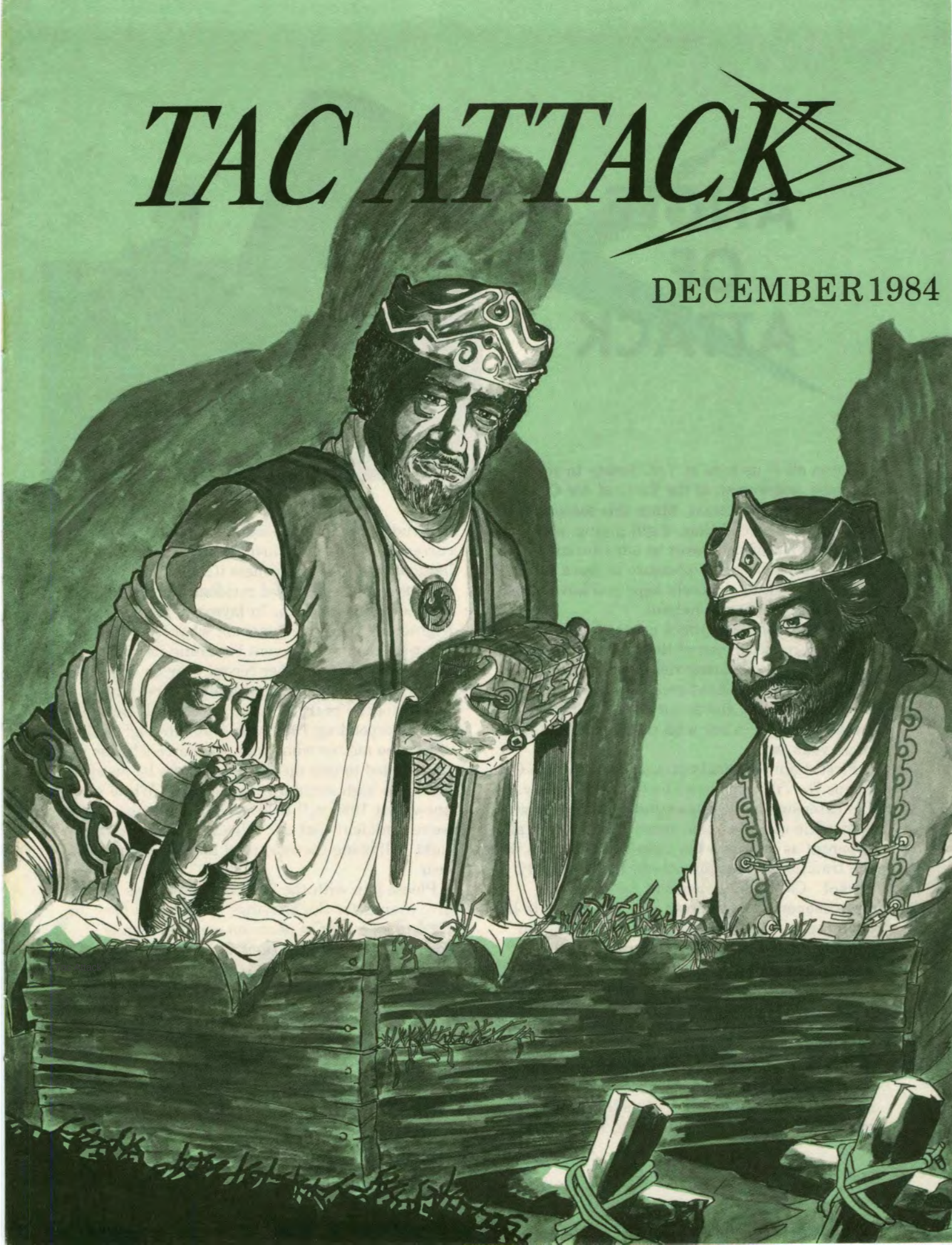
TAC ATTACK

DECEMBER 1984



ANGLE OF ATTACK

From all of us here at TAC Safety to you, the men and women of the Tactical Air Command, Merry Christmas. Since this season is recognized as a special time of gift giving, please accept Stan Hardison's cover as our Christmas card to you. It has been our pleasure to serve you during 1984, and we sincerely hope you have found our efforts timely and helpful.

This issue of *TAC Attack* contains feature articles by three wise men of the TAC Safety team. They each come bearing rich insights into some difficult problems that threaten our ability to do the mission right and to survive. Embrace the truths wrapped in our wise men's gifts and make them your own.

First, I am extremely pleased to introduce Col Coupe De Ville, our new chief of flight safety. His extensive tactical background, demonstrated leadership qualities, and sense of humor are all apparent as he tosses his nickel on the grass with the traditional good intentions. In "Here's My Nickel," Col De Ville looks at an unsettling phenomenon — how recent accidents seem to be claiming our units' experienced, talented, and dependable old heads, not the young pups we worry about so much.

Next, Maj Bill Meeker, chief of our studies branch, sheds light on a thorny issue, the need to approach the training that is honing our wartime skills with "intelligent flexibility." Without reasoned and mature flying attitudes, we run the risks of diluting our effectiveness and thereby asking for "more guidance." You'll be hearing more from Bill from time to time. The charter of his studies branch is to work the thorny issues; currently he is deeply involved in studying G-induced loss of consciousness (GLC).

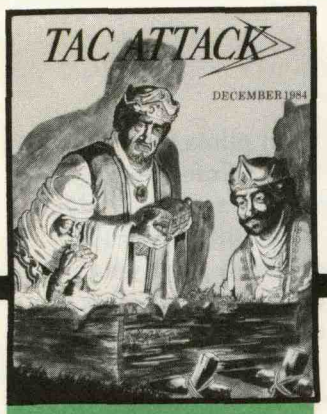
Finally, our editor and resident recce expert, Maj Lew Witt, explains in layman's terms the frightening GLC phenomenon, what it is, and what we can do to prevent becoming its victim.

1984 has been another record year for flying safety in TAC. Through each of the first ten months of the year, we have consistently bettered the corresponding 1983 rate. Outstanding! Each of you, no matter what your Air Force job, has contributed to this measure of success by maintaining a high standard of excellence. While we know that 1985 will hold its own challenges, we're confident that our collective efforts to do it right will bring the reward of another successful year.

Please join with the TAC Safety staff as we give thanks for the blessings of 1984 and pray for 1985 to be a year of peace on earth to men of good will. Merry Christmas to you and yours.

Harold E. Watson

Harold E. Watson, Colonel, USAF
Chief of Safety



ON THE COVER:
TAC Safety's Christmas Card to you.

DECEMBER 1984

DEPARTMENT OF THE AIR FORCE

Anatomy of a GLC Victim 4
No warning signals . . . one minute you're there, the next you're not.

Aircrew of Distinction 9
Capt Mark S. Giglio and Capt Roberto Acosta

Weapons Words 10
Working with TAC's weapons systems.

Judgment and the Employment of Existing Guidance 12
Additional restrictions are a poor substitute for judgment.

TAC Ground Safety Award of the Quarter 15
SSgt John R. Ward

The Spirit of St. Louis 16
Stipple rendition by A1C Kelvin Taylor.

Chock Talk 18
Incidents and incidentals with a maintenance slant.

TAC Monthly Safety Awards 21
SrA Michael D. Troia and SSgt Dwight D. Royal

Down to Earth 22
Items that can affect you and your family here on the ground.

Here's My Nickel on the Grass 24
It's not Blue 4 we've been digging out of smoking holes.

TAC Tips 26
Interest items, mishaps with morals, for the TAC aircrew member.

Fleagle Salutes 29
Acknowledging TAC people who gave extra effort.

Letters 30
Our turn to take flak.

TAC Tally 31
The flight safety scorecard.

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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/SEP, Langley AFB, VA 23665-5001; or call AUTOVON 432-3658.

