

# TAC Attack

FEBRUARY 1992



Bailey '92



## DEPARTMENT OF THE AIR FORCE

HEADQUARTERS TACTICAL AIR COMMAND  
LANGLEY AIR FORCE BASE VA 23665-5001

OFFICE OF THE COMMANDER

22 JAN 1992

Colonel Bodie Bodenheimer  
Chief of Safety  
Headquarters Tactical Air Command  
Langley AFB VA 23665-5563

Dear Colonel Bodenheimer

Your January '92 Special Edition of TAC Attack on weapons safety was extremely informative, interesting and entertaining. The quality of the magazine continues to improve since its inception over 31 years ago. I would like to commend you and the staff of TAC Attack under editor, Lt Col "Nellie" Beard, and Maj Jonny "JJ" Hepler, the HQ TAC Weapons Safety Division Chief, as well as all the contributors who made January's issue one of the best ever.

TAC Attack has inspired a culture of safety within TAC. The Gulf War highlighted the positive impact of our safety culture. I look to the contributors of TAC Attack to be the leaders who continually pass on ideas which improve our safety procedures throughout the command. You are at the forefront of instilling this safety culture in our command, and your role has never been more important.

The Special Edition issue was right on target -- providing an informative insight into the field of weapons safety and the key role that it played during the Gulf War. It embodies our style -- creating a working climate which inspires trust, teamwork, quality, and pride -- and creating a culture of continuous improvement. That style -- the TAC style -- will keep us on top and way ahead -- where we've always been and where we intend to stay.

That's TAC QUALITY in action. Keep it up.

Sincerely

A handwritten signature in dark ink, appearing to read "John M. Loh", is written over the typed name.

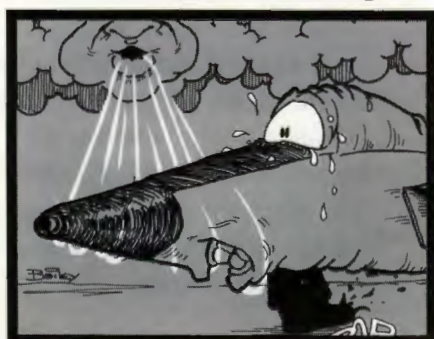
JOHN M. LOH  
General, USAF  
Commander

# TAC Attack

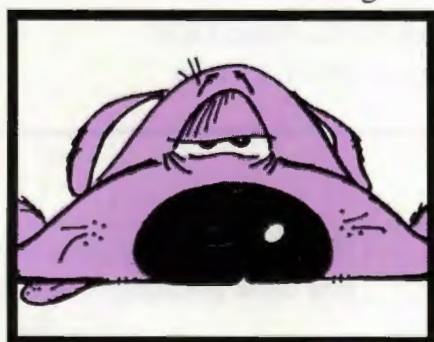
DEPARTMENT OF THE AIR FORCE



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TAC SP 127-1

VOLUME 32

ISSUE 2

FEBRUARY 1992

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Contributions are encouraged, as are comments and criticism. We reserve the right to edit all manuscripts for readability and good taste. Write the Editor, *TAC Attack*, HQ TAC/SET, Langley AFB, VA 23665-5563, or call DSN 574-3658.

Distribution F(X) is controlled by HQ TAC/SET through the PDO, based on a ratio of one copy per 10 persons assigned. Air Force units should contact their base PDO to

establish or change requirements. DoD units other than USAF have no fixed ratio; request will be considered individually.

Subscriptions for readers outside DoD are available for one year at \$17 domestic and \$20.25 outside U.S. from the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402. All non-DoD correspondence on subscription service should be directed to the Superintendent, not to HQ TAC/SET.

*TAC Attack* (ISSN 0494-3880) is published monthly by HQ TAC/SET, Langley AFB, VA 23665-5563.

Second-class postage paid at Hampton, Virginia, and additional mailing offices.

Postmaster: Send address changes to *TAC Attack*, HQ TAC/SET, Langley AFB, VA 23665-5563.



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# F-16 Ground Avoidance Cues

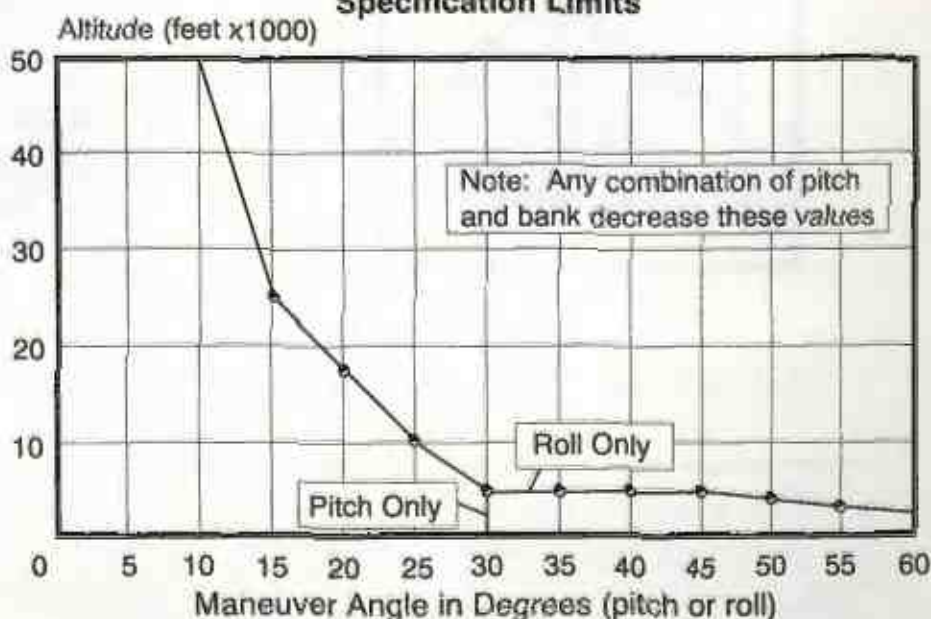
**Capt Doug Slocum**  
 310 FS, 58 FW  
 Luke AFB AZ

**T**he F-16 Block 40/42 aircraft offer some useful cues to help raise pilot awareness of altitude loss or unusual attitude situations. When properly set and used, these systems can help pilots maintain parameters and/or recover from unsafe attitudes. However, there are many system limitations and characteristics that are not common knowledge. To properly understand and use these systems, we need to look at three components: the radar

altimeter (RALT), the Mean Sea Level (MSL) floor warning, and the ground clearance and breakaway cues (ground avoidance advisory function).

Most of us understand the basic operation of the RALT. It provides an independent sensor of our actual height above the "nearest return" of terrain directly beneath our aircraft. The pitch and roll limitations are a little more fuzzy. The spec limits chart shows:

**RADAR ALTIMETER  
 Specification Limits**



Note: These values are the minimum specs.

---

**The RALT has some known problems. Combine these problems with the fact that the RALT doesn't look forward, just down, and you can see there are some limitations with this system.**

---

Highlights of this chart include: the pitch limits never exceed 30 degrees, the roll limits go up to 60 degrees when below 2,500 ft AGL, and combining pitch and roll reduces these limits further. Flight testing of the system has shown these limits to be minimums. The RALT often exceeds this performance. RALT accuracy is + 2 percent of your altitude when operating between 101 and 5,000 ft AGL. The altitude low warning (ALOW) function is simply a switch triggered by the RALT generated numbers. The voice "altitude, altitude" warning and a flashing HUD radar altitude window occur with no delay. This warning will not be triggered when the gear is down or your climb rate is greater than 1,200 feet per minute (FPM). Neither the visual or aural warning will occur if airspeed is less than 80 knots or if employing radio frequency run silent operations. In addition, the ALOW setting can inadvertently be reset to zero during EPU checks or EPU activation (see Dash 34 warning). The RALT receives power from the essential DC bus

which means both the main and standby generators must be off-line to interrupt power.

The RALT has some known problems. These include: 1) inaccurate readings associated with returns from nearby aircraft, 2) a documented problem with inlet tracking (the HUD window will show a constant 140 ft reading), and 3) a signal data converter latch-up where the RALT provides continuously bad data to the 1533 MUX bus (the HUD window can show any altitude, but it will not change). Combine these with the fact that the RALT doesn't look forward, just down, and you can see there are some limitations with this system.

