

# The Combat EDGE

August 2002



the combat edge august 2002

# The Combat EDGE

Volume 11 Issue 3, ACC SP 91-1

GENERAL HAL M. HORNBURG, COMMANDER

COLONEL KEVIN W. SMITH, CHIEF OF SAFETY

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*The Combat Edge* (ISSN 1063-8970) is published monthly by Air Combat Command, HQ ACC/SEM, 175 Sweeney Blvd, Langley AFB VA 23665-2700. Send address changes to the same address.

**DISTRIBUTION:** F. OPR: HQ ACC/SEM. Distribution is based on a ratio of one copy per 10 persons assigned. Air Force units should contact *The Combat Edge* staff to establish or change requirements.

**ANNUAL SUBSCRIPTIONS:** Available to non-DoD readers for \$47.00 (\$65.80 outside the U.S.) from the Superintendent of Documents, PO Box 371954, Pittsburgh PA 15250-7954. All subscription service correspondence should be directed to the Superintendent, not HQ ACC/SEM.

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Front Cover USAF photo



## MARGIN FOR SAFETY

When I started flying, I was taught to always leave myself an out ... to plan my attacks or execute maneuvers with an “escape window” or an adequate safety margin.

All too often today we tragically find that our ACC folks plan their itineraries or nighttime activities on too tight a schedule, allowing an inadequate amount of time or backup plan in case things don’t go as planned. That can result in a square corner.

Recently an ACC member and his family headed out PCS driving a U-Haul truck. Because they were on a tight itinerary and got delayed just a half a day due to a water pump problem, they felt they had to drive nearly 800 miles in bad weather the next day. They did not make it. The military member and his young daughter were killed; he was driving too fast for the conditions and struck a slow moving 18-wheel tractor-trailer.

Way too often the activities of our younger folks violates common sense. Frequently there has been an opportunity for a teammate to call “knock-it-off” ... but for some reason they did not. We need to continue to teach all our ACC members to put a “layer of insurance” on all their activities ... to leave themselves a way out if things don’t go as planned. Their lives may ultimately depend on it.

*Colonel Kevin W. Smith*  
*Chief of Safety*



Photo by SSGT Christopher Matthews

# C THAT WAS CLOSE!

By Maj Jonathan A. Holdaway, Riyadh, Saudi Arabia

What's the difference between experience and luck? I still remember one of my first instructor pilots telling us that we had all been issued with two bags when we walked in the gate at Laughlin AFB, Texas — one for luck (which was full) and the other for experience (which was empty). The goal, he told us, was to fill up the experience bag before we used up all the luck. Well, that was long ago, and after 15 years of flying fighters around the world, I figured that my experience bag was so full I would never need the bag of luck again. But one dark cold night a couple of months ago convinced me otherwise.

Our squadron was doing some night flying, and as one of the Night Vision Goggle (NVG) instructor pilots, I was scheduled to lead a young wingman on his NVG wingman certification ride. As I started the planning process,

Our working area was over the Atlantic Ocean, and I knew from experience that the coast would be easily visible. This meant we would have a good horizon and lots of contrast to help maintain our spatial orientation. Tactically, I planned the sortie as a 2 v 4 Defensive Counter-Air (DCA) scenario, and told the bandits to simulate MiG-29s and SU-24s. The briefing, start, taxi, and take-off were all uneventful, and at the fights-on call, I felt that everything was going according to plan. *This didn't last long.*

As the fight progressed, the bandits split into a three group champagne formation. My wingman did a good job targeting his group, but we ended up having to abort with one untargeted bandit chasing us down. My wingman was 7 miles behind me, I was spiked, and Ground Control Intercept (GCI) was calling out

... strict adherence to Training Rules and altitude blocks can save your life ...

I felt pretty confident that this would be a relatively benign sortie. My wingman was a strong pilot with a good reputation in the squadron, and the weather was forecast to be clear. It was a high illumination sortie with the moon approximately two-thirds full.

that the bandit was between the two of us, trying to chase me down.

Unfortunately, I was slow to recognize that my plan and Situational Awareness (SA) were rapidly going downhill. Remember the moon illumination? The high ambient light level was making it difficult to get a lot of information



from the NVGs. Since we were all running with reduced lighting, my ability to pick out the light sources from the background contrast was much lower than it is on a low illumination night, and the moon glow off the calm ocean underneath us made the NVGs nearly worthless at certain angles.

At that point, my wingman calls that he has tally on the bandit and is engaged. I assume the bandit has turned around to engage him, so I pitch back hot, gaining a tally on two lights that are slowly converging. I'm looking into the area of moon reflection off the water, so my ability to discern relative movement and range are worse than they are under normal NVG conditions. My visual perception tells me that the bandit is reacting to my wingman and, if I wait a couple of seconds, I'll have a shot opportunity.

Actually, the bandit was pointing at me (I'm still spiked, but I've dropped the Radar Warning Re-

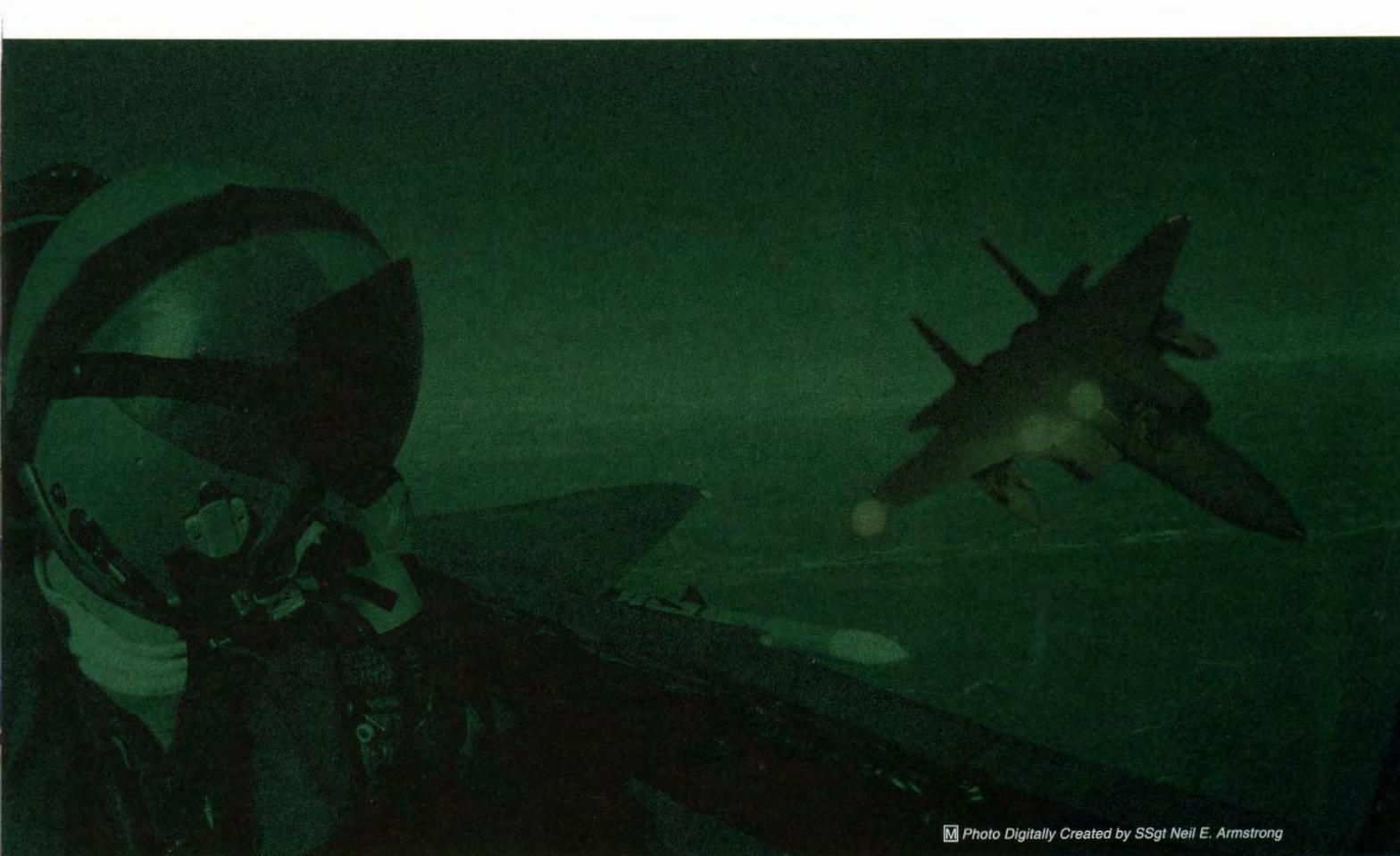


Photo Digitally Created by SSgt Neil E. Armstrong

ceiver (RWR) out of my cross-check). I am so convinced that the bandit has turned away from me. Even after I get a radar lock on the bandit, I assume it's a bad lock because it tells me that the bandit and I have a closure rate of over 900 knots and is showing me a break-X (i.e., too close for a missile shot).