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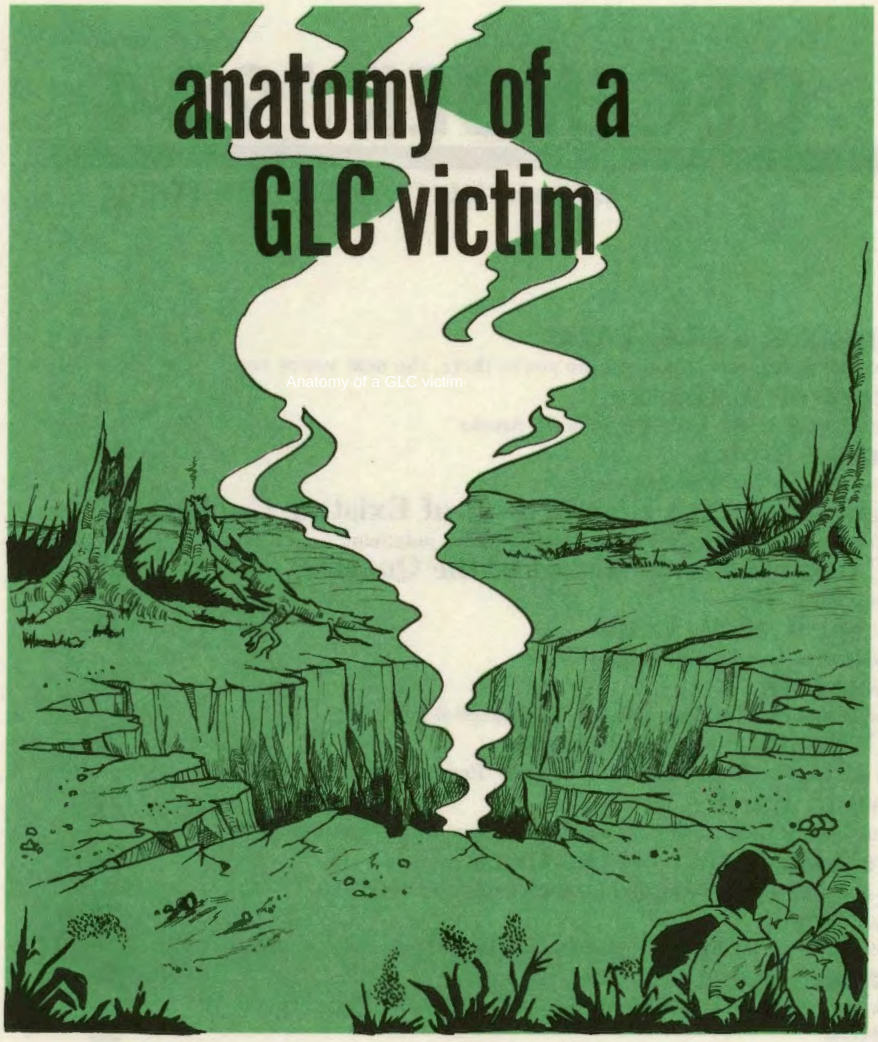


By Maj Lew Witt
Editor, *TAC Attack*

G-induced loss of consciousness (GLC)

is not a recent discovery. Pilots riding in centrifuges demonstrated the existence of GLC while many of us were still toddlers.

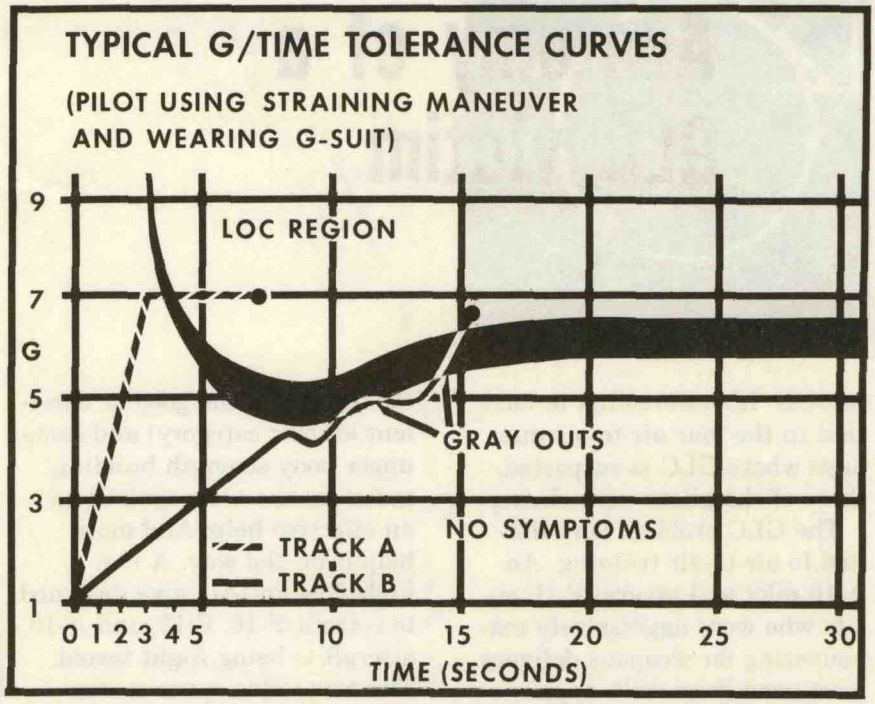
We are currently hearing a lot about it, however. In today's fighters we can demand more Gs more rapidly and sustain them longer than pilots could in former days. Unfortunately, we are seeing a nasty by-product of that capability: fully functioning aircraft are flying straight into the dirt after the pilot pulls back on the control stick and takes an unscheduled nap. While our aircraft are much more capable, we're still working with the original issue, first generation bod.

Most of us have learned from experience that, in the heat of battle, we occasionally lay on more Gs or do so more rapidly than we intend. Likewise, IPs and WSOs not on the controls have been surprised by an unanticipated high-G maneuver. These events usually cause tunnel vision, and occasionally the world becomes one large gray area for a few seconds as the flow of blood (oxygen) to the brain is *reduced*. This is the body's warning mechanism that tells us to reduce the G-load before something worse happens.

But today we are seeing a new, deadlier problem, GLC. Centrifuge testing shows that the average aircrew member (who's average?) caught by surprise without a good straining maneuver will lose consciousness about five seconds after the *rapid onset* of a high-G maneuver. In the accompanying figure, track A reflects this type of GLC entry. Rapid G-onset rates *bypass* the body's warning mechanism and momentarily *interrupt* the flow of blood to the brain. With this type of entry, GLC has no warning signals, there are no preparatory graying out symptoms . . . one minute you're there, the next you're not. That is not to say a pilot can't achieve GLC despite the warn-

ings as track B shows.

Centrifuge studies have also shown that once the pilot loses consciousness, a period of functional incapacitation follows. This period lasts about 15 seconds (the range was from 9 to 20.5 seconds). Video tapes of centrifuge subjects who experienced GLC show them moving their head and arms in an uncoordinated, haphazard manner and grunting or mumbling incoherently as if being awakened suddenly from a night-



During the GLC period, the pilot is completely incapacitated — unable to respond to voice warning systems or radio calls.

mare. During this period, the pilot is completely incapable of purposeful activity — unable to respond to voice warning systems or radio calls, unable to pull the throttle out of AB, unable to recover from dangerously steep dives, unable to initiate ejection . . .

Following incapacitation is a recovery period lasting about 10 seconds (video tapes of some subjects seem to indicate an even longer recovery time). During the recovery period, the pilot is confused and disoriented, and his performance is erratic. He may attempt to regain awareness by scanning the cockpit or grasping the flight controls. Some subjects described post-GLC feelings of detachment and apathy; they stated they knew what they were supposed to do, but didn't care about doing it. Some described the experience as a dream-like state where time seemed to move slowly (temporal distortion).

