Jumper's article, comes in many forms and is more than just following the training rules IAW AFI 11-214. Is your wingman flying the correct formation and do you correct him on the spot if he's out of formation? Sounds so basic, but I've seen a bad trend of wingman *and* flight leads being lazy. We expect our wingman to be in the briefed position, but when was the last time you real-time corrected your wingman's formation and debriefed his formation flying throughout the mission? Are you the lazy flight lead that keeps your wingman in "fighting wing" because you don't want to work comm-out turns? Read some recent safety reports and you'll see how basic formation flying cannot be taken for granted. If you want your wingman to have the capability to shoot a BVR AIM-120 or sniper a HARM at the surface-to-air threat, you'll first make sure he can fly formation in his sleep! Again, what you think is "basic flying skills" is your tactical key to success. The point is that you have to train and uphold discipline within your flight and it starts with you as the flight lead. Discipline is a black and white quality. You either have it or you don't. At the weapons school, lack of flight discipline is the quickest way out the door, regardless if you're an IP or a student. Your flight and your commander are counting on you to be the "poster child" of flight discipline and demand the same from your squadron mates.

Awareness, most commonly called situational awareness (SA), is the all illusive term for "knowing all that is going on, at any moment." There are obviously different levels of SA depending on experience and level of mission difficulty. Do I expect one of my students to have "total SA" on his first 4 versus 4 DACT? No. Neither would I expect my brand new MR wingman to have total SA on his first trip to the bombing range. Your challenge as a weapons officer, instructor and flight lead is to know the individuals' *capable* SA level and flying your mission within those constraints. You need to construct a training plan, syllabus and a mission that is both within the current SA limits of the aircrew, while fostering a safe learning environment that promotes mental awareness development. At the weapons school, we don't start day one with an 8 versus 8, all-altitude AA-10C war against the most challenging IADs seen in recent history. Our syllabus is a building block approach, teaching skill sets in phases. Academics (290 hours) are taught to reinforce those skill sets. We walk before we run. If student performance is below the desired skill set established for that mission, we debrief the lessons learned and fly it again. This is the basis of how we take a 50-hour IP, and in 5 months is able to fly and lead any F-16 mission under the most difficult scenario ever seen. You can (and hopefully) execute the same philosophy in your squadron

within the training plan and syllabus. So, you're thinking "tell me something I don't know, Soak." Again, my point is that when I read or hear about flight mishaps in the CAF, I can attribute many of the findings to poor consideration of either flight lead or wingman's capable SA level for that mission. As a squadron commander and I will speak on behalf of the other squadron commanders, this is a huge frustration. Something that is so "basic" as flying within the SA boundaries of the flight is not always being done. Ever wonder why your leadership mandates a "back to basics" or more restrictive training rules after a major mishap? It's because the "confidence" of the unit training has been lost. There should never be a "back to basics" plan. If there is, you have failed as a squadron trainer. "Basic" flight skills and development should always be a part of every mission. If not, then you and your flight leads have failed. Your charge as the squadron weapons officer is to ensure your squadron training plan and syllabus is built on specific skill sets and made for training "success."

You might be thinking that "tactics are ORM." I wholeheartedly agree. There is not one mission at the weapons school that does not use or teach tactics directly out of AFTTP 3.1. These tactics have been tested, validated and, with proper execution within the training rules, have been proven safe. However, your role as the squadron weapons officer is more than spouting AFTTP 3.1 from memory and flying every 4 versus 4 DACT. You have the responsibility to both your squadron and your leadership to train within the limits and capability of the squadron. If you don't, you will be quickly labeled the "Nellis Cowboy" and hurt the "patch" for years to come. Let's not forget what the WS syllabus and "Nellis War" are designed to teach and the context within which they were taught. What we need to remember from the syllabus we executed (some having executed more than others) is that every essential employment skill for our Weapon System was taught for tactical problem solving and to give you the experience needed to develop and execute a training plan and syllabus within the capability of your squadron.