The bandit, meanwhile, had bitten off on the same visual illusion. As my line of sight across his canopy decreased, he assumed that I had turned away from him. Instead, we were set up for a nearly perfect 180-degree pass. At the last second I realized what was happening, rolled right, and pulled up while inadvertently dropping a flare. I wish I hadn't, since I see another F-15C in the light of the flare — cranium-on and very close. We later figured that it was less than 200 feet. Less than 15 seconds elapsed from the start of my pitch back until the close pass.

We landed and did an extensive debrief, trying to figure out how we came so close to losing two Eagles that night. Several items were important enough to pass on.

It's critical to remember that the only thing that turns night into day is the sun. NVGs are a useful tool, but their usefulness varies considerably from night to night, based on the environmental conditions.

Additionally, bad SA is worse than no SA. Use all the resources available to you (radar, RWR, GCI, wingmen, etc.) to build SA. And unlike flying an instrument check, one NVG peek is not worth a thousand cross-checks. The lack of depth perception, with the associated lack of range data, can lead to dangerous visual illusions.

NVGs never killed anyone, except the person wearing them. The basic blocking and tackling skills of disciplined ra-

dar work, FLIR and LANTIRN sensor management, and electronic warfare are required to put ordnance on target. NVGs can help kill the enemy, but over-reliance on them can kill you.

Finally, strict adherence to Training Rules and altitude blocks can save your life. The in-flight pass in this story happened in the no-man's land between the two aircraft blocks. Had the aircraft maintained their blocks, there would have been a much wider and safer miss.

And there you have it. After 15 years, I thought I had this game pretty well figured out. I learned a lot that night, and hopefully my experience will make it possible for someone else to not have to reach into his bag of luck in a similar situation. ►

**Editor's Note:** This year ACC has already experienced two midairs due to aircrew not adhering to their assigned blocks.

# Chutes Packed by Professionals

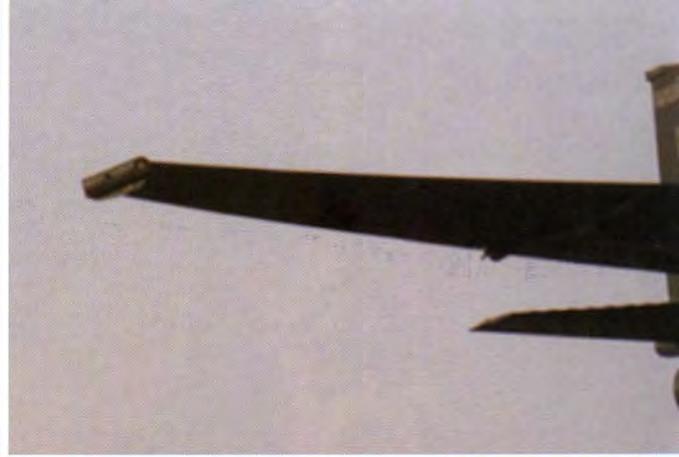
By 2Lt Adam T. Stiegelmeier and SSgt Royce K. McElroy, Beale AFB, Calif.



Each day thousands of pilots trust their lives to people they do not even know. This trust exists because we in the Air Force adhere to a strict set of procedures designed to protect the lives of all involved. When a pilot steps for a mission, little thought is given to who packed the parachute. Why? Because they are packed by professionals ...



Photo by TSgt Jack Braden



## The manuals must be followed precisely; any de

**T**he members of the 9th Maintenance Squadron's Survival Equipment Section provide an important service to the 9th Reconnaissance Wing day in and day out. These airmen pack a lot of parachutes and hope their equipment never has to be used.

A variety of life-saving devices travel through their section, including U-2 and T-38 personnel parachutes, U-2 and T-38 drogue chutes, one-man life rafts, and life preservers. The Survival Equipment shop is required to inspect, modify, repack, and repair all of these life-saving devices.

The critical nature of the equipment they work on requires strict technical guidance and painstaking attention to detail.

The Survival Equipment section uses technical manuals that thoroughly explain each inspection and packing process. For instance, to inspect and pack just one U-2 personnel parachute, Survival Equipment technicians refer to 161 pages of technical manual guidance. The manuals must be followed precisely; any deviation from their instructions could spell disaster.

"Packing a parachute takes longer than most people think," said MSgt Ray Conner, a veteran in the survival equipment career field. "You don't just open it and close it up again. There are numerous pull-checks and inspections you have to do."

"A pilot should have no second guessing," said A1C

Travis Roman, survival equipment apprentice. "When he's going up, he shouldn't have to be thinking about whether his equipment is going to work or not."

In addition to ensuring the safety of pilots, the Survival Equipment members also have to worry about their own safety while going about their daily work. For one thing, parachutes contain powerful explosives that operate their deployment mechanisms. The U-2 personnel parachute has a "drogue gun" that automatically fires once the pilot falls to 14,000 feet. The drogue gun literally shoots a slug into the air that pulls out the



## Deviation from their instructions could spell disaster.

parachute's ripcord pins, allowing the chute to open.

"The drogue gun is very powerful," said TSgt Collett, survival equipment custodian, "It could easily kill someone." That is why the section makes use of what they call the "two-man concept" when they inspect and replace drogue guns. Under the two-man concept, one individual does the hands-on maintenance, while the other individual reads the technical manual to ensure that no safety precautions are missed.

In addition to this, the technical manual mandates that no more than two people be in the immediate area while drogue gun maintenance is being conducted. The section utilizes a cypher lock on their door to