From the pull on the pole that causes G-induced loss of consciousness until the pilot regains functional capacity, we're talking about 15 to 30 seconds. What can happen in 15–30 seconds? You might be surprised. Put yourself in the driver's seat of your F-16 (F-15, F-4, etc.) in a mock-combat air-to-air scenario where you're suddenly and somewhat unexpectedly called to move the aircraft out of its present trajectory in a hurry. Let's say you inadvertently snatch a handful of Gs at a very rapid rate, and you're "outta there" for 30 seconds. With no one driving for that length of time, if the aircraft is headed uphill, it will probably roll over and start down, seeking to find 1 G. You will recover, somewhat disoriented, and may not even be aware that you were unconscious. It's happened to more than one pilot. Your adversary may be saying, "Thank you very much," while you're wondering what happened (amnesia of the events immediately preceding GLC was common in certrifuge testing). You won't remember graying out or losing your grip on the stick. You will feel disoriented, but you may not have any idea until you review the tapes that you were the victim of GLC.

But if you're in a hard, level turn or slice when you pass out, the aircraft may be screaming earthward in short order. In one mishap where GLC is suspected, the pilot began an aggressive slicing maneuver; then the aircraft unloaded, accelerated, and lost over ten thousand feet before smashing into the ground. The mishap sequence from turn to impact took less than 30

Anatomy of a GLC victim

seconds. It's interesting to note that in the four air-to-air mishaps where GLC is suspected, three of the pilots were slicing.

The GLC problem isn't limited to air-to-air training. An A-10 pilot and several F-16 pilots who were aggressively maneuvering for weapons delivery have gone in as well, apparently victims of their own right hands. Time to recover from GLC in that environment is virtually nonexistent.

GLC is real whether or not you have personally been there (or remember being there). And it's a serious problem. What can we do about it? A personal program of good general physical fitness (in the good or excellent aerobic category) and some upper body strength building/maintenance is recognized as an effective help. And more help is on the way. A new high-flow anti-G valve designed to retrofit F-16, F-15, and A-10 aircraft is being flight tested. The new valve opens sooner and allows a greater flow to the pilot's G-suit. If testing and funding resolve, production could begin in mid-1985 for F-16s. F-15 and A-10 retrofit, covered by different funds, would follow. Research for other solutions continues.

Additionally, centrifuge training is once again in progress at Brooks AFB, Texas. The centrifuge has been extensively modified to add the capability to generate rapid G-onsets. Likewise, centrifuge training is going to be added to the curriculum at lead-in fighter training at Holloman AFB, New Mexico. Construction of Holloman's centrifuge should begin in 1985.

These efforts will help some pilots. But no valve or centrifuge is going to fix the fundamental problem, the first generation body. Rather, each of us must do something to help ourselves. Several centrifuge studies have shown that the most important and effective defense against GLC is the basic straining maneuver (either the M-1 or L-1, whichever you learned, is effective). According to HQ TAC/SGPA, properly applied, the straining maneuver will add nearly three Gs to a pilot's normal G-tolerance. By comparison, a G-suit, even one fed through the new high-flow valve, may add only one G. (The G-suit's function is to give you something to push against, thereby improving the effectiveness of a straining maneuver; but *you* still have to push.) To be effective, the straining

Properly applied, the M-1 straining maneuver will add nearly 3 Gs to the pilot's normal G-tolerance.

PHYSICAL FITNESS CATEGORIES and 1.5-MILE TIMES:

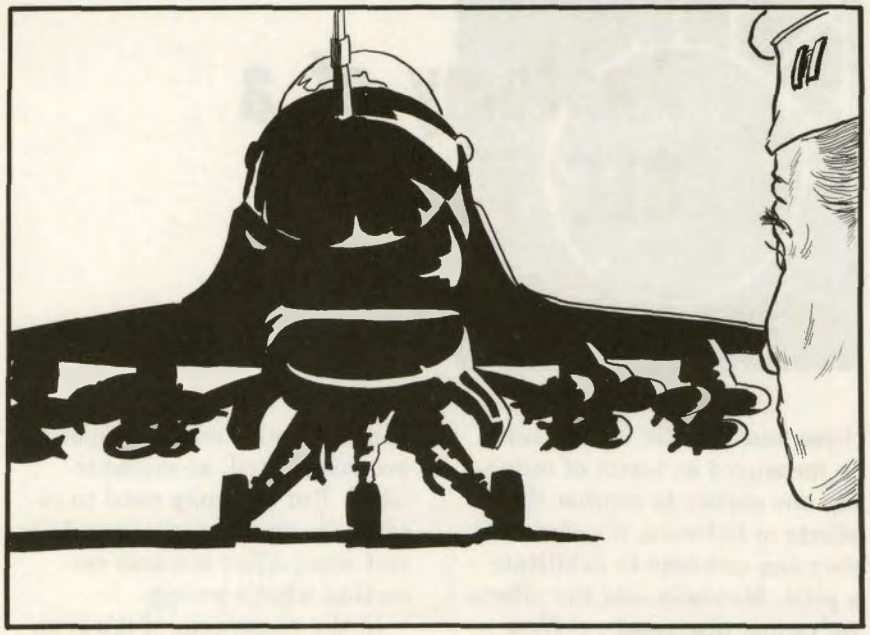
Age	Poor	Fair	Average	Good	Excellent
17–29	16:31 +	14:31-16:30	12:01-14:30	10:16-12:00	10:15 or less
30–34	17:01 +	15:10-17:00	12:31-15:00	10:31-12:30	10:30 or less
35–39	17:31 +	15:31-17:30	13:01-15:30	10:46-13:00	10:45 or less

PHYSICAL FITNESS CATEGORIES VERSUS TIME REQUIREMENTS

These time requirements for each category of fitness are based on the relation of maximum oxygen consumption to running times. For example, running 1.5 miles in 12 minutes is consistent with an oxygen consumption of 42 ml/kg/min (milliliters per kilogram of body weight per minute), a *satisfactory* level of cardiovascular fitness for young men. This goal cannot be achieved by most people unless they have been training regularly.

maneuver must be applied correctly and *early*. Waiting until G-onset may be too late.

There's something else we need to do to stack the cards in our favor: avoid certain traps known to decrease our *normal* G-tolerance. What are these evils that can rob the tiger of his stripes? They are insidious little devils — not obvious, grotesque monsters — so we don't fear them. Some of us have become accustomed to living with them. They are part of us. They are ruts that are too easy to fall into. They are mere features of our lifestyle. In fact, some of the same patterns of living that can cause such devastating problems for fighter pilots were the regular diet for many of us in college, without apparent ill effects. Some of them are **conditioning, diet, schedule, and psycho-social drives.** All of these things can be good for us. But if we neglect them, or if we allow ourselves to become their slaves, they will extract their toll.



Conditioning. Do you exercise regularly? If not, you're neglecting an activity that not only benefits your physique and helps control weight, but also helps fight fatigue. The sad fact is that many of us have slipped out of shape since pilot training. (The other extreme is bad too. Apparently, there is sufficient evidence to suggest that excessive aerobic exercise decreases G-tolerance.)

We can also become deconditioned in another way: long layoffs from flying caused by a PCS move, a nonflying TDY, or a vacation. When we return to our flying duties, maybe we're not quite as sharp mentally as usual; maybe it takes us a few seconds longer to obtain a tally-ho; maybe in the weather we find our crosscheck just a bit rusty. And what about the bod? Do you think laying off G-forces for awhile might affect you? Count on it.

Diet. How efficient can your body be if you haven't eaten for 14 hours before flying and have only eaten once in the last 36 hours? (*Ed note: these are not random numbers.*) That kind of regimen (or lack of one) produces low nutrition, hypoglycemia, and fatigue — not the kind of companions you want to take along on a demanding mission.