What we do for a living comes with inherent risk, both in aircrew and resources. Our leadership understands this and is willing to take that risk. It is required for national security. However, if we loose all our aircrew and aircraft to poor planning, instruction and execution then we've lost the war. We cannot go back to the 1970's when wing commanders were solely graded on their safety record versus combat capability, which drove them to minimal flying. You, as the squadron weapons officer, need to understand and apply appropriate risk mitigation to every training plan and syllabus you develop. It's the tactically smart thing to do. □

# OOPS TOPICS

**Editor's Note: The following accounts are from actual mishaps. They have been screened to prevent the release of privileged information.**

We have had a bunch of weather-related mishaps last year. So, as the summer thunderstorm season approaches, here are some cases where aircraft, Murphy and Mother Nature went head-to-head. As usual, she won.

## KC-135 Versus Lightning

Mission planning and pre-flight were normal, and takeoff, climbout, and level-off occurred without incident. The crew was in a descent, approximately 13,000 MSL, to rendezvous with their receiver and flew through severe icing, causing temporary loss of pitot-static instruments. The crew broke off their rendezvous, climbed to FL280 and regained pitot-static instruments. Being mission hackers, they attempted a second rendezvous since the receiver reported better weather in orbit at 11,000 MSL. Passing 12,000 feet, Mother Nature reached out and touched them with lightning that struck the nose of the aircraft and exited through the boom, which was extended approximately 10 feet. The crew then terminated air refueling and returned to base, landing without incident. After parking, maintenance found the IFF antenna, radome, and the Comm 3 antenna damaged. The navigator observed mostly

green, occasionally yellow radar returns during both rendezvous. The crew had discussed the second rendezvous and would not have attempted it for a training mission, but out of concern for their receiver's fuel state and combat mission, a second rendezvous was justified. Here a crew took the initiative to do some in-flight ORM and chose to continue to make the Air Force's mission. However, they ended up with a broken aircraft that was no longer fully mission capable. We will face these choices many times in our fight for freedom, so what will your choice be?

## Get-Home-Itis

Two days prior to the mishap this flight of six F-15Es and six additional F-15Es began redeployment. On the second day of the redeployment, tanker support was limited and allowed only the redeployment of the first set of aircraft. The remaining aircraft were delayed 24

hours, and told they would finish their redeployment on the next day. On the third day of the redeployment, the original flight plan was for the aircraft to fly direct to home station. However, Murphy came in and the tanker fell out, so the flight was told by the air operations squadron (AOS) representative there was only enough fuel available from the remaining tankers to get either the six aircraft to the East Coast or three all the way home. The second option would require three additional days in country before tanker support and an ALTRAV would be available to get the last three jets home. The decision was made to use the available tanker support and flight plan to get the six aircraft to the East Coast, and once there they would bed down for the evening and complete the last leg of their redeployment the next day. Additionally, the AOS representative made known the need for the movement control to be transferred from the AOS to the

home unit; otherwise the AOS would remain in control of the aircraft and aircrews the following day. Prior to departing the country, the flight lead relayed this information to home station leadership. The flight departed uneventfully on the second leg of their redeployment, expecting to remain overnight on the East Coast. En route, the flight lead received a message from home, and was told their crew duty day would not be extended, and they would have to spend the night. No new surprise here. The operations group commander accomplished the necessary paperwork with the AOS to take movement control of the flight once they landed.

The flight landed uneventfully after a 7.4-hour ocean-crossing flight, and the jets were prepared to remain overnight. During this time, the flight lead talked to their squadron commander over the telephone about the status of the jets, aircrew, and the weather between their location and home, and notified him the flight had been on duty 9.5 hours. The operations group commander learned of the extended crew duty day waiver to 14 hours that was approved at the base of departure, and assuming it was still valid, gave the flight permission to continue home the same day, contingent upon the flight having suitable weather and the ability to complete the mission before the end of their 14-hour crew duty day. Mother Nature started to intervene as lightning within five miles was declared, rain showers passed overhead, and all refueling and airfield operations were suspended for 20 minutes. After the weather cleared, the jets were readied for the last leg of the redeployment.