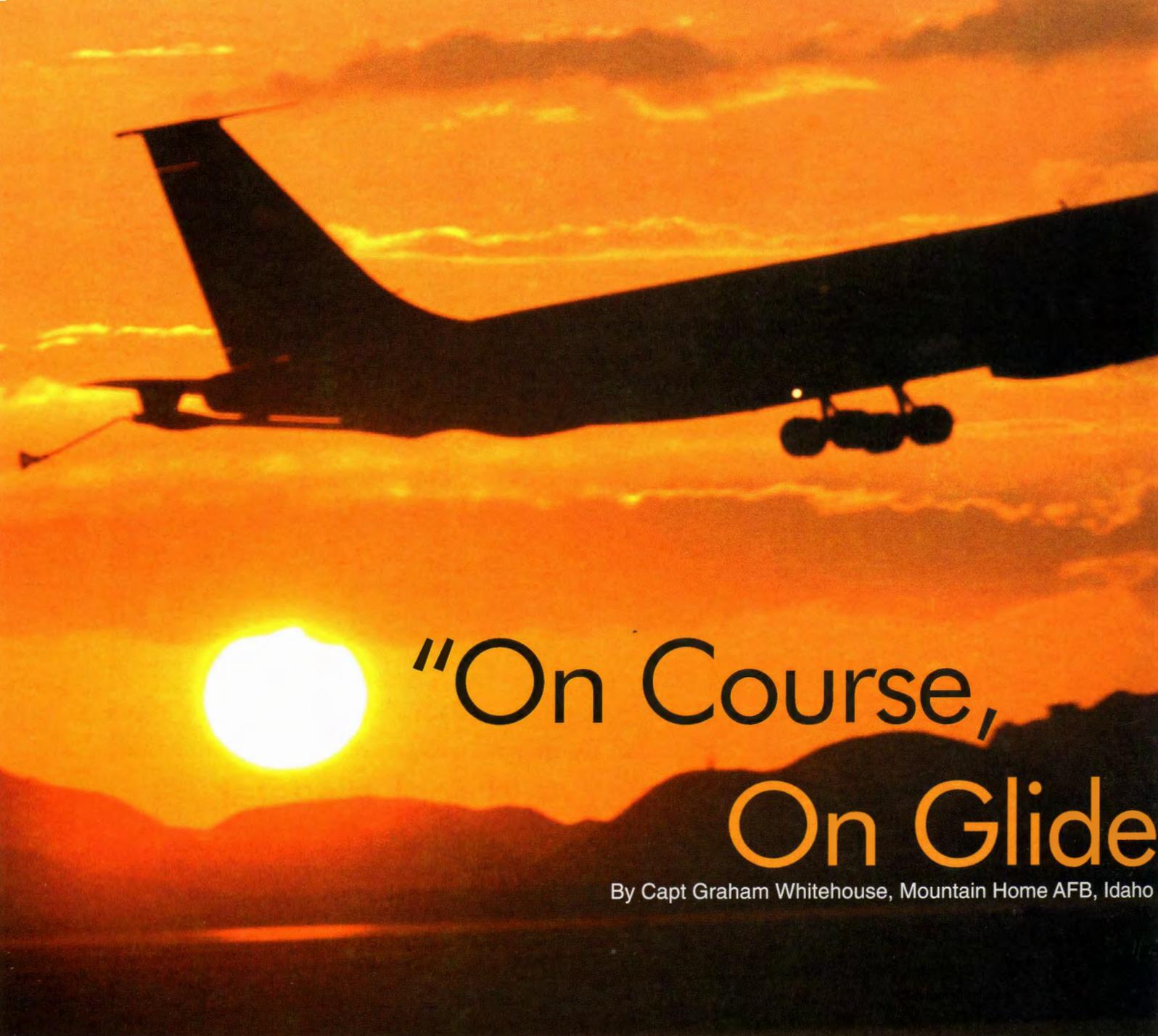
keep unsuspecting individuals from walking into a potentially dangerous situation.

Besides the drogue gun safety measures, the Survival Equipment shop exercises other precautions, such as wearing hard hats in their parachute drying tower. U-2 parachutes must hang for 24 hours before they are repacked to alleviate static electricity build-up. The parachutes are suspended in the tower by a series of pullies and ropes, and the hard hats are worn to preclude head injuries caused by falling objects.

The section also has several controls to ensure their job is done correctly. One of these is an "In Process Inspection" (IPI)

checklist. Each personnel parachute has a corresponding IPI checklist that identifies critical points in the packing process. At each of these critical points, the person packing the parachute must have another qualified 7-level verify he is completing all essential steps correctly before he can continue his work.

But according to TSgt Lance Morgan, Survival Equipment section chief, the best control the shop has is integrity. "Quality is an integrity issue," he said. "It means doing the right thing all the time without taking shortcuts." MSgt Conner summed it up this way, "If we save only one life for all the efforts we put forward, it was worth it. Pilots have families too." ►



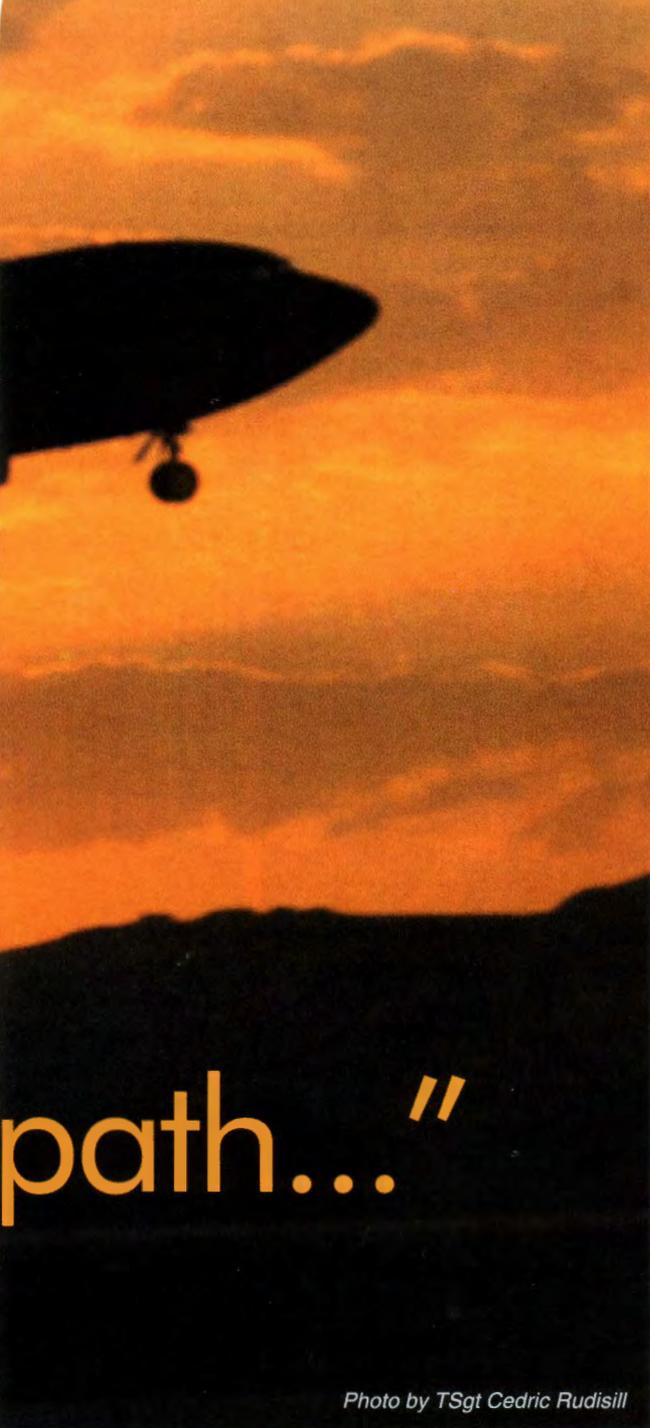
# "On Course, On Glide

By Capt Graham Whitehouse, Mountain Home AFB, Idaho

**M**y crew and I were recovering our KC-135 into Nellis AFB, Nev., after participating in a rather uneventful Red Flag sortie on the Red Air side. It was mid-afternoon, the skies were clear, the descent checklist was complete, and Nellis was landing on a runway that did not require an aggressive noise-abatement descent. The last of the fighters was just landing, and there

was only one other aircraft for us to be sequenced behind before I could do my planned visual straight-in to a full stop landing. I recognized the other plane's call sign, Hydra 37. It was a tanker from my squadron, which had been refueling Blue Air. There was going to be no problem matching speeds to deconflict the arrival. In short, a smooth end to a smooth sortie.

From an extended visual downwind, we picked up a vector for sequencing behind the other tanker. Around this time, Air Traffic Control (ATC) called to see if we could do a Precision Approach Radar (PAR) approach for them. Knowing how rarely Nellis grants instrument approaches, I figured they must be making the request for controller



# path..."

Photo by TSgt Cedric Rudisill

training. "Sure, we can do that," I replied. PARs are pretty hard to get these days. Anyway, the radar controller probably needed the practice. ATC set us for about a 15-mile base to final.

I configured the aircraft with gear down and flaps at 30 degrees, which is the intermediate setting we normally use until we put in full flaps at glideslope intercept. We got turned to final

of the runway, but I wasn't too concerned because the weather was totally clear, and I had the ground in sight.

"*On course, on glidepath*" continued to be the guidance we heard from the PAR controller. Still, it felt uncomfortable. I'd been slowly shallowing my descent, but we now looked really low, and we weren't any closer to the runway centerline than we had been a minute before. I

and performed the standard controller-aircrew communications ("*Do not acknowledge further transmissions, fly heading 203 ...*"). Before long, the controller instructed us to begin descent. This caught me a little off guard, but I chalked it up to my not having flown a PAR approach in ... how long had it been? Six months? A year? I called for full flaps and lowered the nose to pick up the glidepath.