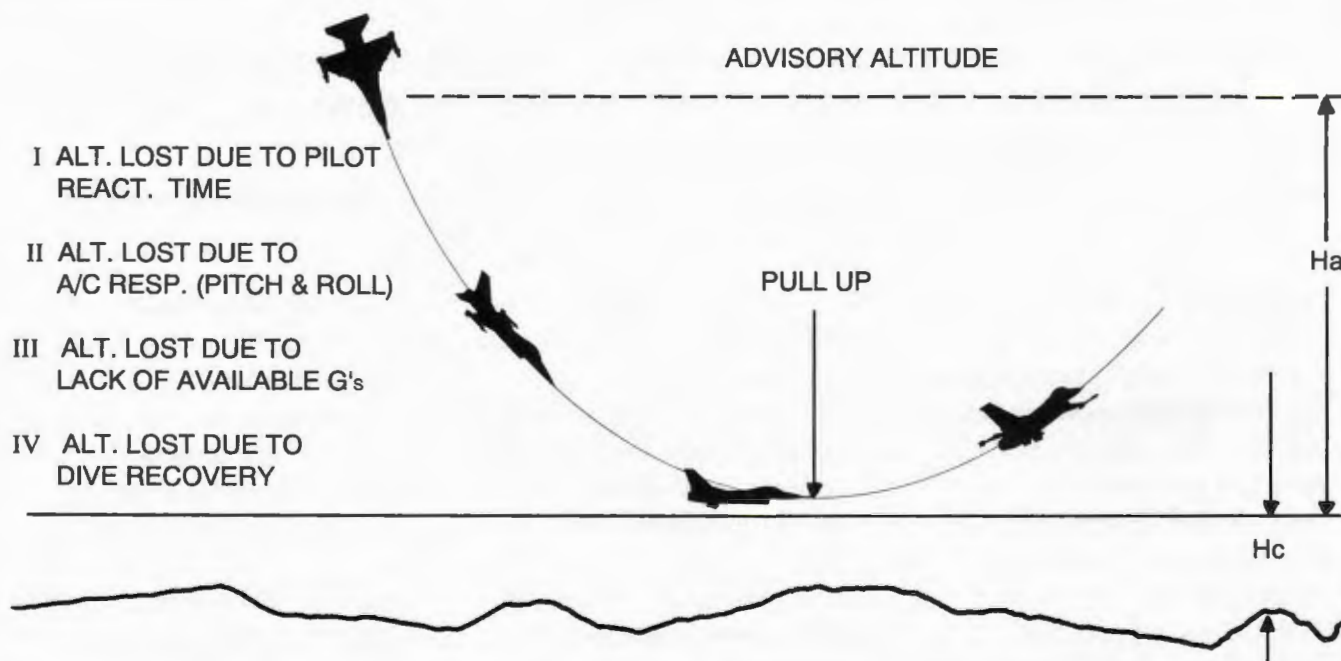
The MSL floor warning operates on barometric parameters as determined by INS improved CADC data. It will give you an aural message at any set altitude as you descend through it. The system relies on inputs from the INS, CADC and FCC, and will work unless you have an associated system degradation or failure. Since the FCC is powered through the nonessential AC

bus #1, the MSL floor warning will not function with main generator failure.

The last system is much more complex. The ground clearance and breakaway cues system accepts inputs from many sources and has some interesting operating characteristics. First of all, the system will not work unless the aircraft is descending at greater than 960 FPM and has valid inputs from either the RALT, FCR FTT, or FCR AGR. It is disabled with the gear down or when operating the LANTIRN TF. The FCC uses SMS data for aircraft configuration and INS flight attitude to compute pull-up cues with the following criteria:

- One second pilot reaction time (decreased if currently pulling Gs)
- Altitude loss due to aircraft roll response time
- Altitude loss due to lack of available Gs
- Altitude loss during the actual dive recovery (a function of weight, drag, calibrated airspeed and dive angle)
- Plus 12.5% of the above computations
- Plus a 50-foot pad

This is illustrated as:



$$\text{ADVISORY HEIGHT (Ha)} = \text{I} + \text{II} + \text{III} + \text{IV}$$

$$\text{CLEARANCE BUFFER (Hc)} = 12.5\% \text{ OF Ha} + 50 \text{ ft.}$$

INS sensed roll inputs further increase the warning altitude to allow recovery to a wings level altitude. Production tape 2 (OFF FP07B) includes a density altitude adjustment factor which increases the warning altitude when appropriate, it will never decrease it. Just to give you an idea, at 480 knots calibrated airspeed and 10 degrees of dive, you should receive a warning at 412 ft AGL. Assuming a 1 second pilot reaction (141 ft loss) and a 4 G recovery (182 ft loss), you should clear the ground by 89 ft. The FCC computations contain a 0.5 second sensor data filter lag (70 ft loss) which narrows ground

clearance to 19 ft. The Dash 34 warns that this delay may prevent sufficient warning for recovery. Production tape 3 (late 1991) will eliminate the sensor data filter lag.

The system's hierarchy of sensor inputs starts with the RALT. It will always use the RALT if valid information is available. Second input comes from the FCR data derived from FTT, either from GM or GMT (or LANTIRN TGP when we get it). Tertiary input source is air-to-ground ranging (CCIP or HUD fix). Production tape 3 will move RALT to tertiary. The mechanization now assumes level ground with readings based

on terrain under your aircraft (RALT primary), not looking out in front, this could make a big difference when CCIP bombing on uneven terrain. The FCC also will not accept any associated inputs when the INS shows pitch/roll limits greater than 40/60 degrees when or if data is available from the sensors.

The warnings associated with the ground avoidance advisory function cues include "Break X" in the MFDs two seconds prior to the computed point, and then "Break X" in the HUD and an aural "pull-up" (X4) when the point is reached. The aural "pull-up" cue has priority over

all other voice messages. It is possible to deactivate the ground avoidance advisory function after some LANTIRN TF flights. This situation is discussed in the Dash 34.

The ground avoidance advisory function cues also require many different aircraft components to operate. The ground avoidance advisory

system works in all master modes as long as RALT information is available.

Without the RALT, you must be in air-to-ground (AGR, FTT, or TCP track) in order to provide the system with an appropriate sensor. Any aircraft electrical degradation will drop a key component and disable the ground avoidance advisory

function.

These sensors provide some important capabilities to alert the pilot to potentially dangerous situations, but don't let this limited avionics assistance distract you from pilot responsibility #1; don't hit the rocks! Understand the systems, use them wisely, and fly safely.

## DOWN TO EARTH



## Buckle Up Your Baby- It's The Law

Sgt Denise A. Wellman  
347 CS/XP  
Moody AFB GA

**D**o you love your child enough to protect him or her while riding in the car? Evidently some parents don't. Individuals have been observed driving on base and in the surrounding communities with their children

bouncing all over the car. Georgia, as well as all other states, has laws requiring small children (usually up to age 4) to ride in approved child safety seats, regardless of whether they're in the front or back seat.

Infants up to 20 pounds should be placed in an infant or convertible seat facing the rear of the vehicle. Toddlers up to four years or 40 pounds should use a convertible or toddler seat. Keep children in convertible or toddler seats as long as they will fit. When they have outgrown the convertible or toddler seat, use the rear lap/shoulder belt **ONLY IF** it fits properly. It should not cross the face or neck, but should fit properly across the child's hips. If no other type of restraint is available, use the lap belt positioned low on the hips and adjusted snugly.

Don't think an adult can safely hold a child. In a low speed (30 mph) crash, even a tiny 10-pound baby would be ripped from your arms with a force of 300 pounds and crushed between your body and the windshield or dash.