At 12.5 hours into their crew duty day, the flight took off on the last leg of the redeployment. Shortly after takeoff, the flight encountered thunderstorms while on vectors at 12,000 feet, with the aircraft in 2 NM trail.

The flight lead guided the flight between the first set of thunderstorm cells, and as they neared the last set of cells, the number five aircraft experienced a stuck mike. Murphy just showed up! As a result, the flight lead was unable to talk to the ATC center. Due to a perceived high-traffic situation, the flight lead decided it was better to enter the thunderstorm than to risk deviating without center's knowledge and permission. The rest of the flight followed lead through the thunderstorm, where five of the six aircraft received damage from hail. After exiting the cell, No. 5's radio cleared. Murphy's job was done. A battle damage check was conducted and they completed the remainder of the sortie to home base without further incident.

Here we have an aircrew aware of thunderstorms in their possible route of flight, and elected to take off. Even though they had the right idea, Mother Nature teamed with Murphy to ruin their day and some high-priced aircraft. Where do you see the opportunities to prevent this mishap? Could leadership have prevented this, or was this all the responsibility of the flight itself?

### We Can Thread The Needle

A C-130 departed on the second day of a special assignment airlift mission (SAAM). The navigator received a weather package and telephone weather briefing from the weather shop detailing the conditions for the first leg of the mission. An area of general 1-2 percent isolated thunderstorms covered the majority of the flight areas. Departure and arrival conditions were forecast to be VFR and the APN-59 radar checked out operative during the preflight. The first three hours of the flight were uneventful with predominately VMC conditions at FL190 (no weather was painted on the APN-59, nor were deviations

made from the route of flight). The APN-59 was placed in the STBY mode for the majority of the flight.

T.O. 1C-130E(H)-1 states that the radar should be placed in STDBY when not being used for navigation or weather avoidance. A broken, occasionally overcast cloud layer existed approximately 1000 feet below the aircraft, and the crew visually detected clouds ahead above the overcast layer. The clouds appeared wispy and cirrus in nature. The Nav placed the APN-59 radar from STBY mode into the search mode (50-mile range) to try to acquire a weather return associated with the clouds ahead, and painted a cell off the left side of the aircraft but received no returns in their flight path. The Nav then returned the APN-59 radar to the STBY mode. Approximately five minutes after the Nav placed the radar back to STBY, the turbulence and rain increased in intensity. The Nav returned the radar to search mode and was still unable to acquire a weather return. Approximately 30 seconds after entering IMC, the aircraft encountered severe hail and turbulence. The turbulence and hail lasted for approximately 30 seconds. The aircraft exited the clouds and returned to VMC conditions until they began the en route descent. Upon beginning the descent, the aircraft penetrated a broken cloud layer and landed uneventfully. The post-flight aircraft inspection detected hail damage to various sections of the aircraft.

Here is another example when the plan was good, but the aircraft landed with a skin disease and non-mission capable. We fly all over the world, in all kinds of weather, but we must ensure that we take every precaution against these preventable mishaps. What do you think this crew could have done differently that would have prevented them from flying through a hailstorm? 

# maintenance matters

**Editor's Note:** The following accounts are from actual mishaps. They have been screened to prevent the release of privileged information.



Something different for your review this month. I want to highlight some flightline errors that caused damage to our people. Not big things, unless you call broken bones and hospital trips big things!

## **My Eyes! My Eyes!**

A worker was washing a B-52 and inadvertently splashed a mixture of water and aircraft washing solvent (Penair C-5575, Mil PRF-85570, type V) onto his face. He continued to work without wiping away the splashed chemical mixture and it seeped between his skin and the goggles, entering both of his eyes. Anyone who has washed an aircraft can relate to this problem. When it started to irritate him, he dashed to the self-contained emergency eye-wash unit and flushed his eyes with water for approximately 15 minutes. He then required transport to the emergency room for treatment of chemical irritation to both of his eyes. After several IV eyewashes, his vision continued to get worse and he was then medevaced for specialized medical treatment where he was hospitalized. Luckily, he returned to work with no permanent vision damage. Another routine aircraft wash that cost US a bunch of extra time and money. Even though this crew was using all the right PPE, it still happened. When you get chemicals on your body, head for the eye wash and rinse station immediately!