It wasn't long before things started looking a bit strange. We were being told that we were "*on course, on glidepath,*" but it still didn't look right. The runway was abnormally far off to the left side — OK, I was cheating by looking out the window — and it seemed to me that we were low. I now saw 12 miles on the Distance Measuring Equipment (DME). I knew the terrain steeply rose off this end

decided to level off until we intercepted a more normal glidepath.

ATC again repeated, "*on course, on glidepath.*" How can that be? I looked at the DME (7.5 miles from the field) and the radio altimeter read 730 feet! — What am I doing that low? I looked out the window and there was now a small mountain between me and the right runway, although I could barely make out the approach end of the left runway.

At 700 feet above ground level, there were the controller's words yet again "*on course, on glidepath.*" I corrected towards the approach end and called the controller.

"We've been level for the last 3 miles or so, and you're calling us on the glidepath. I think you need to recalibrate your equipment. We'll take over visually from here." The controller acknowledged and handed us off to tower. As we lined up with the runway, we saw Hydra 37 on landing roll out. "Maybe the controller was looking at the wrong airplane on the scope," my copilot suggested.

A telephone call to radar approach control after we landed confirmed that this had indeed happened. The PAR controller had mistaken Hydra 37 for us, and since they were following the course and glidepath to the same runway (although on a visual approach), it looked like they were following the controller's instructions. The watch supervisor promised me he'd look into the situation and take whatever remedial action was necessary. It

was only then that the full gravity of the situation struck me: If we hadn't been in visual meteorological conditions, they could have vectored us right into the ground, and the PAR controller would not have known it was even happening until after our emer-

Manual 11-217V1, *Instrument Flight Procedures*, does not quite require a backup approach, it strongly suggests the use of one in case communications are lost. If I still wanted to avoid "cheating" on the PAR, I could have had the copilot monitor the instrument landing system.

those limits, I would have then transitioned to the backup approach, made the necessary corrections, and told the controller what I was doing.

**I didn't fully brief the approach when it was given to us.** Sure, it was clear and a million. Yes, I was familiar with the

## We were being told that we were "on course

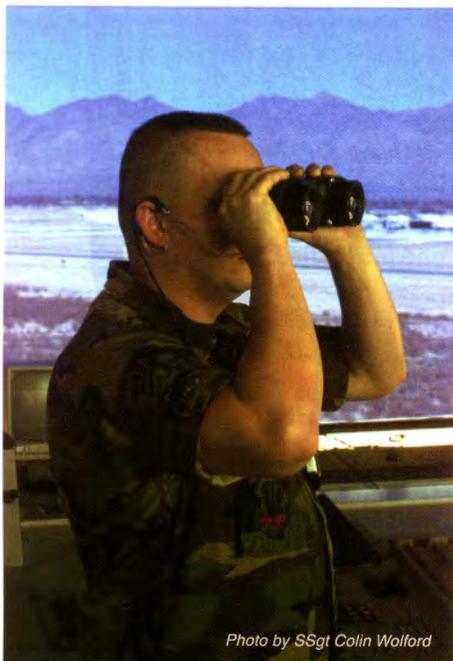


Photo by SSgt Colin Wolford



Photo by PH2 Jeffrey Viano



## The runway was abnormally far off to the left s

gency locator transmitter started going off.

I began reviewing the approach in my head and recognized a few things that I could have done differently that would have helped me to recognize the problem earlier:

**I didn't back up the PAR with another instrument approach.** Full-scale glideslope and/or course deflections would have been hard to ignore or write-off to poor controller proficiency. Besides, while Air Force

**I didn't set limits of what deviations I would accept ahead of time.** It's hard to quantify course and glidepath discrepancies visually, but once there's an instrument approach procedure to look at it becomes a lot easier. For example, limits like one dot to the left or right of course or below glidepath or no lower than the minimum descent altitude/step-down altitudes for non-precision approaches would have kept me out of trouble. Once I found myself approaching

airfield and the surrounding terrain. Both of these facts certainly kept me from flying the jet into the rocks, but habit patterns are what keep us alive when the weather's down to minimums and there's no room for error. By looking at the approach ahead of time, I could have figured out approximate altitudes and DMEs to use as targets. If I had done this, I would have recognized that the "begin descent" call was too early. Even if I had been flying to a radar-only airfield with no other

navigation aids or instrument approaches, I could have used the flight management system as a backup to maintain maximum situational awareness.

**I disregarded the warning signs I did have and was too willing to put my fate in the hands of the**

fact, I already knew that precision instrument approaches have to be aligned with the runway heading, and if they can't meet terrain clearance criteria then they just don't build a precision approach there. Finally, it was a clear sign that something had al-

Proximity Warning System (GPWS) would have clued us in early enough for us to recognize what was happening and go around. Nobody I know, though, ever wants to be in a position where they have to find out just how good that GPWS really is.

on glidepath," but it still didn't look right.



Photo by JOI Lon Cabot



Photo by TSgt Cedric Rudisill

side ... and it seemed to me that we were too low.

**PAR controller.** The first clue should have been that I wasn't prepared for the "begin descent" call. At the time, I thought I had just gotten behind the jet. My next clue should have been when it became obvious that we were neither on course nor on glidepath. Again, at the time I just figured the controller was out of practice or maybe this approach was designed differently because of the terrain off the approach end. In

ready gone wrong when we saw the mountain between the airfield and us.

It is true that a few other factors would have had to be present in order for our situation to have turned really serious. The most obvious one is if the weather had been down near minimums. In that case, perhaps ATC would have handled their sequencing and radar identification differently. Even if the weather had been poor, maybe our Ground

My crew and I came away from the experience with a new appreciation for the extent to which we routinely put our trust in other people outside the jet to do what's right for us. We also have a better sense of where and how we should place limits on that trust. In the future, I'll trust that people will do their jobs correctly, but I will also establish boundaries to remain within and have a plan for how to recover when those boundaries are exceeded. ►

# Are You Fit for Combat?

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

For those of us who have endured a G-induced Loss of Consciousness (GLOC), the experience might be described by the title of the Steppenwolf “classic” rock song, *Magic Carpet Ride*. One moment you are going about your business in a hard turn, and then, before you have your next coherent thought, “magically” almost 30 seconds of your life have vanished. What was different about this hard turn from all of the rest you have pulled before and after, you really have no idea. But now you know one thing for sure, your body and brain have finite limitations. And for reasons that can only be described as a mystery, your ability to tolerate Gs comes and goes even though the circumstances seem to be virtually identical.

While GLOC is a lot less critical to a bomber puke like myself when flying a heavy, it’s a subject near and dear to every high-performance fighter pilot and to those involved in training new pilots as well. Having just flown the T-37 as an Instructor Pilot (IP) at Sheppard AFB, Texas, I have a couple of thoughts that apply to flying fighters and trainers.

My first personal experience with GLOC came on my first advanced contact ride in Undergraduate Pilot Training (UPT) as a T-37 student pilot at Williams AFB, Ariz. It happened on my first split-S, being demo’ed by my IP. We met power and air-speed entry parameters, raised

the nose, rolled inverted, and started to pull. I was faithfully trying to squeeze the imaginary beach ball between my knees like I’d been taught in academics. To keep the nose tracking in a straight line, the IP said to look up for the horizon. As I focused my attention on obeying this instruction, I ceased concentrating on my anti-G strain effort. I remembered the nose of the jet being 90 degrees nose low, but the next sight picture I recall was wings level on the horizon. This was a rather disconcerting realization, albeit better than if I was still screaming directly at the ground.

Fifteen years after UPT, I experienced my second “magical” experience with GLOC.

I had just recently completed Pilot Instructor Training, when Air Education & Training Command decided to send all its new IPs through the centrifuge at Brooks AFB, Texas. I’d been flying the line, double-turning most days and occasionally “trip-turning” to meet all my continuation training requirements. One-go days were rare, and the schedule didn’t leave much time to hit the gym for a workout. At 38 years-old, 6 foot 2 inches, and 180 pounds, I am not what you would call a natural “G machine,” but still this was not going to be my first experience with Gs, and I thought I was ready.