How about too much booze? Even after the obvious effects have finally worn off, you're left dehydrated and fatigued.

Schedule. Are you burning the candle at both ends? Who isn't? It's the expert's fault, right? All the career experts tell us to make something of our squadron duties, take PME, or work on an advanced degree. The car dealer says we better bring that cream puff into the shop at the first sign of trouble. The Base Commander says it's important to keep the lawn trimmed. And Doris says it's important to socialize a lot so we don't become old and stale before our time.

All of these things may be important, but they take time. Only so many activities can be tacked on to the end of the day before they cut into our beauty-rest time. Soon a late-to-bed, early-to-rise pattern develops, and we pay the price in fatigue. Maybe we need to learn to say "No" now and again. Maybe *we* need to determine what's important and control our own schedule instead of being its victim.

Psycho-social-drives. "What's the matter, can't you hack it?" None of us wants to hear that question from someone who counts. Sometimes we do things that aren't smart just to demonstrate we can hack it. Fighter pilots are born with a drive to be Somebody, to prove ourselves. Some have flown when they were feeling lousy. Some have self-medicated. Most of us have been inappropriately aggressive in the aircraft at times.

While the exact effect of

Anatomy of a GLC victim

these four specific factors can't be measured in terms of reducing our ability to combat the effects of G-forces, it's obvious they can *combine* to debilitate a pilot. Mentally add the effects we've just discussed . . . Now slowly and insidiously put them on the back of an unsuspecting fighter pilot. Then send him on a BFM mission with the challenge of gunning your brains out. Watch how the repeated application of G-forces during the flight contributes to cumulative fatigue, mental and physical stress.

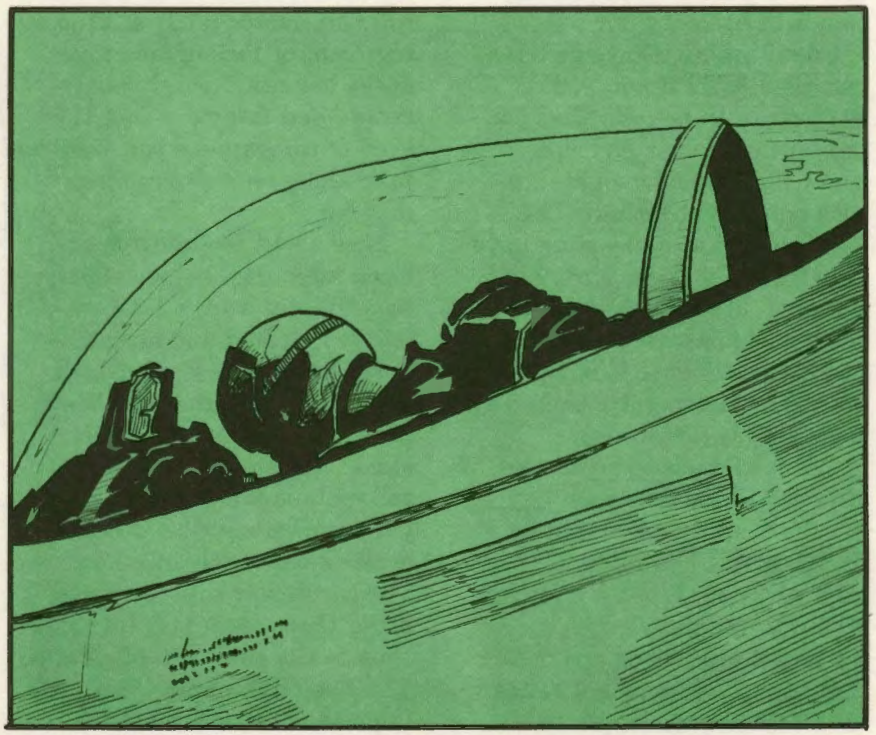
See how quickly it all adds up to the anatomy of a GLC victim?

How do you stack up? You don't have to surrender your wings if you're out-of-shape, overcommitted, or malnourished. But you may need to re-evaluate your priorities and direct some *effort* towards correcting what's wrong.

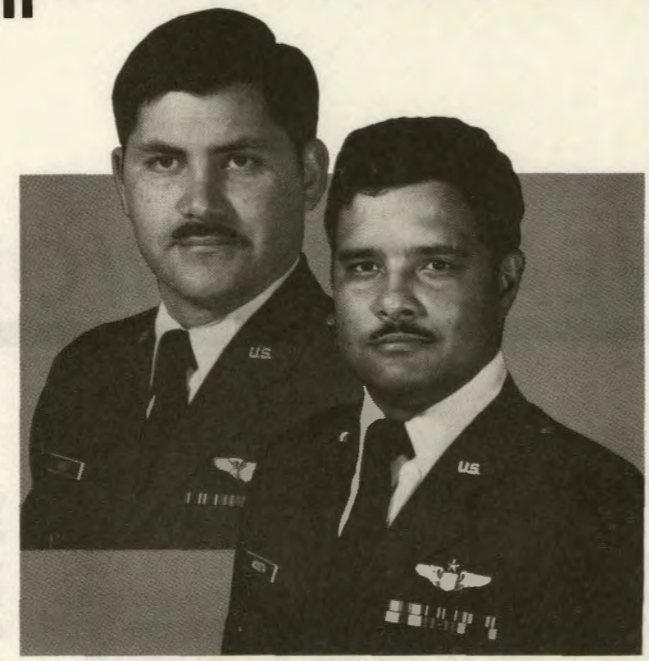
In the meantime, if it's been a while since you've done any serious pulling on the pole, how about a little *finesse*. Granted, rapidly applied high G-loads will quickly move the aircraft out of the way of a Fox 2. *A quoi bon* if they leave you a nonmaneuvering grape for twenty or thirty seconds? And regardless of the frequency with which you pull Gs, taking a nanosecond to use the STRAINING MANEUVER *before* honking back on the control stick is your BEST DEFENSE AGAINST GLC.

Take a look at yourself. A recent change to AFR 127-4 now requires the safety investigation board to look at the primary aircrew member's life style during the 14 days preceding a Class A or B mishap. Maybe that's something we should all do — before our high-speed lifestyle becomes our fiercest high-G threat. ➢

You don't have to surrender your wings if you're out-of-shape, overcommitted, or malnourished, but you may need to re-evaluate your priorities.

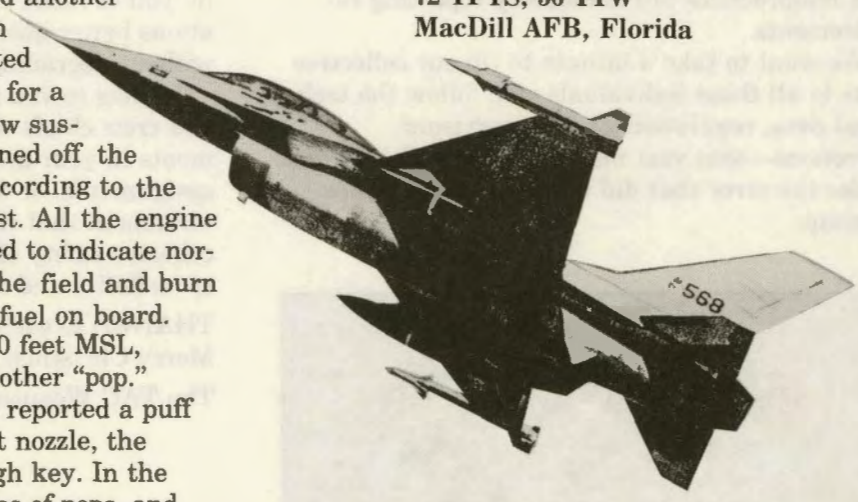


Aircrew of Distinction



Capt Roberto Acosta
Capt Mark S. Giglio
72 TFTS, 56 TTW
MacDill AFB, Florida

On 12 July 1984, CAPT MARK S. GIGLIO, an upgrading F-16 pilot, and his instructor pilot, CAPT ROBERTO ACOSTA, were flying their two-seat F-16B on a syllabus bombing mission at the Avon Park range in Florida. Their aircraft was configured with two external wing tanks and two SUU-20 bomb racks loaded with practice bombs. On their first run-in at 600 feet above the ground (AGL) with 450 knots, the aircrew heard a muffled popping sound. Capt Giglio called "knock it off" and climbed to cope. At this point they believed something had fallen from their aircraft. But in the climb the aircrew heard another "pop." Capt Acosta directed a turn toward the 5,400-foot airfield located at the range as Capt Giglio set up for a precautionary landing pattern. Now suspecting engine problems, they turned off the EEC (electronic engine control) according to the abnormal engine response checklist. All the engine performance instruments continued to indicate normal; so the crew decided to orbit the field and burn down some of the 6,700 pounds of fuel on board.