## **Mid-Section Crash Diet!**

A worker was pinned at his mid-section between an empty munitions handling unit (MHU) trailer and a concrete frame of an overhead bay door to an integrated maintenance facility (IMF). The line delivery shop had just transitioned to 12-hour shifts, and the worker and spotter were dispatched to tow the trailer into the IMF, without supervision. The task "had" to be completed before the workers could leave at the end of shift. The trailer had to be towed by an MB-4 tug instead of pushed, because the tug has no air brake line attachment points in front. To start, the worker was the first driver of the tug and he noticed there was a 10k forklift parked in the middle of the bay where he was trying to back the trailer. He attempted to start the forklift to drive it out of the way, but there was no key in the ignition. Realizing he could not start the forklift, he decided to reroute the tug and trailer into the next bay. After several attempts to back up the trailer, the worker became frustrated with not being able to align the tug and trailer with

the bay door. At this point, another person entered the bay and was asked to help. Being a team player, and with the shift ending, he did not hesitate. This change in operators resulted in the worker becoming a second spotter, which should have raised thoughts of safety.

The spotter was positioned at the rear center of the tug and trailer, while the worker was on the left side of the approaching trailer. The worker decided to reposition himself outside the IMF, as he believed this would provide a better view of the clearance between the tug and trailer and the concrete pillar. The helper was backing the tug and trailer at the same time the worker tried (key word) to traverse the space between the concrete pillar and the trailer. He did not use any hand signals while attempting to reposition himself. The operator and spotter saw the worker step between the concrete pillar and the trailer, but failed to react. The worker saw the tug and trailer was moving at a slight angle toward him and tried to move out of the way, but unfortunately he felt the

trailer graze his mid-section, and it continued to press against him. He began to bang his hands up and down on the trailer until the spotter signaled and yelled for the operator to stop. The tug stopped and the helper drove the tug and trailer forward to release the pinned worker. The spotter checked on the worker and noticed he was injured, so he went to the office to notify supervision and call 911. The worker was transported via ambulance to the local hospital where they found his pelvis was fractured in *five* places. How many opportunities are there on the flightline in munitions, cargo handling, aircraft movement and vehicle traffic for another mishap like this to happen? Make sure your spotters know where they are and what to do and never get caught in a pinch.

### **Gravity Works! Again!**

A POL worker had been tasked to take a pickup truck with a modified bed for towing and pick up an R-14 mobile hydrant system for use on the flightline. He backed the truck up to the hydrant system and planned on using the truck's pintle hook. Easy job. Unknown to him, the area where the hydrant was parked was on a slight decline with a soft rock and sand surface. Once in position, he placed the gear selector into park (he thought) with the engine still running, but did not set the parking brake. He then stepped out of the truck and went to the back to hook up the hydrant system. In the few short minutes of standing behind the truck and working on hitching up the hydrant, gravity took over and the truck rolled backward. Sensing the truck's movement, he attempted to get out of the way, but the mirror on the passenger side blocked him from being able to maneuver out of the way fast enough. His left leg was then pinned between the vehicles and he could not break

free. At this time his on-board PA system (he yelled real loud) kicked in and other personnel heard his call for help. They proceeded to his rescue and moved the truck away, freeing him from gravity's clutches. The other workers say they found the gear selector in reverse when they reached the cab of the truck. Luckily, the worker only fractured his left lower leg. When you park the car, are you sure the vehicle is in park? I bet this POL driver will from now on.