But sure enough, during the 6.5 G run, I experienced what the centrifuge instructor mercifully deemed to be “significant” light loss (meaning total, from my recollection). The 20-something aged fellow IPs asked me what it was like. When I told them I remembered hearing loud rock music, they said I must have had a flashback to the “Born to Be Wild” 1960s. For me it was a flashback to UPT and the re-learning of the lesson that our bodies and brains have finite



limitations — a lesson applicable across all aviation communities. I also relearned that the best defense is a good offense, through the timely and properly executed Anti-G Straining Maneuver (AGSM). About an hour later, after a thorough debrief and re-education, I passed — versus passing out — without too much difficulty.

Over the years we've discovered several layers of defense against GLOCs. Consult your friendly

neighborhood aviation physiologist or flight surgeon for the latest AGSM approved techniques. To maximize the effectiveness of your AGSM, you also need to be in top physical shape. Dedicated, self-disciplined visits to the gym, multiple times a week, are required to attain and maintain both bulk muscle strength and aerobic/anaerobic endurance as you get older.

Proper fitting, pre-flight, and wear of your anti-G suit is another defense that may come to mind. However, basic ensembles offer little more than one extra G capability. Advanced systems offer better protection, but there's the old adage "you can't squeeze blood from a turnip."

Adequate hydration is a key to success since dehydration leads to overall reduction in blood volume and, by virtue of the first law of thermodynamics, lower blood pressure. So drink the right kind of fluids on a regular basis.

Fulfilling a variation of Sun Tzu's basic military dictum to "know yourself" can also be a great asset. Take your immediate state of health into account because sickness and fatigue can significantly affect your G tolerance. Also, some body

shapes/types offer an inherent or "natural" ability to better tolerate G forces. Short and stocky usually prevails over tall and

thin, and knowing your own resting G tolerance (remember the slow G onset profile in the centrifuge?) will help you to focus on how hard you need to strain.

Performing G "warm-up" maneuvers allows self-assessment of day-to-day physiological G tolerance and a test of your equipment. Pilots should realize that this limit is subject to minute-by-minute or even second-by-second cognitive impacts like distraction or prioritization. The limit may also decrease as the mission progresses due to physical tiring. The last engagement is the time of greatest risk for GLOC.

Finally, recognizing that survival in a high G environment is more in your head than anything else is vital. Dr. "Geff" McCarthy, Col, USAF, Ret., an aviation physiologist and psychologist believed in the philosophy: "You cannot max strain and max think simultaneously." In flight, when the "fights on" you are concurrently maneuvering, working the radar, employing weapons, and keeping the visual and tally on wingmen and bandits. The more you need to think about flying, the less you may be able to concentrate on your G strain. Training and experience will allow you to do both, but eventually everyone may become task saturated and mis-prioritization may occur. So keep your head in the game.

What's the moral of the story? You have a limit, everyone does, and each year GLOC kills pilots and destroys aircraft as a result. It's imperative to stay ahead of the Gs even before you step to fly, because once you're behind you won't catch up until you let off the back

**To maximize the effectiveness of your AGSM, you also need to be in top physical shape!**

stick pressure. Be prepared and try to remember to do all your "max thinking" before you have to do your "max straining" as you keep'em flying safely! ►



EC-130E



Primary Function: Tactical and intratheater airlift ● Contractor: Lockheed Martin Aeronautics Company ● Power Plant: C-130E: Four Allison T56-A-7 turboprops; 4,200 prop shaft horsepower  
Length: C-130E/H/J: 97 feet, 9 inches ● Height: 38 feet, 3 inches ● Wingspan: 132 feet, 7 inches  
Cargo Speed: C-130E: 345 mph/300 kts at 20,000 feet ● Ceiling: 33,000 feet with 45,000 pound payload ● Maximum Range with 35,000 pounds of Payload: C-130E, 1,968 miles ● Unit Cost: C-130E, \$11.9, (FY 1998 constant dollars in millions) ● Date Deployed: C-130E, Aug 1962

## Pilot Safety Award of Distinction

Capt Diane E. Vitas  
74th Fighter Squadron  
23rd Fighter Group, Pope AFB, N.C.

**W**hile her A-10 was passing 4,000 feet mean sea level during departure for a local night sortie, Capt Vitas noticed the left fuel flow gauge fluctuating plus/minus 500 pounds per hour and the left oil pressure gauge fluctuating plus/minus 15 to 20 pounds per square inch. Capt Vitas called "knock-it-off" and declared an emergency with Fayetteville Departure, who gave her flight an immediate vector back to Pope AFB, N.C. Capt Vitas cleared her wingman to chase, retarded her left throttle to idle, and performed her descent check. That is when she noticed that the right fuel flow gauge was reading zero and the left fuel flow was fluctuating and intermittently reading zero. Additionally, the left engine oil pressure continued to fluctuate out of lim-

its. Capt Vitas contacted the Supervisor of Flying (SOF) and relayed that she was planning on recovering via a straight-in approach using a single-engine configuration. The SOF read the single-engine landing checklist as the flight requested extended maneuvering airspace for the single-engine approach. The flight started the approach at 10 Nautical Miles (NM), but Capt Vitas got an unsafe nose gear indication when she started configuring at 8 NM. The flight did an immediate single-engine go-around and informed the SOF and tower. The tower reported seeing two good landing lights, which indicated that all landing gears were down and locked. As the flight reset for a second single-engine approach, Capt Vitas cleared her wingman to don his night vision goggles and rejoin to route formation to confirm the nose gear was down and locked. When her wingman reported that all three landing gears were down and locked and the tower again confirmed that both landing lights were illuminated, Capt Vitas landed, taxied, and shut down at the end of the runway. Capt Vitas' handling of these multiple night emergencies prevented the possible loss of a valuable combat aircraft.

## Ground Safety Award of Distinction

SrA Justin A. Caldeira  
366th Equipment Maintenance Squadron  
366th Wing, Mt. Home AFB, Idaho

**S**rA Justin Caldeira was performing an operational inspection check on a liquid cooling servicing cart in accordance with technical data. The unit was operating within required technical order parameters when an internal bearing seized on the cooling pump input power shaft. The excessive heat from the bearing quickly ignited the unit's 140 gallons of cooling oil. SrA Caldeira shut down the unit and extinguished the hydraulic fluid fire using a type B/C dry chemical extinguisher on-hand. He immediately implemented the squadron mishap checklist, notifying emergency personnel and squadron production supervision. SrA Caldeira's quick reaction saved the Air Force over \$112,000 in replacement costs for a new servicing cart.

## ACC Safety is Proud of All Our Award Nominees

Capt Andrew C. Caggiano  
Pilot  
421st Fighter Squadron  
388th Fighter Wing  
Hill AFB, Utah





## Aircrew Safety Award of Distinction

Shortly after initial takeoff, during a night sortie the crew of an RC-135 noticed small fluctuations in the oil pressure for the number one engine. As the copilot reduced engine power, the fluctuations stopped and there were no further abnormal indications. When the landing gear was lowered on the second approach, the nose gear indicator displayed an unsafe condition. The navigator, Maj Rick Moses, immediately checked circuit breakers and the alignment indicators for the nose gear, while the instructor pilot, Capt Rich Rosa, checked hydraulic quantities and pressures — all systems checked good. Capt Rosa recycled the gear twice while on final and got the same indicators. Capt Rosa planned to leave the gear down on the go around, but as they began the climbout, the number one engine oil pressure began to fluctuate violently accompanied by the low oil pressure light. Taking immediate action to eliminate unnecessary drag with thrust loss, Capt Rosa raised the landing gear and retarded the number one engine to idle once the gear had retracted. The aircraft leveled off at 3,000 feet above ground level and the crew requested a holding pattern. The engine now appeared to be operating normally in idle with the low oil pressure light out and no other abnormal indications. Capt Rosa elected to leave the engine running in idle and fly a three-engine approach

for a full stop following the resolution of the landing gear malfunction. While in holding, the crew again lowered the landing gear via the normal system and once again the nose gear failed to indicate down and locked. After completing the landing gear alternate extension checklist with the same indications, the crew decided to leave the nose gear down lock handle installed and pinned the nose gear down. They declared an in-flight emergency and flew a three-engine instrument landing system to a full stop. Maintenance later discovered faulty wiring in the nose wheel well as well as a missing oil cap for the number one engine.