When shopping for a child restraint seat, make sure the seat has a label stating it has passed a dynamic test. It should also have clear instructions for installation. Look for an infant seat that faces backwards in a semireclined position. A toddler seat should have a 5-point harness or a "C" shaped shield. A free shopping guide is available from **The National Highway Traffic Safety Administration, NTS-13, 400 7th Street SW, Washington, DC 20590.**

So ask yourself, "Do I care enough to protect my child while riding in the car?" **Remember, your child's safety depends on YOU!**

# Aircrew of Distinction Award



Captain Ronald C. Skow, the aircraft commander of a 15 member crew, was flying an E-3 surveillance mission out of Howard AFB, Panama, when the quick reaction and the superior coordinated crew effort averted a potential catastrophic mishap. During the initial turn after takeoff, passing 2,000 feet, Master Sergeant Scott A. Olson, Flight Engineer, stated the number two utility hydraulic gauge dropped to zero pressure and the total quantity was also dropping. As Capt Skow and Sgt Olson started running checklists, First Lieutenant Anthony R. Harris, Copilot, skillfully maintained aircraft control and communication with Panama Center. Captain Charles P. Raupach, Navigator, quickly informed the mission crew of the situation and prepared the emergency message. About a minute later, while still climbing on the departure, the number one utility hydraulic pressure gauge and remaining quantity dropped to zero. Lt Harris flew to a holding point that Capt Raupach chose to avoid the

numerous thunderstorms in the area. Capt Raupach declared and passed the emergency message to Panama Center. Captain Charles E. Underwood, Air Surveillance officer, sitting in the cockpit observer's seat, helped monitor airspeed and

the last remaining hydraulic pump that the crew was depending on. Capt Skow informed the SOF of the situation as Sgt Olson carefully crosschecked emergency landing data. He determined the crew could make it as long



962 ACS  
Elmendorf AFB AL

as the runway remained dry. The SOF confirmed the aircrew's decision to manually lower the gear, dump fuel, and return to Howard ASAP since the thunderstorms were closing in on the field. As the nose gear was lowered by Sgt Olson, Technical Sergeant Rik E. Whitaker, Communications Technician, proceeded to the forward lower lobe of the aircraft to confirm the gear alignment stripes indicated a down and locked condition. As the main gear were cranked down, Master Sergeant Gary J. Bruce, Airborne Radar Technician, viewed the

alignment stripes through the floor in the aft of the aircraft and passed their condition to the flight deck. Fuel was dumped and the crew started their approach, picking their way through numerous thunderstorms. At 10 miles on final, the tower called the runway wet. The SOF quickly got on the radio, stated the first 2,000 feet was barely wet, the rest was dry, and to continue the approach. Capt Skow brought the aircraft to a safe stop straight ahead on the runway. The Fire Marshal ordered the aircraft evacuated. Capt Skow relayed the order

and Major Thomas M. Hayes, Mission Crew Commander, ensured the safe and timely evacuation of all personnel. Post-flight inspection revealed a B-nut swage had failed on the high pressure line coming out of the number two utility hydraulic pump. The exceptional airmanship and excellent crew coordination displayed by every member of this E-3 crew averted what easily could have been the first E-3 Class A mishap. The outstanding performance demonstrated by this crew earned them the TAC Aircrew of Distinction Award.

## NAME THAT MAGAZINE

**T**he disestablishment of TAC and the creation of Air Combat Command (ACC) will profoundly affect the *TAC Attack* magazine in the very near future. The May 92 issue will be the last one after more than thirty years of providing a wide range of safety information to TAC readers. June 92 will usher in a new Command, a new era, and a new magazine. We will continue with our objective to publish relevant, useful safety data, but in a broader scope of applications in order to service the expanded responsibilities of the Air Combat Command.

As we work to bring you, our readers, a fresh new approach and format, one of our major hurdles is what to name it. If you're thinking "ACC Attack," no way! Other than that, it's wide open. We're

offering you the chance to participate as we "brainstorm" to find a unique, yet professional title for the new ACC safety magazine.

Send your ideas in a letter to:

Editor, *TAC Attack* Magazine  
HQ TAC/SET  
Langley AFB VA 23665-5563

Please include your return address and your DSN or commercial phone number.

The magazine staff is working on an appropriate memento for the individual or group submitting the winning title, so give it your best shot. Good luck and FLY SAFE.

# BLACK THURSDAY

## LESSONS FROM

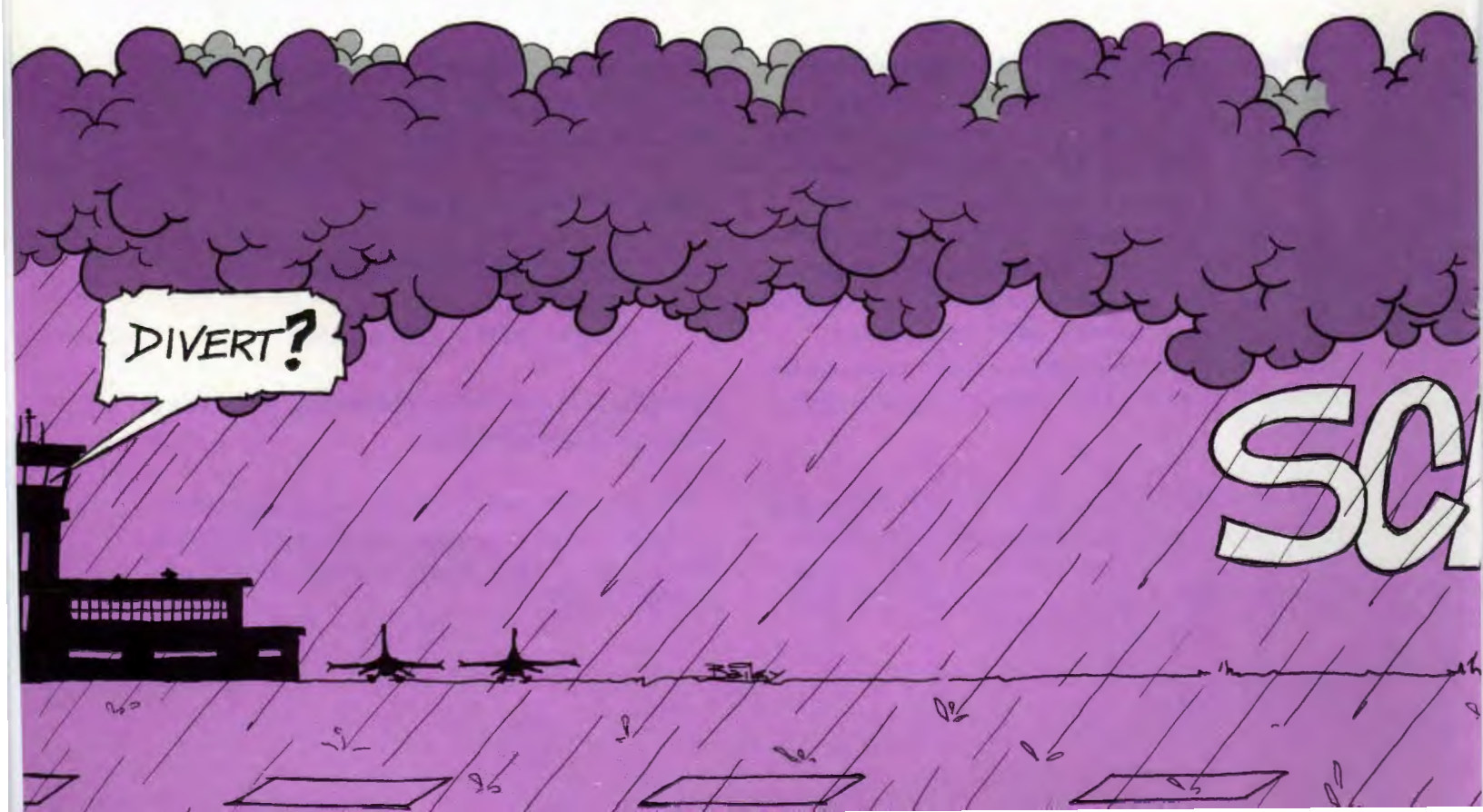
**Maj Roger L. Smith**  
13 TFS  
APO SF

We had a "Black Thursday" at our base recently. We didn't lose any pilots or planes, but we did gain a lot of gray hairs and found ourselves humbled yet again by Mother Nature. This is a story that happened in the relative isolation of an overseas base, but similar complications could replay themselves at your base. Whether you're a Supervisor of Flying (SOF), flight lead, or Blue 4 wingman, you can learn from our mistakes and

proficiency advance past the school of hard knocks.

The day began innocently enough. There are two squadrons in our wing, and one was deployed; so our squadron had lots of breathing room for a surge week. The opening SOF declared VFR bingos; and with the winds out of the west, we opened on Runway 28. The visibility was 4-5 miles due to haze, but the weather folks said it wouldn't get any worse; and, besides, the primary VFR divert

This was the second SOF tour for the oncoming SOF, so he was relatively inexperienced. As the change of command took place, rain showers were approaching the field from the west and visibility began dropping.