During their third orbit at 8,500 feet MSL, Capts Giglio and Acosta heard another "pop." When the pilot of a chase aircraft reported a puff of smoke coming from the exhaust nozzle, the aircrew quickly turned toward high key. In the turn the engine began a long series of pops, and the chase reported flames coming from the nozzle. Capt Giglio immediately retarded the throttle to idle, jettisoned the external fuel tanks, and continued what was now a flameout approach.

Capt Giglio chopped the throttle off as the engine stagnated and its temperature soared through 1,000 degrees. Passing 6,000 feet the first BUC (back-up fuel control) airstart was aborted because of high temperature. Later in the flameout approach, a second BUC airstart was successful. At this point in the pattern, however, the increased thrust actually compounded the landing problem.

When the landing was assured, Capt Giglio lowered the landing gear and tailhook. The aircraft successfully engaged the departure-end cable. Later, two compressor blades were found to have broken from their base because of fatigue.

By their timely reactions, outstanding crew coordination, and skillful flying, Capts Giglio and Acosta saved a valuable aircraft and earned the Tactical Air Command Aircrew of Distinction Award.

WEAPONS WORDS

For all you do...

Up here at the aytch kyoo (HQ), we often hear the bad news. Some of the mistakes made in the weapons field are spectacular, others are dangerous, most are expensive. But the message traffic doesn't reflect an accurate picture of what is happening out there, because only the mishaps and malpractices are mandatory reporting requirements.

We want to take a minute to tip our collective hats to all those individuals who follow the technical data, regulations, and supervisors' directions—that vast majority of you who did not make the error that did not lead to a weapons mishap.

You are the ones who delivered bombs at 0200 and those who loaded them at 0300. You did the CAD/PAD time change at 1900, supervised the Security Police's gun clearing at the 2300 shift change, or were involved in the many other munitions operations that occur around the clock.

Everyone in the career field benefits from the AFTO Forms 22 and suggestions you have turned in; you've made the ways we do explosive operations better/quicker/cheaper and more efficient without degrading safety.

Thanks to you shop chiefs, shift supervisors, and crew chiefs who have made safety improvements in your areas by rearranging shifts, crew assignments, or for providing a better work environment that reduced risks and led to a more cohesive safety effort. You have proven that responsibility and safety go hand in hand.

THANKS to each one of you and
Merry Christmas,

The TAC Weapons Safety Staff

Why should I care about Dull Swords?

By Capt William G. Danielson
TAC Weapons Safety

We don't have nuclear weapons here; so why should I be interested in the nuclear equipment certification program? You may not have nuclear

weapons, but you should be interested because you may have certain responsibilities for the equipment you do have. *Only* equipment that has been certified IAW AFR 122-3 can be used for work with nuclear weapons. Several equipment items that you routinely use with conventional weapons and even nonmunitions items have been certified for use with nuclear weapons. Examples of nuclear certified equipment range from chain hoists to munitions trailers and tow vehicles. Any deficiencies that you find in your equipment may exist Air Force-wide. And that involves you in the program.

A complete listing of all certified equipment is in TO 00-110N-16. Any design deficiency, malfunction, or failure of certified equipment listed in this TO must be reported as a combination Dull Sword/ Category I materiel deficiency report (MDR). This reporting requirement applies to *all units*, whether or not they participate in the nuclear surety program.

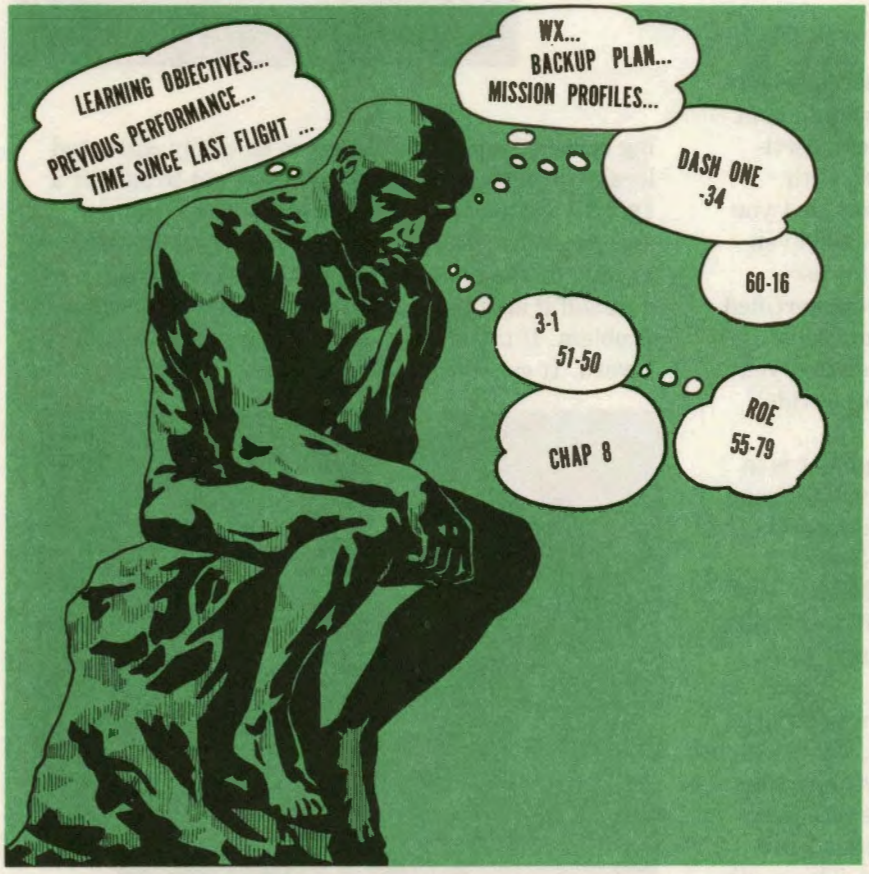
The key to the success of Dull Sword reporting is commander and supervisor involvement. Emphasis must come from the top down. Contrary to popular belief, there is no stigma attached to the unit that submits a Dull Sword report, and the reports are not detrimental to a unit's good standing. This myth needs to be dispelled.

Supervisors: of the equipment items you are responsible for, do you know which ones are nuclear certified? Do your troops know? And do your troops know what their role is in MDR/Dull Sword reporting? If not, here is how to start. AFR 122-3 establishes the basis for the program. AFR 122-1 and the TAC Sup 1 contain guidelines for administering the program. AFR 127-4 gives Dull Sword reporting guidance, and TO 00-35D-54 describes combined MDR/Dull Sword reporting.