Maj Rick Moses, Capts Rich Rosa and Oswald Medley, and Lt Christopher Papa, 388th Combat Training Squadron, 55th Wing, Offutt AFB, Neb.

## Flightline Safety Award of Distinction

An F-16 landed with engine faults indicating a high delta T-4B (turbine temperature). The fighter squadron engine technicians initiated the troubleshooting tree and placed the aircraft and engine on a watch status for five flights. MSgt Iseminger performed a follow-up review of these corrective actions and discovered that a borescope of the combustor had not been accomplished as the technical data directs. MSgt Iseminger immediately grounded the aircraft, which had just deployed in preparation for an off-station aerial demonstration, and directed the required inspection. The engine combustor was found to have severe heat dis-

tress with a 5- to 6-inch open crack. This meant the engine was in the beginning stages of a severe burn-through condition. Had MSgt Iseminger not taken action to ground his aircraft and directed follow-on maintenance, this condition may have had catastrophic results. If gone undetected for just one more flight, a jet engine, aircraft, and aircrew might have been destroyed and lost during an air show.



MSgt Anthony L. Iseminger  
388th Component  
Repair Squadron  
55th Wing  
Offutt AFB, Neb.

# Range Explosives Beware!!

By Mr. Larry Gallego, Jr., Holloman AFB, N.M.

How many of you have actually been to some type of explosives range? Did you have a job to do once on the range? Were you able to complete your task without incident? Did you know that it does not always turn out that way? Because people are motivated to accomplish the mission, some believe they can walk into posted “Keep Out” areas — either private property or government reservations — and not be at risk.

If that sounds incredible — read on. Recently, there was a near miss at a bombing range where three employees obtained range access to perform scheduled inspections. These three individuals attempted to contact the Range Control Officer (RCO), but were not able to so they proceeded onto the range. They had obtained verbal approval for their task days in advance; however, by not making contact with the RCO on that day, they put their own safety at risk. It is the RCO who knows the type, location, and duration of all operations — that is why he or she is the pri-

mary point of contact. RCO approval prior to entering the range is an absolute must.

On this particular day, an Explosives Ordnance Demolition (EOD) team was preparing to detonate several shape charges on a live 2,000-pound bomb that had not exploded one hot August 2001 summer day. As it turns out, three individuals unknowingly found themselves on the range driving dead straight towards the planned detonation. Fortunately, an alert EOD team member on the range noticed the moving vehicles in the distance and risked his life to save them by intercept-

ing their vehicles and guiding them away from the danger. Luckily, everyone escaped the explosion in time. Had the employees not been physically spotted and evacuated by the EOD team member, they could have been injured or killed.

Department of Defense (DoD) has hundreds of ranges. On each range, there are Unexploded Ordnance (UXOs). This is ammunition that hasn't exploded for whatever reason. Just because it did not explode when it

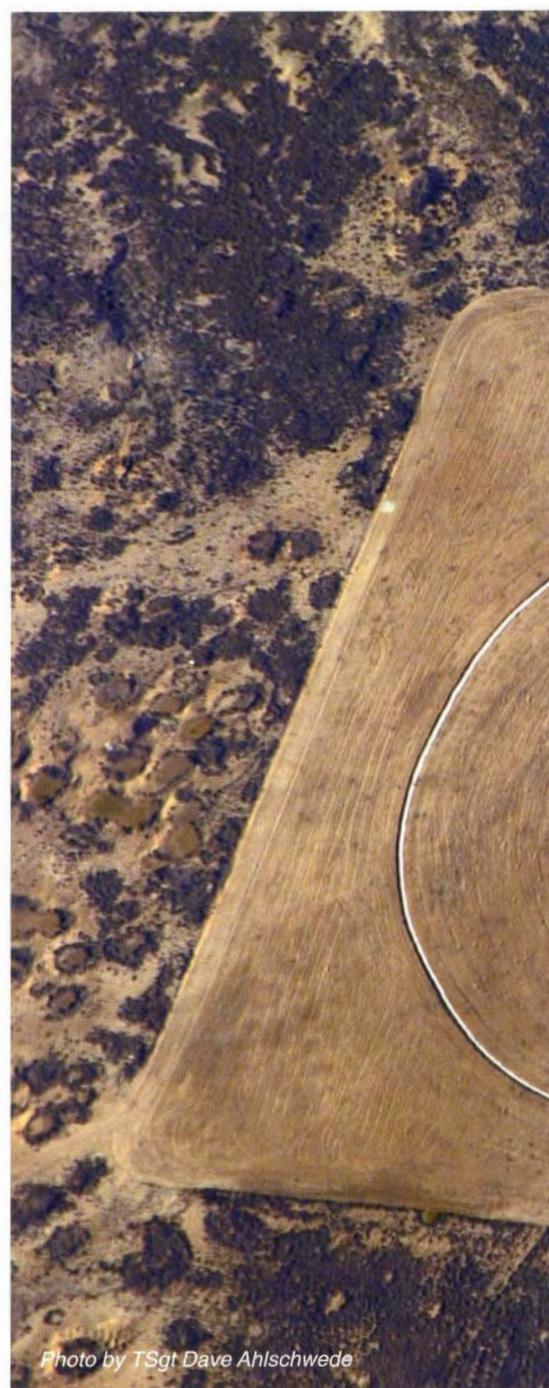


Photo by TSgt Dave Ahlschwede



Photo by PH1 Ted Banks

was suppose to does not mean that it won't or that it's safe. Safety professionals throughout the DoD community must do their part to help prevent incidents like this one from occurring. Whether you are a government employee, contractor employee, military, or civilian, you must do the following prior to entering any type of UXO range:

🔪 Contact range officials

🔪 Enter all UXO ranges through a designated Entry Control Point (ECP)

🔪 Ensure you sign in at the ECP

🔪 Ensure range control officials know where you will be and when you will leave the range

🔪 Maintain radio or cell phone communication

🔪 **Do not enter** if you cannot contact range control officials

If you ignore any one of these steps, it will matter little that you had the best of intentions. Once on the range, remember the three R's if you come across UXO items or anything you are not familiar with or unsure of: Recognize, Retreat, Report. ▶

# DUI Impact

By Capt David Small, Langley AFB, Va.

**Y**ou already read the headline. You already know drinking and driving is bad. But have you ever had a drunk driver slam into you?

No? It's a train that crashes through your living room, destroying your life.

Drinking and driving changed my friend. She physically lived through the accident, but a drunk driver killed her sister, Mo. While my friend Kelly watched, Mo's body was torn apart.

"I'm not that drunk." That's what Kelly said the guy driving the car said.

Kelly and three others were in two cars, one behind the other, at night on the shoulder of a major highway. They were home on leave in New Jersey for Christmas and had just picked up Mo from the airport. They needed two vehicles to carry the luggage.

Then it happened ... a flat tire.

Kelly's brother-in-law, Bob, was lying on the ground, jacking the truck up to change the

shoulder was a lane. He was too impaired to realize it wasn't. He was too impaired to see the cars parked on the shoulder in front of him.

"I'm not that drunk." But he was.

He slammed into the rear car, which pole-vaulted forward into the truck, landing on top of Bob and crushing Mo.

When you've been drinking, you may think you're not that drunk. You may think you have a high tolerance for alcohol. But the legal blood alcohol content level is there because alcohol affects your motor skills and reflex ability.

The drunk driver that slammed through Kelly and Mo's life didn't think he was drunk, but he was well above the limit.

He thought he was being responsible by taking a nap for an hour before driving. It is a farce to think a short rest will rid your body of the alcohol. Instead, he



## "The driver didn't have a backup plan ..."

killed a young, vibrant girl and ruined a close-knit family with his bad judgment.

He had been drinking at a fraternity party and was going home. He didn't want to leave

his car and have to go back the next day. He didn't have a plan.

When you go out and drink, have a designated driver. But what if you don't plan on drinking and do so anyway? Take a cab. Call a friend, or walk. But don't drive.

The inconvenience of having to get your car the next day is worth it compared to what could happen by driving home.

The drunk driver who killed Mo decided to drive. And after he drove, he lay bleeding in his



mangled car. Kelly got out of the truck and ran to her sister, whose body was limp — as if all her bones crushed on impact.