### **Horseplay Versus Airmen; Horseplay Wins!**

Two workers (Joker 1 and 2) were in a tent getting ready for lunch. Joker 1 was joking with two other coworkers and looked at Joker 2 as if to say something. Joker 2 asked, "What?" and Joker 1 replied in a joking manner, "I'll do it to you, too." Joker 2 walked over to confront Joker 1 in a joking manner. The two jokers began to wrestle and they locked their left and right hands with each other and began moving them in a battle of strength. (Macho, Macho Man) Joker 2 broke his hands free and moved to pick up Joker 1 and lifted him off the ground, and as they moved, Joker 2 lost his balance. Joker 1 fell back and to his left and landed on his left side, hitting the left side of his head on the floor with Joker 2 falling on top of him. Joker 2 got up okay, but Joker 1 wasn't so lucky. He seemed dazed and did not get up very fast. He stated he felt nauseous. Joker 1 also had a cut on the left side of his head. First-aid was applied and Joker 1 was taken to the clinic for evaluation. Joker 1 had a concussion and cut from a nail in the tent's wooden floor. I wonder what the talk in the tent was about when Joker 1 was able to return to work. I bet it was about horseplay and how not to get chewed out!

### **Watch That First Step**

A flightline maintainer was

walking home from the flightline at a deployed location and fell into a 4 x 4 concrete communications manhole, resulting in injuries. At this deployed location, nighttime flight operations are conducted using night vision goggles (NVGs) due to a lack of taxiway and ramp lighting. This necessitates blacked-out operations along the flightline to prevent interference with the NVGs. Air Force communications and civil engineering personnel were constructing a concrete manhole to bury communication cables, and they located the manhole alongside one of the tents used to house the aircraft maintenance operations. The construction had been going on for over a month, and the forms had been removed and the surface surrounding the concrete had been leveled flush with the top of the manhole. This manhole was approximately four feet deep, but construction crews had failed to cover or barricade the manhole as required. In the unit's use of ORM, personnel are instructed during the newcomer's orientation to carry an NVG compatible flashlight with them at all times during the hours of darkness, due to the lack of external lighting. This maintainer was walking along the side of the tent in the dark without a flashlight when Murphy's Law kicked in and he found the manhole. Luckily, he only suffered minor injuries and some lost work time. In this case, the worker had only been at the deployed location eight days prior to the mishap, and even though he had attended the newcomers orientation he forgot his responsibilities. How about the responsibility of CE to protect their worksite and you? Why didn't someone notice the open manhole in the daylight and say something? Maybe because it was someone else's job? If you see a potential mishap take the steps needed to prevent the mishap. □



**GEORGE CLARK**  
HQ AFSC/JA

Line of duty (LOD) is one of those terms many Airmen think they understand, but don't. As safety professionals, you need to know the facts about LOD determinations and the impact they can have on Airmen.

Commanders and their safety advisors often brainstorm prevention tools, and it's not uncommon for LOD determinations to be the subject. These experienced Airmen sometimes arrive at interesting, if misinformed, conclusions—"Airmen would think twice if they had to pay for their own medical care." Perhaps you'd be well served to involve your servicing legal office in these brainstorming sessions.

But what the heck is an LOD determination? Bottom line—it's a decision whether or not several substantial benefits will be available if Airmen become ill or are injured. An LOD determination is required when injuries cause an Airman's inability to perform military duties for more than 24 hours.

If you want to know about the LOD, read AFI 36-2910, *Line of Duty (Misconduct) Determination*, 4 October 2002, for the story. Paragraph 1.1 states, "A service member who dies or sustains an illness, injury, or disease either while absent from duty, or due to his or her own misconduct, stands to lose substantial government benefits...[t]he LOD determination protects the interests of both the member and the United States Government." Active duty members, ARC members (on published orders, inactive duty, or traveling directly to or from duty), Academy cadets, and ROTC cadets performing military training are all subject to LOD determinations. The facts in each case are critical. The instruction lays it out.

Turn to paragraph 1.2. Several benefits can be affected by LOD determinations, including disability, retirement and severance pay, normal pay, the term of enlistment, veteran benefits, and survivor benefits. A member's entitlement to disability compensation from the Air Force may be lost or reduced if the disability occurred during a period of unauthorized absence or resulted from the member's own misconduct. And a member may not be entitled to pay if he or she was absent from regular duties for a continuous period of more than one

## ...WHAT IS IT?

day because of injury or disease that was directly caused by or immediately follows his or her intemperate use of drugs or alcohol. In other words, a determination that a member's injury during a DUI mishap was sustained due to his or her *intentional* misconduct or *willful* neglect, may lead to lost disability compensation or pay, and could extend an enlisted member's time in service [talk to your JAG about those *legal* words]. It is just not worth the gamble. Referring back to the misconception discussed earlier in the article, note that paragraph 1.3.2 states an adverse LOD determination does not authorize the United States to recoup the cost of medical care from an active duty member. But clearly an adverse LOD determination can have a significant impact.