—10 miles to the west—was also forecast to stay VFR. Launch the fleet!

Shortly after the first four-ship took off, the next SOF came on duty. This was the second SOF tour for the oncoming SOF, so he was relatively inexperienced. As the change of command took place, rain showers were approaching the field from the west (the direction of our “VFR” alternate); and visibility began dropping. Since the only runway at our base was under repair and only 7500’ was available, a wet runway caused immediate concern. With the next two four-ships holding for takeoff, the SOF wisely decided to place the waiting aircraft on “weather hold” while he discussed the situation with the weather guru and the DO. Weather said the visibility was dropping a bit due to the approaching light showers, but would stay above

IFR minimums. Simultaneously, an aircraft in the four-ship that had taken off previously called in with an emergency. The SOF drew a deep breath and quickly analyzed the situation; “O.K., weather’s good enough, let’s get these two four-ships out of here so we can concentrate on the emergency—off weather hold!”

While the decision process was taking place, the already “maxed out” SOF missed a couple of other fast-breaking events. First, the winds were starting to shift to a tail wind for Runway 28 (Runway 10, the other runway, had no precision approach due to the runway construction). Second, the weather at the alternate went below IFR minimums from the same rain showers that were about to hit our base.

As the first four-ship came back to land, the rain showers hit. Of course, Mother Nature isn’t about to be harnessed by a

group of meteorologists, and the rain showers she produced were far from light—it was a downpour! The lowered RCR, tailwind, and shortened runway produced a triple whammy. The first aircraft stopped without the cable, barely. The second aircraft took the cable. It was time to change runways, but now the barrier crew was as busy as one-legged men in a butt-kicking contest. They not only had to release one aircraft from the cable, but they also had to reconfigure the barriers for the runway change. Through incredible effort, they accomplished both tasks in approximately 20 minutes!

Meanwhile, the SOF had weather recalled the other two four-ships and declared a new alternate—125 miles away. Combined with the two aircraft from the first four-ship, he now had to get 10 aircraft back on the deck, and the weather was



dropping quickly. Through a lot of confused guard transmissions, inner-flight communication, and excited foreign controller accents, there were question marks over every cockpit and a very large one over the tower. One lieutenant was put on a westerly vector and forgotten by a "maxed out" RAPCON controller.

Fortunately, the young pilot had the situational awareness to climb—when he had already flown into an area with a minimum vectoring altitude 2000' higher than his assigned altitude!

Finally, Runway 10 was opened. It was just in time, because several aircraft were reaching divert fuel—one had gotten the word late and was already at minimum fuel. The first pilot to land picked the field up at minimums, thought he had everything under control, but ended up skidding on the rain-slicked rubber deposits at the end of the runway and finally stopped in the overrun. The aircraft with minimum fuel and the next two aircraft with low fuel were immediately diverted to the original VFR divert field—the cludo SOF still didn't know it was below IFR minimums. After needless vectoring in the soup, one aircraft was then emergency fuel and the other two were at minimum fuel. The aircraft in the overrun taxied clear, and the three aircraft were then vectored back to our base.

Meanwhile, the SOF diverted all other aircraft—or he thought he had—to the more distant,

but suitable alternate. The lead of one four-ship knew his flight wasn't at divert fuel, so he directed them to stay in the radar pattern. The SOF didn't know this four-ship was still jamming the radar pattern, but the already "maxed out" RAPCON controllers sure did!

The emergency fuel aircraft finally landed, with weather at IFR minimums, by flying an emergency PAR that the SOF directed (though it wasn't a certified approach) and with enough fuel for about five more minutes of flying. By then, the other two aircraft were also at emergency fuel. Miraculously, they both landed on fumes—one of the pilots had his checklist already opened to "controlled bailout procedures!" The other airborne aircraft landed either at our base or the distant alternate relatively uneventfully.

What are the lessons here? There were a number of mistakes we can all learn from. First, the SOF shouldn't have used the nearby alternate field as an alternate under deteriorating weather conditions. He should also have realized his "VFR divert" field was in the same vicinity the troublesome weather was coming from and contacted them. Second, the SOF allowed himself to get into a square corner by hastily launching the last two four-ships into deteriorating weather and simultaneously recovering an emergency aircraft. One event alone can max out a SOF—both can make him a candidate for

the base shrink! Third, a SOF should always favor the conservative side when there's deteriorating weather coupled with major runway construction—you're facing two strikes and haven't even swung yet. Fourth, if you're landing a fighter on a rain slick runway, it's better to take the cable if there is any doubt about stopping—even if it does mean your min-fuel buddy behind you may have to go around one more time. Fifth, he should have immediately contacted the second and third four-ships he launched to advise them of the new alternate and bingos so they could loiter or RTB as appropriate. Sixth, if the SOF says divert, then divert. You've got to believe that he has the big picture and he knows when he, RAPCON, tower, the barrier crew, etc, are getting maxed out. You only complicate matters by hanging around. Finally, if you reach divert fuel, there is no "divert/not divert" decision matrix. The attitude of "No sweat, I'm next in line for the approach" or "I'm already on base" has bitten lots of pilots in the past. When you reach divert fuel, divert—then you can second-guess yourself later in a one-G bar with an RCR of 23!

There's nothing new or earth-shattering here, but there's lots of lessons for every fighter pilot to learn or re-learn. Hopefully, this discussion will help you foresee some of these predicaments and avoid a "Black Thursday" in your wing! Check six and fly safe!



# Crew Chief Safety Award



While performing duties on the F-16, midshift servicing crew Staff Sergeant Michael P. Boss discovered a chafing problem in access door 3308, the liquid oxygen (LOX) servicing compartment. Realizing the seriousness of the problem, he took it upon himself to investigate the cause of the chafing. He discovered the power distribution panel was chafing against the LOX converter vent cap. On several aircraft, this chafing had started showing evidence of wear. If this condition had gone undetected, there would have been the possibility of an electrical short from the power supply near or even against the LOX bottle. Because of Sgt Boss' attention to detail and initiative, he submitted an AF Form 1000 and TAC Form 22 to suggest a modification to correct the problem, potentially saving the Air Force hundreds of thousands of dollars in damaged equipment, much less the serious hazard involved. Sgt Boss is continuously foreign object damage (FOD)

conscientious. He is aware of the potential for damage and, therefore, always goes out of his way to remove foreign objects from his work areas. He recently noticed an important item missing from a LOX converter, the vent valve dust cap. To ensure no contaminants



**SSgt Michael P. Boss**  
388 AGS, 388 FW  
Hill AFB UT

entered the LOX system, he personally ensured all assigned aircraft had the proper safety item installed. During an aircraft towing operation, he was acting as tow team supervisor when the vehicle crossed a large section of ice and snow causing it to slide. Noting the potential hazard, he halted the tow operation until the vehicle could be fitted with chains, ensuring the completion of a safe tow job. Sgt Boss was assisting on a throttle cable installation when he noticed an incorrect safety wire installation. There had been a technical data change that had gone unnoticed until he discovered and corrected the defect. Although not specifically part of his duties at the time, he discovered a hydraulic leak coming from an aircraft brake. He took the initiative to correct the problem and ensure the brake was replaced prior to flight. Sgt Boss is a superior performer who shows pride and integrity in all he does. This performance earned him the TAC Crew Chief Safety Award.

I GOT TO COME UP  
WITH A UNIQUE VALENTINE  
FER DORIS THIS YEAR.



EACH YEAR SHE THINKS I'M SILLY  
OR I DON'T GIVE ENUFF OF MYSELF.



HARRISON

THAT'S IT.  
I'LL GIVE MYSELF.



DING



GOOD LORD!  
THERE'S SOMETHING  
ALIVE IN THERE!



HEH! HEH!

WHERE DID  
SHE GO?



SO MUCH FER  
TH' PERSONAL  
TOUCH.