While Kelly held her sister, she saw a coconut shell, rocking on the pavement not far away. She looked at her sister's face, her features out of place. Then she realized the coconut shell was the back of Mo's skull.

For this accident, the drunk driver who killed Mo went to jail for manslaughter. He got caught. But so many people think they won't get caught —

quite possibly the worst excuse for drinking and driving because these people realize they shouldn't be driving in the first place.

Kelly was the one to tell her dad, who had rushed to the hospital after hearing there was an accident. "Mo's dead." It was all she could muster.

He inhaled deep, as if to fill the now hollow hole in his chest. His baby girl was gone.

I thank God I've never been directly involved in anything even close to this accident. But

for months after this accident, Kelly would talk to me about this horror, now burned forever in my head too.

Every time I drink now and think about driving, I can vividly see that coconut shell, rocking.

I can feel Mo's wilted body in my arms.

I can hear the sucking sound from her dad's chest.

And I don't drive home.

I plead with you to make the right decision too. Don't drink and drive. ►

# Staying Alive in the Desert

By MSgt Bryan Kasmenn, Cannon AFB, N.M.

**A** great thing about the outdoors of the Southwest, in addition to its beauty, is the vastness and solitude that can be found. With minimal driving and even less hiking, individuals can find themselves far from the hustle of civilization.

This is great for those of us who love the outdoors for whatever recreation we might enjoy, until something goes wrong.

Whether it's a flat tire, getting lost, a broken bike, an injury, or bad weather, any emergency may turn fun time into a life or death struggle for survival.

As a Survival, Evasion, Resistance, Escape (SERE) instructor for the Air Force, I have learned that in survival

Surviving the extremes of the desert just takes prioritizing and solving problems the environment and the situation present.

A survivor must know what immediate action steps to take, understand the importance of water, and have a strong will to survive.

If you find yourself lost in the desert, immediate action is needed. First, get out of the sun! Get under some shade. Stop and think. Conserve sweat, to store up your body's water.

Make sure the clothing you are wearing covers the entire body. Sleeves should be worn down and head should be covered. A scarf or T-shirt can be used to protect the neck.

against the sun's rays and the wind.

By minimizing activity, not talking, breathing through the nose, and properly using your clothing, you will not use up the water the body now has as fast.

Use this inactive time to plan, prioritize, and think out upcoming actions. Ask yourself: Do I need to signal? Does anyone know I am here? This is a good time to treat medical injuries, inventory equipment, and get more water. Wait for the cooler parts of the day, to actually accomplish anything physical outside the shelter

You must never waste energy; water is your life in the desert. In effect, ration your sweat, not your water!

To help retain the body's water a shelter is needed. Personal protection in any environment must be safe, protect you from that environment, and be big enough for you and your equipment.

**A survivor must know what immediate action steps to take, understand the importance of water, and have a strong will to survive ...**

it comes down to knowledge and the ability to apply it to the situation or simply: "know SERE, no fear."

Your clothing will hold the sweat against the body. This aids in helping to keep cool. Clothing will also protect





Photo by SSgt Jeremy T. Lock

Desert shelters must consider the extreme heat of the sun's rays, high winds, and, if possible, the cold of night. The roof of the shelter should be multi-layered. Each layer having 12 to 18 inches of dead air-space in-between, this will moderate inside temperatures. The same space should be considered from the top of your head to the closest layer of material when sitting in the shelter.

Shelter floors should be about 18 inches above or below the desert floor, this will always be cooler than the desert floor. Try never to sit or

lay directly on the desert floor. If trapped in your immediate action shelter by the sun, scrape the first inches of desert floor away from yourself and out of the shelter.

If possible use natural protection, but avoid animal inhabitants. Shelter sides should be movable (protection from high winds/cold night).

Large rocks will store heat during the day, so build day shelters away from rocks and take advantage of this at night, but be careful of life forms again.

Windward side of sand dunes may have a cooling breeze. Arroyos (dry river-

beds) can flash flood, so stay away; a sudden storm could turn your desert shelter into a house boat.

During World War II, a U.S. pilot was shot down over what is today the Saudi Arabian desert of Nefud. He survived for 5 days with only minimal water and a small survival kit. He had the additional stresses of evading the enemy and a broken leg. Even with all this, the pilot survived and evaded 22 miles to friendly forces. Remember, by using the knowledge of desert survival and having a strong will to survive — you will return. ►

# We Forgot to Use Our ORM

By MSgt Kevin D. McGill, Eielson AFB, Ala.

I tallied our accident reports from a recent squadron trip and found that we had one broken leg, one broken toe, one twisted ankle, one twisted knee, one choking incident, one possible frostbite, and three vehicle mishaps. Each mishap occurred while doing the things we do every single day: getting into trucks, getting into bed, playing basketball, eating lunch, using equipment, and driving.

made it look easy. However, before we tried to move that proverbial mountain, we identified the possible dangers and then closely scrutinized and minimized them. We did not approach the routine stuff the same way. We had broken bones, torn skin, and bent equipment doing the day-in and day-out things that we have all done a million times because we did not apply our daily ORM principles.



Photo by SSgt Reynaldo Ramon

It has been ingrained into us to use Operational Risk Management (ORM) principles whenever we are confronted with a new task or situation. We do this very well. We moved mountains on that trip and

All of us do jobs that entail varying degrees of risk. We need to take time now to review our Crisis Action Procedures, checklists, work cards, or whatever technical data or material that may apply. Revisit the well-es-

tablished ORM procedures that got us to where we are today, and make sure we are doing the routine things the right way.

If we are going to get our units back home with all the parts, pieces, and people we took, we need to actively look for Mr. Murphy. He is out there waiting for us to become complacent with our job. He is waiting for us to do the 7-minute launch because he knows that a gear pin will be missed or a missile cover will not be removed. He is waiting for us to be over our target on time, lined up for a perfect shack, and at release point, only to realize that we left our switches in the wrong positions. He knows that we are working long hours, doing the same old routine stuff, and that — at some point — we will all let our guards down and give him a chance to do his work. Don't let him!

This advice applies to home station and off-duty activities as well. Some of us may want to celebrate our tremendous mission accomplishments with a toast or two, so it is imperative that we look out for each other. We can't be afraid to tell our friends, coworkers, or even our boss, "Dude, turn out the lights. The party's over." That limit might come a little sooner than we may like, but you've got to trust your friends. When they drag you out kicking and screaming, they are doing their job to take care of you. All the great things we have done for our unit and country will be for naught if a coworker is carried home in handcuffs — or worse — a pine box!

Parting advice: Keep your head up and on the swivel; know the limits of your machine and yourself; and don't be a statistic. ▶

# Reflective Gear

By MSgt Kenneth Rice, Langley AFB, Va.

Accidents caused from not wearing or improperly wearing reflective gear are infrequent but still occur to Air Force personnel. In my 22 years, I have heard of several people being injured by motor vehicles because they were not wearing reflective gear. There was even an Air Force member run over while riding his bicycle on base because he could not be seen on a dark stretch of road. You can't afford to let your guard down — people get hurt.

As our operational tempo increases the potential for accidents also increases. During nighttime operations, unfamiliar working environments, inadequate lighting, dark maintenance coveralls, and inclement weather can also increase the risk of a mishap. It is critical that you not only

all the way around and sometimes requires the adjustment of coats, coveralls, rain gear, and personal items to ensure it remains visible. It should not be twisted because one side does not reflect light. It must always be in serviceable condition. After prolonged use and exposure to the sun, night belts become faded and difficult to see. A reflective belt does you absolutely no good, if it can't be seen. If it is unserviceable, replace it.

If you're in charge of a nighttime aircraft launch/recovery, a bright orange vest is

allows safe flightline operations.

All these instructions and suggestions seem pretty basic and easy to follow. You would not believe the number of individuals that I come across while driving the 1st Fighter Wing Flight Safety truck that have to be reminded of these simple facts. In poor lighting, it should

be something we do automatically each time we enter the flightline

or work areas. After all it's your life and well-being that's at stake. You don't want to become the statistic that everyone hears and reads about. I believe that's 15 minutes of fame you can live without. ►



Photo by TSgt Dave Ahlschwede

It is critical that you not only wear your reflective gear, but that you wear it properly ...

wear your reflective gear, but that you wear it properly.