Sometimes you will discover a deficiency involving certified equipment that can be easily corrected locally. You may ponder whether or not to submit a Dull Sword and search AFR 127-4 for a clear answer. What if this particular deficiency doesn't exactly fit the guidance? Should this occur, ask yourself if another unit might experience the same problem. If the answer is yes, then submit a Dull Sword. It can always be downgraded later, if

appropriate, with MAJCOM concurrence. The best guidance on Dull Sword reporting is, when in doubt, report. Remember—unreported deficiencies go uncorrected.

Judgment and the Employment of Existing Guidance



By Major Bill Meeker
Chief of Studies
HQ TAC Safety

Failure to follow the existing guidance is a phrase common to several of our recent Class A mishaps and is probably applicable to most of the mishaps we consider "command-controlled." Emphasis is on the word EXISTING. You, the operators, typically do not need more written guidance; and we, the pen pushers, have no intent of writing a rule for every situation. Judgment by correspondence just isn't in the curriculum.

During my fourteen years of stick-and-rudder time, I've witnessed a variety of techniques that different people have used to get the job done. Those most consistently successful have two characteristics I'd like to discuss:

(1) they understand the *intent* of the guidance provided (or ask questions until they do); and

(2) they are intelligently *flexible* individuals.

It's a good feeling to fly with people like that. You know that whatever comes up, you're probably not going to lose control trying to resolve a problem. This is especially comforting when confronted with a potentially dangerous situation.

Consistently good results require leaders who can adjust a game plan without losing sight of the overall objective. The flexibility inherent in most tactical operations appeals to fighter pilots. This is not to say that we routinely throw the game plan out the window. We

The flexibility inherent in most tactical operations appeals to fighter pilots. This is not to say that we routinely throw the game plan out the window. We simply know how to exercise the options.

simply know how to exercise the options. This has come through loud and clear on every RED FLAG, COPE THUNDER, or similar exercise I've ever flown in. The leader that was hard-wired to a fixed plan reduced his chances of being effective before he even raised the gear.

Flexibility is not an all-or-nothing proposition. Have you ever listened to the apparently opposing viewpoints of flexibility versus standardization? The argument can get fairly silly. Standardization will never replace the need for creativity.

Flexibility is certainly not an adequate substitute for knowledge of the rules. We need people who understand the existing guidance and are also able to adjust to the situation at hand.

Flexibility is certainly not an adequate substitute for knowledge of the rules. We need people who understand the existing guidance and are also able to adjust to the situation at hand. As with physical dexterity, mental flexibility requires some degree of ability and a fair amount of practice.

As an RTU IP, I had lots of practice. Turning JP-4 into knowledge while helping a student fill up his bag of tricks is one of the toughest challenges a pilot can tackle. It involves much more than what is in the syllabus and phase manuals. Judgment is required.

As an instructor, I always encouraged my student to explain what areas he felt needed improvement. Usually we could work something out or at least eliminate some questions (stress). When we couldn't get what he wanted on the next sortie, I could explain what the options were later in the program. I also found out how he felt about his own progress. All of this was especially helpful when planning a mission with a student I hadn't flown with recently.

Operational flying provides expanded opportunities for creative thinking. In addition to the less structured mission profiles, the range of crew capabilities varies considerably, not necessarily based on experience. The building block approach has been well advertised as the way to go. However, after the program is set up, adjustments (flexibility) are frequently needed. The blocks may be the wrong size, or there may not be enough of them. On occasion, you may even need to go back down a block or two.

My own Maverick checkout serves as an example. The "program" called for three rides in the Maverick training area. We searched for targets of opportunity: you know, school buses (good contrast), POL storage tanks (for those max range launches), trucks, etc. The first two rides were marginally effective due to poor visibility. On the third mission, the weather was great,but we had a system malfunction during the second pass. At the conclusion of my three checkout sorties, all the squares had been filled, but I still didn't feel "capable." With a little help from my flight commander and scheduling, I was afforded the opportunity to get some more practice. According to the book, I had completed the program. Fortunately, my supervisors and I agreed that the intent of the squares had not been accomplished.

Most TAC regulations and manuals are written to provide guidance rather than to create squares. Obviously, there are

Judgment and the employment of existing guidance

lots of squares, but tactical operations cannot be defined so neatly. Leaders need the ability to adapt and innovate. By ability, I mean—

(1) they are capable and willing to adapt/innovate, and

(2) they are allowed to.

As for "capable and willing," that's up to you. As far as being "allowed to" goes, we're working on it. Believe it or not, a great deal of effort goes into writing regs that are not overly restrictive. Mishap boards occasionally recommend more restrictions to "protect us from ourselves." The TAC Commander looks critically at the requirement for additional restrictions. A list of "will not's" doesn't communicate what we do want.

Some people seem to focus on what you can't do while others try to find all the loopholes. We can't legislate everything, nor do we want to try. There are legal ways to do dumb things. How many "defensive turns of up to 180 degrees" can you do in response to a succession of separate attackers? What should the time interval be between engagements? Exactly when does a defender become counter-offensive? When is situational awareness lost? The best answers to these questions need to come from the mouth of the individual leading the mission, not from higher headquarters.

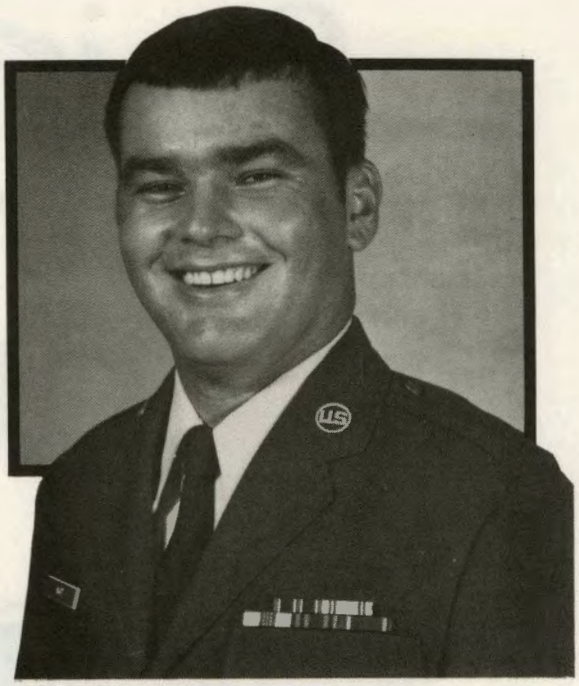
Additional restrictions are a poor substitute for judgment. Rules are generally written as limits, and we probably have enough of them. Sustained operation very close to the limits can put you "over the edge" very quickly and may not even make sense tactically. Loophole experts will tell you that if the minimum (altitude, airspeed, etc.) wasn't good enough, it wouldn't be the minimum. When this line of thinking results in a Class A mishap, it becomes increasingly difficult to argue against the recommended additional restrictions.

Occasionally we hear of someone who basically set himself up. Take, for example, low speed, high AOA offensive maneuvering at less than 1,000 feet from the bottom of the area. Legal? Yes. Smart? I don't think so. Given that the bottom of the area in combat is defined by dirt/water, is this training the way we plan to fight? In air-to-air combat, I plan on using that airspace under our training minimum altitudes — but not doing slow flight gun attacks. Or how about the no-notice IMC unusual attitude recovery? Again, in combat I plan to use those clouds, on purpose.

Judgment is not something we can issue, and it doesn't always relate directly to experience. I believe it has more to do with how you gained that experience. I've instructed students who had a thousand hours of experience and some others that appeared to have flown the same hour a thousand times. Experience is what you make of it. I feel fortunate that my own instructors were knowledgeable and creative. They understood the intent of the existing guidance and used it as the basis for building a sound game plan.