©1994 HARRISON

# Outstanding Individual Safety Achievement Award

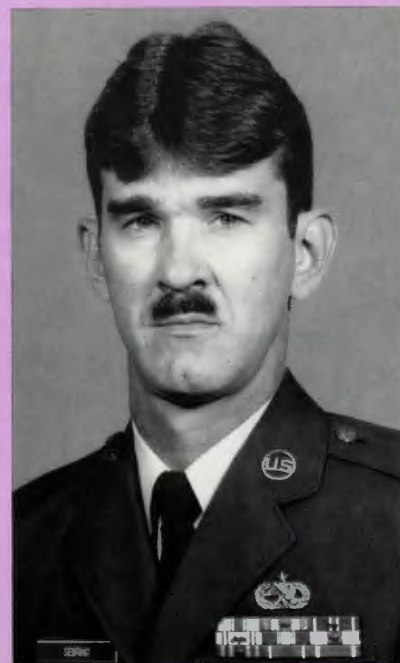
While an F-111D aircraft was undergoing a scheduled 150-hour major periodic inspection, Staff Sergeant Bradley L. Sebring identified a serious and potentially dangerous situation.



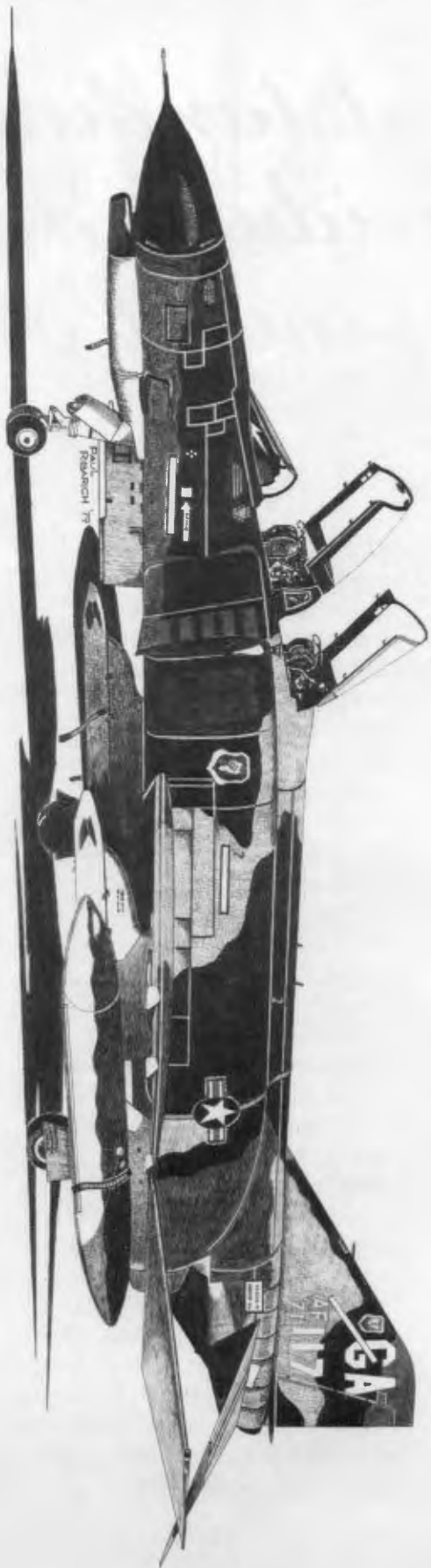
**TSgt Edward Tellez**  
27 EMS, 27 FW  
Cannon AFB NM

Extending his inspection criteria beyond normal requirements, he identified a chafing wire bundle under panel 3317. He tracked every wire in the bundle and identified an immediate safety of flight discrepancy. The wire bundle contained the wiring used to energize the engine fire extinguisher bottles during engine overheat, or fire conditions. Further investigation by Sgt Sebring, in conjunction with Quality Assurance Inspector, Technical Sergeant Edward Tellez determined that the fire bottles were inoperable. Sgts Sebring and Tellez inspected the other aircraft undergoing periodic inspection and found the same problem in all three. Together they "sounded the alarm," and a one-time inspection was initiated on the entire F-111D and F-111G fleets. Results—52 aircraft of 82 inspected required immediate attention for the same discrepancy. The mission dedication and personal initiative displayed by Sgt

Sebring and Sgt Tellez without question prevented the possible loss of aircraft, or even worse, loss of human life. Their actions earned them the TAC Outstanding Individual Safety Achievement Award.



**SSgt Bradley L. Sebring**  
27 EMS, 27 FW  
Cannon AFB NM



CENTER ART OF  
F-4E PHANTOM  
COURTESY OF  
LT COL PAUL RIBARICH



CENTER ART OF  
F-105G THUNDERCHIEF  
COURTESY OF  
LT COL PAUL RIBARICH



# SHAKE, RATTLE, & ROLL

**Capt Ron Evenson**  
**435 TS/AG**  
**Holloman AFB NM**

**T**here I was . . . sitting sideways on the runway with both main gear tires blown and my wingman off the runway in the dirt.

The flight had started out innocently enough as an AT-38B direct-support BFM

(basic fighter maneuvers) mission. I was leading the flight for a newly rated and soon-to-be fighter pilot. For traffic flow out of our base, we take off on a westerly runway and land on a southerly runway. Because of this, it seems you always have some cross-wind to deal with, but on this flight I got a deeper understanding of crosswind. The area work had gone fine,

and I was checking ATIS in preparation for the formation approach and landing I was going to lead. I noticed the wind direction had changed slightly; but, more importantly, a significant gust factor had developed. The steady-state wind was a variable right quarter at 12 knots, but the gusts were up to 27 knots. The crosswind limit for our jet with

# DONE THAT

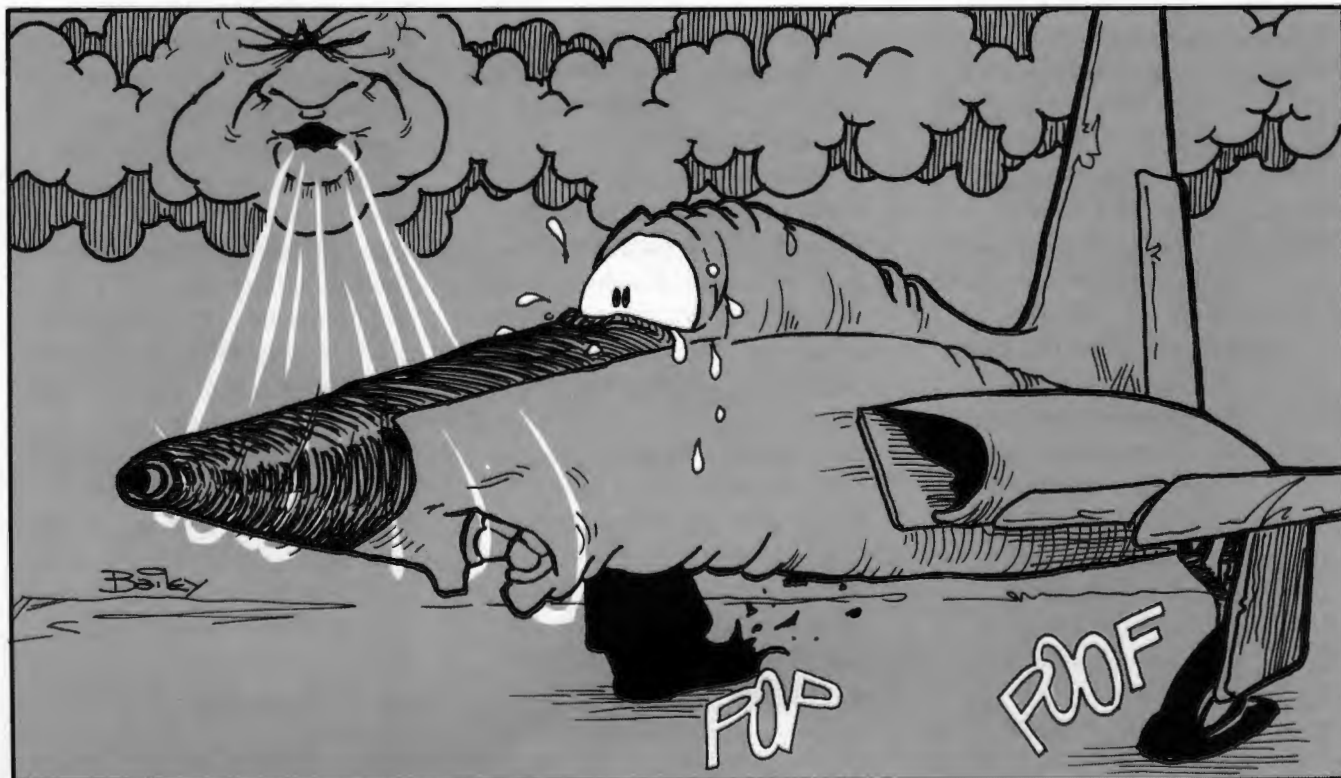
a dry runway is 30 knots single-ship and 15 knots for a formation landing. So, although the steady-state was within the wing formation limits, the gust took it out of limits.