A reflective night belt should be worn 360 degrees around your body, not just in the front or the back of your body. It must remain visible

also recommended. Pilots need to be able to identify who is in charge and be able to follow their exact instructions. A reflective vest provides increased visibility needed during aircraft marshalling that

# Services:

## *On the Job Hazards*

By MSgt Tom Kierstead, Lajes Field, Azores

**T**he food service environment is one filled with a wide assortment of potential safety hazards. Through ORM these dangers can be minimized, but the nature of the business makes it difficult to eliminate them. Often meal production is delayed by unforeseeable circumstances and to meet the opening deadline the staff must really hustle. The most frequently occurring safety hazards can be avoided if managers take steps to identify the hazards and teach their staff ways to prevent them. The following hazards seem to occur year after year and have the potential to seriously injure food service workers:

**Wet Floors.** This tops the list! Wet floors are a hazard inherent to food service operations; warning signs should be prominently displayed. This is

make the environment safer; however, the danger is still there, especially where there is unseen grease. The best course of action is to ensure floors are mopped only at non-peak times. When workers must mop during more hectic periods, they should spot mop and use signs. This topic should be a regular item in safety briefings!

**Snow And Ice.** Getting into the work place safely during the winter months is another challenge for the food service staff. Steel-toed boots, normally worn by food workers are stiff, especially in cold weather, and they make walking more difficult. Workers should walk with care and always be aware of where they are going to step. The chances of a slip or fall significantly increase when walking on ice or snow. Such a fall can result in serious

ent situations, and allow a few extra minutes to get to work.

**Steam Burns.** Steam can cause very serious burns! When using any type of steam-powered equipment, it's important to be aware of the operating procedures. New workers must receive in-depth, repetitive training from their direct supervisor before being allowed to use the equipment. Additionally, all seals should be frequently inspected to ensure they are working. Although steam-powered equipment is one of the best ways to prepare food, it can be dangerous if not used correctly.

**Lifting Injuries.** Unsafe lifting techniques are hazardous in an industrial workplace. In food service operations, it is a daily one. The entire staff should receive initial and annual refresher training in proper lifting techniques. As a reminder, it is important to use good posture and lift with your legs and not your back. Always ask for assistance to carry items you cannot comfortably carry by yourself—never

Every job has hazards. The best way to avoid them is to know what they are and how to prevent them.

a must, as is ensuring proper non-skid footwear is worn by employees. These two actions injuries and lead to chronic problems. Have a plan, use good judgment during inclem-





Photo by N. Miller



Photo by MSgt Val Gempis



Photo by Kevin Brody

be embarrassed to ask for help. Heeding this advice will help avoid painful, expensive, and long-term medical problems.

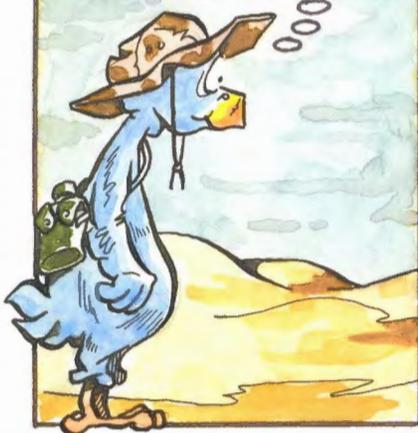
**Knife Injuries.** When used properly, the knife is one of the most simple and effective kitchen tools. Knives should be sharpened frequently as dull knives tend to slip from the object being cut more easily than a sharp knife. Never cut toward your fingers and hold items to be cut with hand cupped instead of the fingers out straight. A knife can't slice fingers that are not in the blade's cutting path!

**Meat Slicer Injuries.** Meat slicers are the single most dangerous piece of equipment in the kitchen. Over the years, they have injured many food service workers. Whether they are manual or automatic, it's important to follow correct procedures. All guards must be in place and properly locked. Operators must be proficient on all facets of the meat slicer, use all safety precautions, and constantly reminded never to rush to slice anything—no matter how hectic or harried the situation.

This list is far from all-inclusive. There are many more potential safety risks to consider and each facility will have different hazards and concerns. Incorporating these and others into your regular safety briefing is a must. The more knowledge you and your staff have about potential dangers and how to properly deal with them, the better chance you have of reducing injuries. Reducing the number of accidents and injuries creates a win-win situation for our people and our customers. ►

Fleagle

WHAT'S TH' BIG DEAL 'BOUT DESERT SURVIVAL?



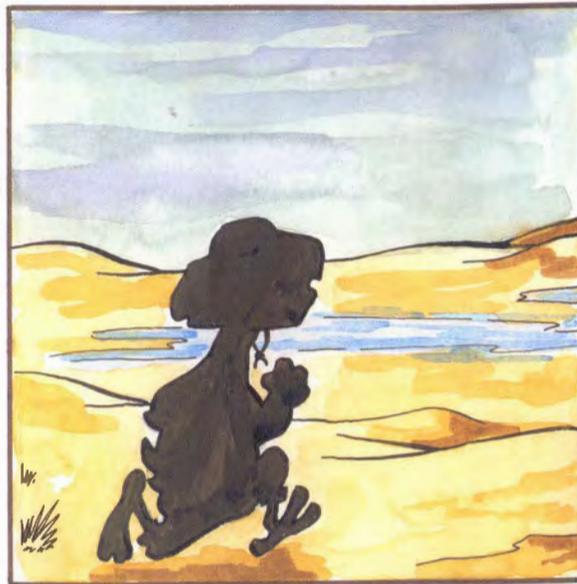
DRINK PLENTY OF WATER AN' YOU DON'T NOTICE ALL THIS HEAT.



GET LOTS OF REST IN TH' SHADE.



WHEN YOU WAKE, LOOK FOR A PLACE TO REPLENISH YOUR WATER SUPPLY.



I FOUND HIM ABOUT FIVE MILES OUT... AH...DRINKING A MIRAGE.



## FY02 Aircraft

As of July 1, 2002

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

## FY02 Ground

As of July 1, 2002

	Fatal	Class A	Class B	Class C
8 AF		8	2	82
9 AF		4	3	88
12 AF		7	0	164
DRU		3	1	26

## FY02 Weapons

As of July 1, 2002

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

### Legend

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

### Aircraft Notes

Despite definite trends towards a return to “normalcy,” operations tempo remains pretty high. On- and off-duty demands continue to pose training challenges to commanders and schedulers alike. Just remember ... maintaining “qualified” status does not guarantee proficiency. Return to “the basics” whenever you’re busy, behind, or overtasked. Checklists, technical orders, and Air Force instructions were written for a very important purpose — for the safe conduct of operations. Remain vigilant and let’s keep ‘em flyin’ safely.

### Ground Notes

Since last report, two more fatal mishaps have occurred, resulting in the deaths of four personnel. So far this year, there have been 35 motorcycle mishaps. This is one less than the same period last year; however, the five motorcycle fatalities this year represent a 400 percent increase over the one death during the same time frame in FY01. There have been 70 Private Motor Vehicle 4 wheel mishaps, which is a decrease of 12 from FY01. However, 12 have been Class A mishaps, resulting in 17 fatalities. In FY01, there were 5 Class A mishaps resulting in four fatalities and one permanent total disability. Everyone needs to help stop the loss of life.

### Weapons Notes

While the “101 Critical Days of Summer” campaign focuses on ground safety with an emphasis on avoiding recreational mishaps, we should also be cognizant that this is also a “critical” time to avoid weapons mishaps. Conducting weapons tasks during the summer significantly increases mishap potentials. When you get over exposed to the elements, the sun has a tendency to drain energy. This can cause personnel to lose focus and become complacent, possibly causing a MIS-HAP. Be aware of changes in your performance — this is the first step in helping you focus on the task at hand. Strive for zero mishaps.

### Symbols for Mishap Aircraft





Photo by SJA Walter Rodgers III



SSgt Ernest Jillson talks to other fire rescue members using a headset communications system while standing near an F-16CJ that has engaged the runway barrier during a certification test. The runway barrier is a final safety measure used to stop runaway aircraft by using a tailhook and barrier system.