Judgment is required for the effective accomplishment of a tactical mission. Guidance must be understood and followed; however, all the answers are not "in the book." Let's keep the intelligently flexible option open. In short, *fly smart.*

GROUND SAFETY AWARD OF THE QUARTER



SSgt John R. Ward
405 CRS, 405 TTW
Luke AFB, Arizona

STAFF SERGEANT JOHN R. WARD has been the squadron safety NCO since September 1983. His determination to increase safety awareness and to highlight safety standards produced the only outstanding rating earned for a squadron ground safety program from a TAC inspection team since 1981. This is how he does it:

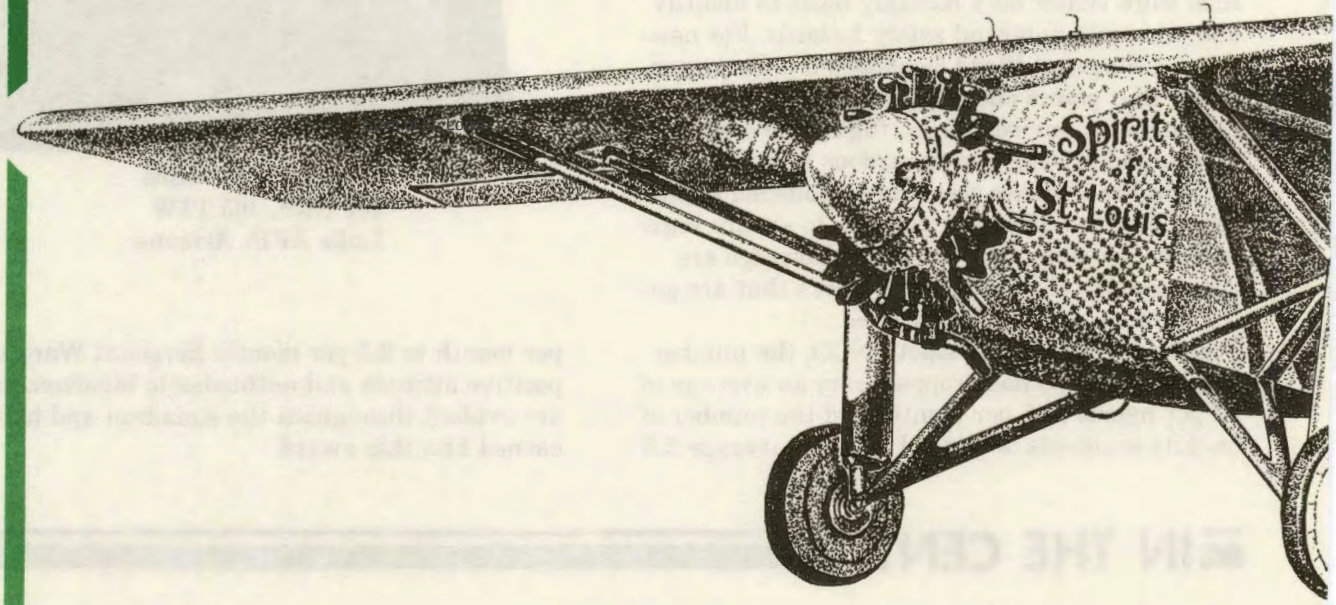
He conducts monthly safety meetings that involve 18 separate work centers and provides weekly safety topics to each one. He also inspects each work center on a monthly basis to identify and eliminate potential safety hazards. For newcomers, Sergeant Ward developed a slide presentation that points out specific hazards of the various work environments, flight-line operations, and driving and hazardous weather conditions in the Phoenix area. He established a quarterly survey of all motor vehicles to ensure registration, licensing, and insurance coverage are adequate. He also inspects all POVs that are going to be used for TDY purposes.

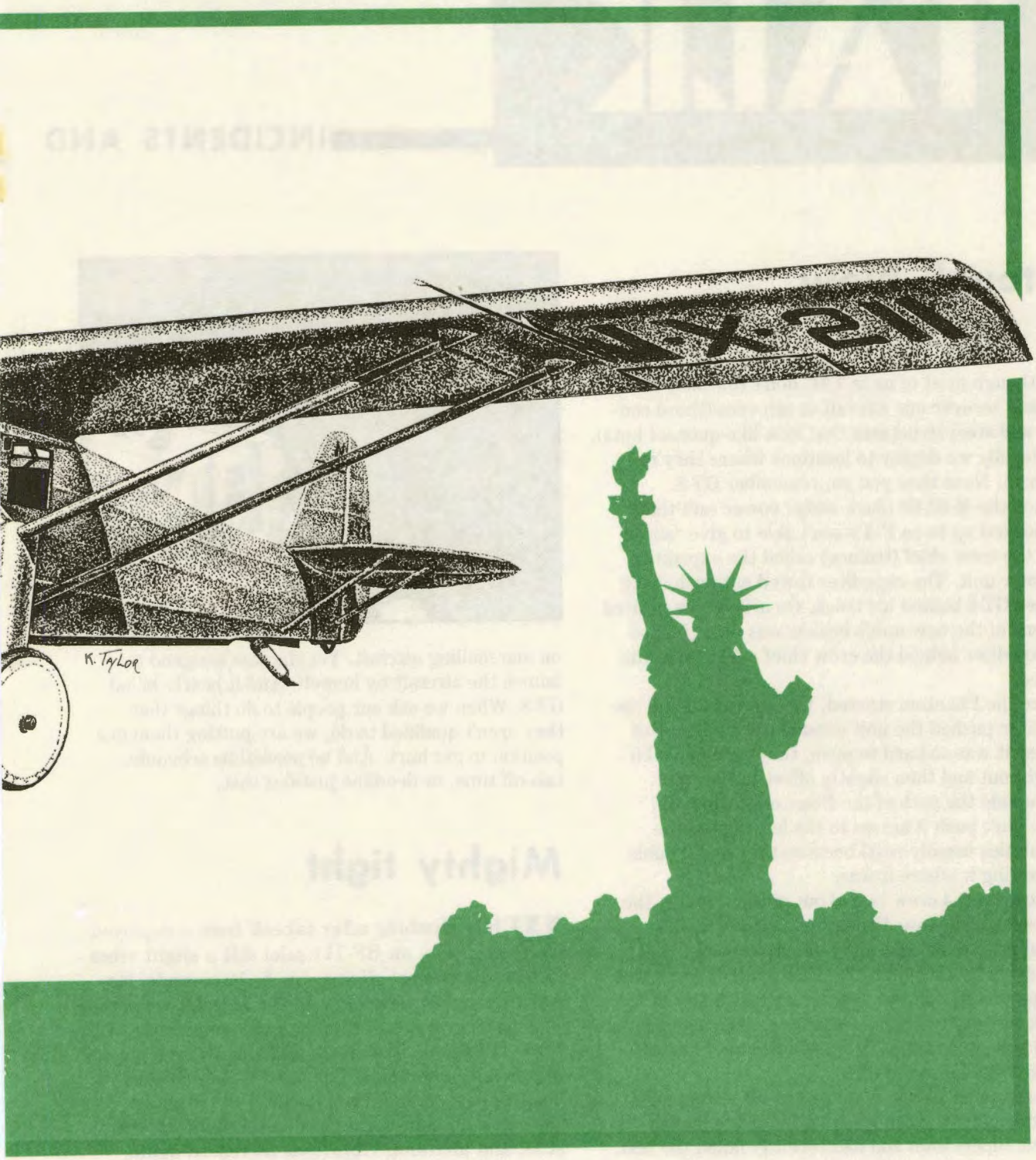
Since he became the safety NCO, the number of unit accidents has dropped from an average of 13 per month to 7 per month, and the number of on-duty accidents decreased from an average 5.5 per month to 2.5 per month. Sergeant Ward's positive attitude and enthusiastic involvement are evident throughout the squadron and have earned him this award.