Given these conditions, I decided to take the flight to initial. The closer we got to the field, the better I felt about the decision. I could see some virga associated with some buildups off the southwest corner of the field, about two miles from the runway. There was also some blowing sand just west of the runway, between one and two

miles away (our base is right next to White Sands Missile Range). I double checked the winds with tower; they hadn't changed from the last report, so I decided to get the flight on the deck before the wind and rain hit the field. I considered carrying straight through initial, but figured that by the time we made it around the pattern the storm would be at the field. Besides, another trip around wouldn't guarantee that the weather would be gone (not to mention my fuel if I had to carry through a few more times). It

seemed the best course of action was to land without delay. I pointed out the virga and blowing sand to the young pilot in my back seat, and told him they were classic signs of windshear and microbursts. We discussed how we would change the pattern and speeds for the conditions. The winds around the final turn didn't undershoot as bad as I thought they might, and the crab I held on final wasn't much more than I've held on many occasions.

However, the landing was much different. Using a final



# SHAKE, RATTLE, & ROLL

approach speed of 162 KCAS, I was lined up on the centerline. In the flare, the wind blew me approximately 30 feet left on our 150-foot wide runway. As soon as we touched down, the right wing wanted to come up as the nose tried to yaw to the right. I used as much right aileron as I could and opposite rudder to keep the nose straight. My 150-foot wide runway was now rapidly shrinking, due to the wind blowing me left. I could feel the tires skipping from the side loads and I was concerned about going off the runway or blowing the tires. This situation was unique since you don't have the time to be scared in most fighters; whatever the threat, it generally goes by fast enough that it's basically react and then it's over with. On this occasion, however, I was doing my best just to keep the jet on the runway without going off the side and becoming a high-speed cheerleader.

As pilots, we know the first step in any emergency is to maintain aircraft control; and while I considered making a call to my wingman, I felt I was on the verge of losing control of the jet. I decided I should probably just worry about myself for the time being. Because of questionable control, I also elected not to make any big changes and try to

go around. I fought hard for control for about 3,000 feet, at which time I had slowed to about 80 knots. Suddenly, it was like someone turned the switch off; the jet abruptly stopped skipping and shaking and felt normal. I tested the brakes lightly and then just coasted until 2,000 feet remained of our 12,000 foot runway. Shortly after applying brakes, the left tire blew, turning us about 30-45 degrees to the right. I let off the brakes and tried to use rudder to get the nose to come back. As we approached the centerline, I reapplied the brakes and blew the right tire. We swung back to the left, skidded sideways for about 50 feet and ended up pretty much on the centerline. The nose was canted about 40 degrees off runway heading.

We took inventory of ourselves, and except for the blown tires we were fine. I looked back down the runway to check my wingman and didn't see him. He didn't fare as well as we had. He experienced the same conditions; but due to the student's flying ability, the condition of the tire, or a worse gust, they blew their left main shortly after touchdown. In an effort to keep from going off the left side of the runway, the IP used right rudder and nose wheel steering.

The good news is that he

didn't go off the left side; the bad news is that the corrections took effect all at once and they went off the right side of the runway. In a superb job of off-road handling, the IP was able to stop 2,000 feet later. They stopped 50 feet right of the runway with nothing worse than one blown tire. Having talked with the weather folks, and knowing what we saw from the air and felt on the ground, we determined that we had flown through a microburst. We found out later that the wind peaked at 37 knots as we touched down. When we checked the calibration of the anemometers, we found the tower readings were on the low side, by about 8-10 knots, from the actual site readings. This was due to their location, height, and surrounding topography. In effect, we landed in a cross-wind 17 knots above the aircraft limit. We have since made changes so that the anemometers reflect the true wind velocity. What we as pilots need to get out of this (besides that reported winds are suspect) is that windshear and microbursts are not just problems in the transition from takeoff or landing; they're a big player while you're still on the runway. Even though I was prepared for them, I still got a ride I'll never forget.

# *Outstanding Individual Safety Achievement Award*

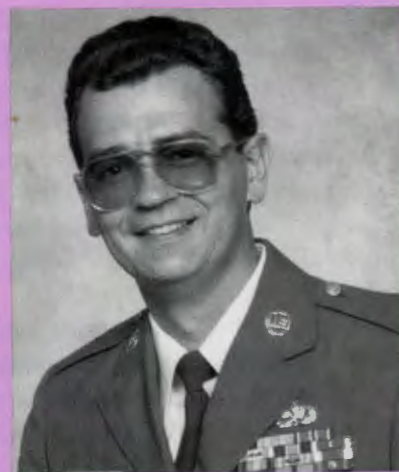
**T**echnical Sergeant Eugene N. Spino, aircraft electrician, and Staff Sergeant Anthony D. Iannucci, structural repair mechanic for the 107th Consolidated Aircraft Maintenance Squadron, Niagara Falls NY, were both working in the aircraft maintenance hangar, on 30 Sep 91. Sgt Iannucci noticed what appeared to be a bright light emanating from the right wheel well of an F-16ADF. Realizing that what he saw was not a bright light but a fire, Sgt Iannucci yelled and

gave a general area fire warning. While he was giving the alarm, Sgt Iannucci obtained a fire extinguisher and sent someone to call the fire department, then proceeded to the aircraft. When Sgt Iannucci arrived, Sgt Spino was already there attempting to analyze the cause of the fire. Both mechanics noticed the flames were coming from the battery cannon plug and associated wiring. Sgt Iannucci attempted to extinguish the fire with the extinguisher, but was unsuccessful. Sgt Spino, realizing that the battery would have to be disconnected before the fire could be extinguished, reached up into the wheel well and disconnected the burning wires and cannon plug from the battery. Following battery disconnection, Sgt Iannucci was able to extinguish the fire. The Fire Department arrived on the scene soon after the fire was extinguished. Inspection of the aircraft, following termination of the emergency, revealed that the battery cable had shorted out from water intrusion. The aircraft had just undergone an aircraft wash, and water intrusion most likely occurred

during this time. The quick, correct and professional actions on the part of Sgt's Iannucci and Spino in identifying, analyzing and taking appropriate actions prevented the possible loss of the aircraft, the hangar and other aircraft at great risk to their own personal safety. Sgt's Iannucci and Spino are commended for their actions in saving a valuable Air Force resource. These actions earned them the TAC Outstanding Individual Safety Achievement Award.



**TSgt Eugene N. Spino  
107 FIG  
Niagara Falls NY**



**SSgt Anthony D. Iannucci  
107 FIG  
Niagara Falls NY**

# Phys Bizz

## double dog tired

Maj Richard A. Allnutt  
HQ TAC/SGPA  
Langley AFB VA

**M**aybe you've been there... Late night flight, enough complications that you are near getting behind the jet. Sleepiness keeps interfering with your normal subconscious precision flying. You catch yourself forgetting steps you normally accomplish with hardly a thought. Finally, you make a mental note that you **ARE** going to get a combat nap in before that next night flight.

But the next month, even with a 1400 nap, the uncomfortable feeling is back. Your wingman makes that "automatic call" to Ground as you take the parallel. You had briefed that you would call; but if any of the younger guys caught you "napping," he could pimp you by making the call for you. Or you miss a radio call from the tanker and three takes it. You swear to yourself, "I took a nap—what's wrong with me!"

The problem is that **YOU ARE TIRED EVEN THOUGH YOU GOT ENOUGH SLEEP**. It's your internal clock that is shutting down and telling the rest of the body that it's time to get some shuteye. It's the other kind of tiredness (the accident board calls it circadian rhythm dysfunction) that has put you into the "Twilight Zone."