Before brainstorming with the commander regarding private motor vehicle mishaps, be sure to read paragraph A5.6, Motor Vehicle Accidents. Every subparagraph has useful information on mishaps involving voluntary intoxication, the use of drugs, falling asleep, and using safety belts or helmets.

There is no "cookie cutter" approach to this important process. Every mishap involves unique facts and a substantial part of the LOD instruction describes an administrative process that helps ensure Airmen get a fair hearing. There is, for example, a presumption that an injury to an Airman in an active duty or IDT status is in the line of duty. That being said, I'd hate to be the 20-year-old Airman who drank several beers and, despite his friends' warnings, got on a motorcycle without a helmet or any other safety gear or a driver's license, and was clocked at 70 in a 25 zone before the mishap that spared his life but led to a lengthy hospital stay. Those facts aren't encouraging, and if the LOD determination is unfavorable the Airman's family could also suffer the consequences.

Try to give this topic some life if it's discussed at safety meetings. Face it, most Airmen do not often think of disability retirement and severance pay, veterans or survivors benefits. It might help to include training on the benefits available after serious injuries and which ones an adverse LOD determination can affect. Get the facts—read the instruction—talk with your JAG. □



**FY05 Flight Mishaps  
(Oct 04-Feb 05)**

**11 Class A Mishaps  
1 Fatality  
4 Aircraft Destroyed**

**FY04 Flight Mishaps  
(Oct 03-Feb 04)**

**11 Class A Mishaps  
5 Fatalities  
4 Aircraft Destroyed**

- 03 Oct** A C-5B sustained damage to 2 engines after multiple bird strikes.
- 04 Oct** Two F-15Cs collided in midair; both returned to base OK.
- 13 Oct \*** An MQ-1L experienced a hard landing.
- 18 Oct** An F-16C tire tread separated on takeoff; barrier was engaged and gear collapsed.
- 20 Oct ✈** An HH-60G crashed during a rescue mission; 1 fatality and 5 injuries.
- 27 Oct** A KC-10 had a #3 engine failure.
- 24 Nov \*** An MQ-1L crashed during an FCF.
- 30 Nov** A B-1B had an inflight fire in the aircraft equipment bay.
- 09 Dec** An HH-60G had a hard landing.
- 14 Dec \*** A B-1B nose gear collapsed after landing.
- 20 Dec ✈** An F/A-22 crashed immediately after takeoff.
- 29 Dec ✈** An MC-130H impacted a hole in the runway on landing.
- 18 Jan** A T-37B collided with a civilian aircraft; crew ejected OK.
- 22 Feb** An E-4B suffered a birdstrike.

*Editor's note: 09 Dec mishap was upgraded from Class B.*

- A Class A 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 crewmembers successfully ejected/egressed from their aircraft.
- Reflects only USAF military fatalities.
- "✈" Denotes a destroyed aircraft.
- "\*" Denotes a Class A mishap that is of the "non-rate producer" variety. Per AFI 91-204 criteria, only those mishaps categorized as "Flight Mishaps" are used in determining overall Flight Mishap Rates. Non-rate producers include the Class A "Flight-Related," "Flight-Unmanned Vehicle," and "Ground" mishaps that are shown here for information purposes.
- Flight and ground safety statistics are updated frequently and may be viewed at the following web address: <http://afsafety.af.mil/AFSC/RDBMS/Flight/stats/statspage.html>.
- **Current as of 28 Feb 05.**





*"I'm now at bingo fuel,  
the weather is crumpling, and  
I'm almost positive my nose tire is gone!"*

see page 18