In the emergency room, we doctors run into this problem about 0200. Even with concerted effort to take an afternoon nap, the doc often finds his pen writing some of the silliest things early in the morning. More than once, I have chased patients into the parking lot to give them that one really useful piece of information I forgot while checking them out of the ER. Or maybe you were that patient that came back in to sheepishly ask me, "Weren't you going to give

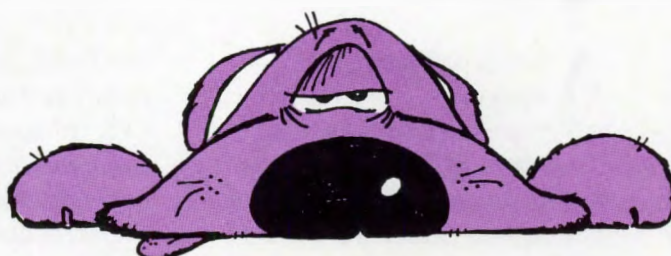
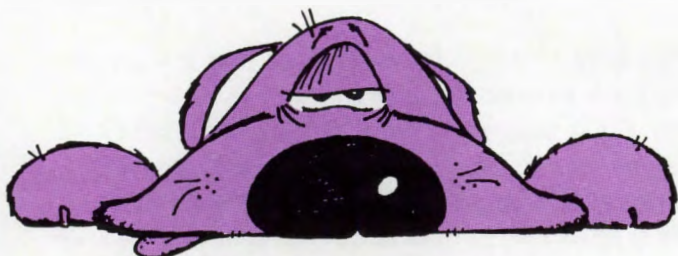
me some medicine, Doc?" It never happens when a real emergency rolls in, just when tending the walking wounded.

Squadron schedulers need to take into account that the body takes about a day to adjust to a schedule difference of an hour. If you are going to go to bed three hours late, it takes about three days to get your "clock" adjusted. Night flying after a week of very early go's just doesn't cut it. Some of this adjustment can be incorporated in the daytime schedule, just by slipping takeoff times by a few hours. Knowing that I will have to work late in the hospital, I can lead turn the change by staying up late and getting up a little later for several days before my night of misery.

A piece of good news is that the human body can get used to changing. Fliers who frequently

night fly get accustomed to the changes. This is probably partly due to experience and partly to technique. New guys need some extra help breaking into the routine as do old heads coming back from a staff tour. Little hints can be shared, with the proviso that there is a lot of individual variation in what works for any one person.

The kind of mistakes made when the internal clock is messed up tend toward "errors of omission." So don't be surprised when you forget to do a required step or don't hear something said to you. But don't be flying when you notice these symptoms. If you do see them in yourself or in your bud—it's time to get those puppies on the ground . . . **CAUSE YOU'RE DOUBLE DOG TIRED.**



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## COMPANY GRADE GULF WAR VETERANS NEEDED

Air University and Squadron Officer School are compiling a book filled with the autobiographical experiences of company grade officers who participated in Desert Shield/Storm. This book will expand the historical record of the war and inspire other officers. Would you like to see your story in this book? Please write your experiences in less than 2500 words (approximately 10 double-spaced pages). Add any pictures or art work which illustrate your message. **DO NOT INCLUDE ANY**

**CLASSIFIED MATERIAL.** Include a short biography and an official photo so we can identify you. Add a self-addressed envelope for anything you want returned. Please include your telephone number so we can ask you questions. Send this to Captain Michael Vriesenga, SOS/EDCD, Maxwell AFB AL 36112-5582. Hurry! We will begin editing and compiling in June 1992. If you have any questions, please call Capt Vriesenga at DSN 493-2730 or Commercial (205) 953-2730.

# Whaddya Mean

## It's Not VFR?

**Maj Ralph Gardner**  
**HQ TAC/SEF**

A h yes. As I write this, autumn is in the air. The leaves are beginning to change color, college football is alive and well, and another school year is well under way. Kinda reminds me of some memorable cross-countries from days gone by. In fact, one or two of them might even be worth mentioning—uh, strictly for mishap prevention purposes, of course. Now, I know YOU'VE never done this before, but you know someone who has.

There we were, preflighting the jets and packing the travel pods (for those airplanes that carry them). It was a beautiful morning with just a little haze in the air and absolutely no wind. We were on our way to a base out west with a scheduled fuel stop in the Midwest. All the planning was done (completely

this time), the PPRs were rechecked, and the forecast was VFR the entire way. Start, taxi and takeoff were about as uneventful as you can get. Even the en route portion began to take on a little boredom. Center, however, seemed to be busier than usual with airliners whining about altitudes and turbulence. We changed altitude several times at center's request.

About an hour en route, the fuel at destination was computed and found to be a tad under what was planned. This was due to stronger than expected headwinds and a lower final altitude than filed. No problem, though; we would still arrive overhead our destination with plenty of fuel for an en route descent to initial. We could even divert if

we had to, not that it would be necessary.

With about 150 miles to go, I had number two go over to ATIS to monitor and report back. He was unable to pick up ATIS on either UHF or VHF. So I asked center for the latest observation at our destination. He said he was busy, but he would get back to me (promises, promises). Meanwhile, a visual check out the "window" (what a concept!) showed nothing hideous, at least so far. I then had two go over to Metro freq for an update. He was unable to raise them until about 75 miles out; but when he did, the news was still good: 500 sct, 2000 sct, with 3 miles haze and fog.

In the interim, we had begun our en route descent and were busy with arrival procedures.



Everything still looked fairly good until about 30 miles out. Hmmmm, the fog seemed to be thickening somewhat. Fuel was a bit lower than planned because we had begun our en route descent pretty far out—anticipating no weather problems. I asked approach for their latest observation, but the only one he had was over 50 minutes old. Approach told us the field just went IFR, and to state our intentions.

Well . . . now what? How bad is the weather? What's our true fuel state? Where are the divert bases? Can we make them? What's our plan? Come on lead, think. You're the leader and you can't just "standby" at 300 knots.

After some quick mental gymnastics, I realized we had just enough fuel for one

approach at the destination and a divert to another base about 90 miles away. I asked for the "no kidding" weather at the destination and was informed it was 500 overcast and one mile visibility with fog. Okay, that's landable (if it's true), so I told approach we would take separate PARs to full stops.

We broke out on final exactly one mile from the end of the runway. Both of us were able to land without further loss of natural hair color. We were lucky. Fifteen minutes later, the field went WOXOF and was closed for about two hours until the fog burned off.

So what's the point? The point here is, even though everything is properly planned, it might be a good idea to always have a hip pocket diversion plan. Mother nature

still holds all the trump cards for weather and is especially unpredictable in wintertime. Even if the weather is good, a single-runway base has been known to close before for reasons other than weather.

And let's not forget complacency. Even though the weather is good at your departure base, the two hours en route and the 1000 or so miles later could change things quite a bit. Flying en route can also lead to complacency and boredom.

Winter flying demands more attention to the weather, especially when we fly cross-country. Proper planning and heads up flying will go a long way in helping us deal with those unforeseen situations which Murphy loves to throw at us.

# Crew Chief Safety Award



**T**Sgt Larry R. Andersen, 366th Aircraft Generation Squadron, 366th Wing, Mountain Home AFB ID, distinguished himself in the realm of safety and FOD prevention as a dedicated crew chief. On 21 Sep 91, he completed a preflight inspection on his EF-111A aircraft. The aircrew arrived and performed their walk-around inspection with no discrepancies. During the number two

engine start, the translating cowls moved to the forward (open) position. Immediately after the aircraft's right engine cowl cycled forward, Sgt Andersen noticed the aircraft's anti-ice duct had broken loose at the duct's swivel. He quickly directed the aircrew to shut down the right engine. His reaction was so fast that the engine did not have enough time to reach operating rotation. His

quick thinking and immediate action prevented the engine from ingesting the anti-ice duct or associated mounting hardware. In addition, he directed the aircrew to leave the cowl open, thus further reducing the chance for FOD. His actions not only saved an aircraft engine from damage, but also saved any associated aircraft downtime. Sgt Andersen is definitely a worthy recipient of the TAC Crew Chief Safety Award.

**TSgt Larry R. Andersen**  
366 AGS, 366 WG  
Mountain Home AFB ID



# Outstanding Individual Safety Achievement Award



**D**uring the 354th Fighter Wing's operational readiness exercise on 22 Aug 91, Sergeant Brian K. Dixon and Airman First Class Donna K. Cornell extinguished a ground fire beneath the left engine of an A-10. When the pilot shut down his left engine, Amn Cornell indicated to the pilot that the fuel had drained normally and he was cleared to start up his auxiliary power unit (APU). The APU started with no problems. Suddenly, Amn Cornell noticed that the fuel on

the ground had ignited. She signaled to the pilot that there was a fire and that he should shut off the APU and the right engine. While the pilot was shutting off the APU, Amn Cornell signaled Sgt Dixon, who was launching the A-10 next to hers, that she needed help. At that point, Technical Sergeant Hugh E. Flournoy noticed the fire and hurried out of his truck with the vehicle fire extinguisher. Technical

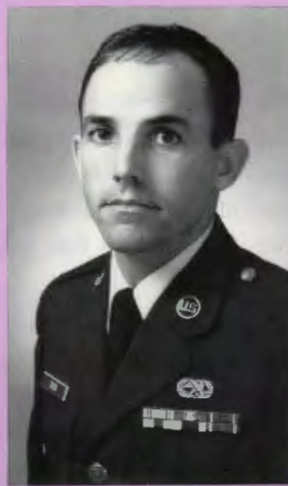
Sergeant John P. Reymond made a radio call to the maintenance operation center about the fire. At the same time, Sgt Dixon arrived with a flight line fire extinguisher and assisted in extinguishing the fire. While the fire was being extinguished, Amn Cornell assisted the pilot's evacuation from the cockpit. When the Fire Department arrived, the fire was completely out. The quick reactions of all four personnel prevented damage to the aircraft and possibly to other aircraft.

**TSgt John P. Reymond**  
354 AGS, 354 FW  
Myrtle Beach AFB SC

**TSgt Hugh E. Flournoy**  
354 AGS, 354 FW  
Myrtle Beach AFB SC

**Sgt Brian K. Dixon**  
354 AGS, 354 FW  
Myrtle Beach AFB SC

**A1C Donna K. Cornell**  
354 AGS, 354 FW  
Myrtle Beach AFB SC





## SELLING WEAPONS SAFETY

**Mr Wilson E. Blount**  
**Weapons Safety Manager**  
**Directorate of Weapons & Space Safety**  
**Air Force Safety Agency**

**T**o paraphrase Langston Hughes, a nineteenth century poet: Well son I'll tell you, the life of a weapons safety officer ain't no crystal stair. So what's a poor weapons safety officer to do? For starters try to be more proactive. Don't wait for the Logistics Group Commander or chief-of-the-bomb dump to call you. In most cases, you could grow old waiting. These are super busy people trying to keep the squeaky wheel oiled. It may be difficult to do, but they can be won over to your side, or shown a better vision of weapons safety.

Some selling points:

- On your way to survey the bomb dump, be the eyes and ears of the chief. Look around for things that are on the verge of getting outta whack and point these out to him in a friendly, off-the-record way. Don't just do it once; repeat the process and he will eventually respect you as an ally. This should not be interpreted as allowing safety deficiencies to go unreported on formal surveys and spot inspections. There is no quicker way to lose your credibility as a professional than failing



to live up to your duties. And don't ever forget that your boss, the wing commander and the Air Force expects professional conduct from you.

- Sure, the Logistics Group Commander and his staff are responsible for submitting material deficiency reports and documentation to identify problems with equipment and supplies. But what do you do when, in the middle of an ORI, or actual hostilities such as Desert Storm/Desert Shield, the

entire LG complex is involved in "turning the birds for the next go?" For heavens sake, don't retreat to your office, or tent, and make an entry in your inspection log saying QA is required to submit an MDR on a missile that failed to fire. Why not put on your "I-want-to-make-a-difference" hat and write the report yourself. If you take this attitude consistently, I can almost guarantee that the wing commander, DO, LG and his folks will see you as a person who can be counted on for help when the chips are down. Now that you have their minds, their safety attitudes should follow.

- Never, but never, write a survey or inspection finding without verifying the situation. Once you have done this, don't be afraid to make good solid recommendations for resolving the condition. In today's environment, with personnel and budget reductions, supervisors and commanders don't have time to waste on reports full of inaccuracies and recommendations that do not get to the heart of the problem. Save yourself some time, and as they say in the orient, some "face"; be brief and, above all, validate your findings, observations and recommendations.

The trials and life of a weapons safety officer/NCO do not have to be filled with tack strewn carpets, frustrations or poor job satisfaction. Selling weapons safety is a difficult task. If you have not heard the most often quoted phrase "tell me when was the last time we had an igloo blew up," you will. It's just a matter of time. But you can achieve success at selling weapons safety; these tips are just a start; you can add your own.

Finally, to paraphrase Langston Hughes: Don't tell me you can't climb above a difficult sell. By the way, the last time an igloo blew up was at Hill AFB UT, 1 May 1989, at approximately 1515 hours.

# Outstanding Unit Safety Achievement Award

The 507th Air Control Center Squadron Vehicle Maintenance Section is the best vehicle maintenance operation in the 507th Wing. Although responsible for operations in several facilities and maintenance of a variety of vehicles, the section has consistently performed professionally and without incident. The section redeployed almost 1,000,000 pounds of equipment from Operation Desert Storm without a single mishap. Upon arriving at Shaw AFB, the section formed teams to receive the returning equipment. The teams cleaned and inspected all equipment, restoring them to 100 percent condition in minimum time. The section handles hazardous fluids on a daily basis and also maintains a hazardous

materials storage area. Procedures for handling hazardous materials were established in such detail they are now easy to follow. All personnel are well trained in the use of personal protective

507 ACCS  
507 ACW, 9 AF  
Shaw AFB SC



equipment, ensuring safe operations. The TAC Environmental Compliance Assessment and Management Program (ECAMP) evaluation team did not find a single discrepancy during its inspection of the section further underscoring their outstanding achievements. During an annual inspection by 507th Wing Safety, the vehicle section received a "best seen to date" rating, again with no discrepancies noted by inspectors. The strong leadership by supervisors and a "do it by the book" attitude serve as a basis for the many successes of the section. The outstanding achievements of the personnel in the 507 ACCS Vehicle Maintenance Section have won them the TAC Outstanding Unit Safety Achievement Award.



# TAC TALLY

CLASS A MISHAPS
AIRCREW FATALITIES
* IN THE ENVELOPE EJECTIONS
* OUT OF ENVELOPE EJECTIONS

TOTAL		
DEC	THRU DEC	
	FY92	FY91
2	8	2
1	6	2
1/0	3/1	1/0
0/0	0/0	0/2

TAC		
DEC	THRU DEC	
	FY92	FY91
1	3	1
0	1	0
1/0	2/0	1/0
0/0	0/0	0/0

ANG		
DEC	THRU DEC	
	FY92	FY91
1	4	1
1	3	2
0/0	1/1	0/0
0/0	0/0	0/2

AFR		
DEC	THRU DEC	
	FY92	FY91
0	1	0
0	2	0
0/0	0/0	0/0
0/0	0/0	0/0

\* (SUCCESSFUL/UNSUCCESSFUL)

## CLASS A MISHAP COMPARISON RATE

(CUMULATIVE RATE BASED ON ACCIDENTS PER 100,000 HOURS FLYING)

TAC	FY 91	0.0	0.0	0.7	1.8	2.2	2.2	2.2	1.9	1.7	1.8	1.8	2.0
	FY 92	4.0	2.2	2.3									
ANG	FY 91	3.8	2.0	1.3	3.9	3.2	4.0	5.2	5.0	4.9	4.8	4.3	4.3
	FY 92	0.0	5.8	5.1									
AFR	FY 91	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	FY 92	0.0	9.9	6.6									
TOTAL	FY 91	1.2	0.6	0.8	2.3	2.4	2.6	2.9	2.7	2.5	2.5	2.4	2.5
	FY 92	2.4	3.9	3.6									
MONTH		OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP

## TAC'S TOP 5 thru DECEMBER 1991

1st AF			9th AF			12th AF		
"COMMAND-CONTROLLED CLASS A MISHAP-FREE MONTHS"								
71 30	57	FIS	54 33 25 24 18	1	FW	56 48 47 42 28	479	FG
	325	FW		56	FW		355	FW
				31	FW		366	WING
				33	FW		27	FW
				354	FW		49	FW
ANG			AFRES			DRUs		
"COMMAND-CONTROLLED CLASS A MISHAP-FREE MONTHS"								
467	119	FIG	184	301	TFW	183	552	ACW
443	147	FIG	158	482	TFW	74	28	AD
253	110	TASG	125	924	TFG	53	USAFAWC	
227	138	TFG	113	906	TFG	2	USAFFWC	
200	112	TFG	88	507	TFG			