IN THE CENTER

When Charles Lindbergh flew his Ryan monoplane across the Atlantic in 1927, the event catapulted aviation into a new era. The 5,000-pound aircraft covered the 3,600-mile route in 33½ hours, nonstop. Lindbergh removed the radio and other nonessential equipment and used a periscope to overcome an obvious forward visibility problem. The Spirit of St. Louis sparked the imaginations of people around the world.

Spirit of St. Louis




K. TAYLOR

CHOCK TALK

INCIDENTS AND

A tough blow

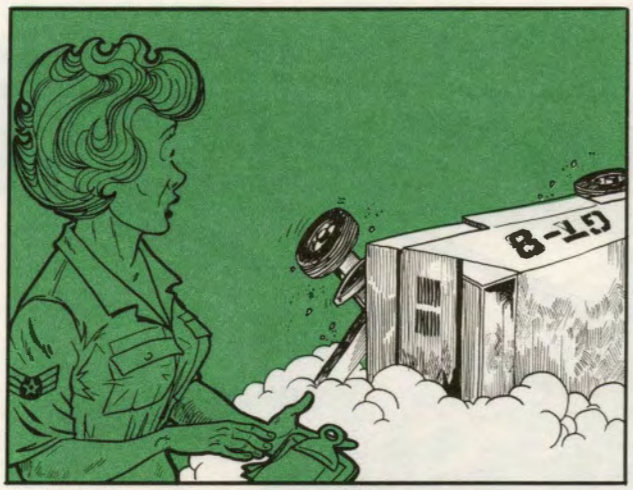
Although most of us in TAC don't routinely launch and recover our aircraft in tab vees (those concrete and steel structures that look like quonset huts), occasionally we deploy to locations where they're the norm. Next time you go, remember GT-8.

When the M-32-60 (dash-sixty) power cart that was hooked up to an F-4 wasn't able to give "air on two," the crew chief (trainee) called the expediter for a new unit. The expediter towed out dash-sixty number GT-8 behind his truck. On arrival, he noticed that one of the new unit's brakes was dragging; so the expediter helped the crew chief push it into the tab vee.

Once the Phantom started, the crew chief and the expediter pushed the unit outside the shelter. But because it was so hard to push, they only moved it straight out and then slightly offset to the right, just outside the path of the Phantom's wing tip. They didn't push it across to the left (where the dash-sixties usually rest) because they had trouble just getting it where it was.

When the F-4 crew taxied out of the tab vee, the pilot cocked the nose 45 degrees to the left, the normal procedure. Unbeknownst to the crew and undetected by the chief, the Phantom's exhaust was blowing directly on the power cart which was at six o'clock for ten to fifteen feet. Later, when the pilot added power to taxi, GT-8 was blown over and off the hardstand into the dirt.

We shouldn't be too surprised at what happened. The crew chief trainee wasn't qualified to launch without supervision and had recently failed the test



on marshalling aircraft. Yet she was assigned to launch the aircraft by herself. And it nearly killed GT-8. When we ask our people to do things that they aren't qualified to do, we are putting them in a position to get hurt. And no peacetime schedule, takeoff time, or deadline justifies that.

Mighty tight

While climbing after takeoff from a deployed location, an EF-111 pilot felt a slight vibration in the control stick every 5–10 seconds. No warning lights were on, and the aircraft was otherwise behaving itself. But soon the magnitude of the stick vibrations increased, and the aircrew noticed minor airframe vibrations too. So they headed back to base. When they lowered the landing gear in a descent through about 7,000 feet, the stick and airframe vibrations increased again.

And intermittently, the stick, of its own volition, would drive about an inch and a half fore or aft without any accompanying flight control change. The pilot turned off the pitch damper, but it had no effect on the aircraft's dancing. When the pilot lowered the flaps and slats and slowed the electronic Aardvark, the vibrations became severe and continued all the way to touchdown.

Troubleshooters found a loose roll rate gyroscope. With hydraulic pressure applied, whenever they jiggled the gyro, the control stick and horizontal stabilizers all wiggled. That's interesting — the *roll* rate gyro affected the aircraft's *pitch* stability. Because the F-111 has no ailerons, roll control is achieved with differential movement of the horizontal stabilizers. In this case, the roll rate gyro was sending many correction signals to the roll damper servo — more than it could respond to. So the damper oscillated too rapidly to drive the horizonal stabilizer actuators. The oscillations went through the pitch/roll mixer and appeared initially as stick talkback in the pitch axis. The looser the gyro became, the more severe the vibrations. Had the pilot turned off the roll damper, chances are the vibrations would have stopped.

Earlier, some technicians who needed to work in the area behind the roll and pitch rate gyros removed them. When the gyros were later reinstalled, one of the workers overtorqued the mounting screws. The threads on both the screws and their nut plates were stripped. The TO called for 30–60 inch-pounds of force, but for some reason, the worker didn't think that was enough.

We learned a lot about control stick talkback from this little mistake. But we're lucky we didn't lose the airplane in the process.

Mumble maintenance, cleared to cross

The Eagle maintenance step van was parked on a taxiway near the approach-end of the active runway waiting for clearance across. Meanwhile, some workers from barrier maintenance pulled their pick-up truck up short of the departure-end of the runway and called tower for clearance. They too were told to "hold short for landing traffic."

A few minutes later, an F-15 landed, and tower cleared *Eagle* maintenance across the runway. But the driver in the *barrier* maintenance truck thought the clearance to cross the runway was for him and pulled out onto the runway.

As soon as the driver and his wide-eyed passenger saw the aircraft rolling towards them, the barrier maintenance truck scampered off the runway. Whew. No harm done this time, but look at the potential.

We don't know the subject of the conversation

in the front seat of the truck, but it was apparently interesting enough to make the driver miss the first word of tower's transmission. That's a liability when two trucks that share the same last name of a call sign are sitting two miles apart at opposite ends of a runway both waiting to cross. Barrier maintenance, Falcon or Warthog maintenance, even fire extinguisher maintenance all sound a lot alike if you don't catch the first word. The same mix up could happen if a tower controller accidentally keyed the microphone a little late. Since more than one crew was waiting for clearance, maybe it would have helped if tower addressed the crew by their location as well as their call sign.

But I thought you did it

A couple of crew chiefs on swing shift were sent to remove the attaching bolt that connected the left bypass door to its actuator on F-15 tail number triple four. The overall plan was to cannibalize (can) 444, since it was already down for parts, in order to keep 137 flying when the rest of the world woke up and came to work.

When the troops arrived at 444, the aircraft forms were nowhere in sight. But the twosome went to work anyway. They climbed up on top of the aircraft, raised a panel behind the ramp that was in the way, removed the bolt, and gave it to the expediter. Then they buttoned up and went on to their next job.

Later, when the prescribed parts for 444's original malady arrived, she was repaired and returned to flying status. The attaching bolt in the bypass door was still missing, but no one who knew about it was around to tell, and it never made the aircraft forms.

About the time the pilot came out of augmentor, he heard a thump. His wingman pointed out that the left bypass door had been ripped from the aircraft and crashed into the left vertical tail. The aircraft landed safely. But the collision of the small panel with the aircraft's honeycomb and composite material ran up a $48,000-plus repair bill.

Later, someone retrieved the missing door. Troubleshooters found no evidence of an attaching bolt; so they checked the bolt's maintenance history. There wasn't any.

During an interview, a five-level crew chief said that he'd directed his three-level partner to find and document the forms. The three-level didn't remember it that way; he assumed the five-level crew chief would document the forms.

In fact, the whole operation didn't comply with the wing's policy; the production supervisor didn't give the expediter a can document number. So the bolt wasn't documented in the unit's can records, the aircraft status board in the maintenance control center, or the expediter's board.

The procedures were sound. Nobody followed them. Good thing 137 didn't need an engine . . .

The big T-SHIRT give away

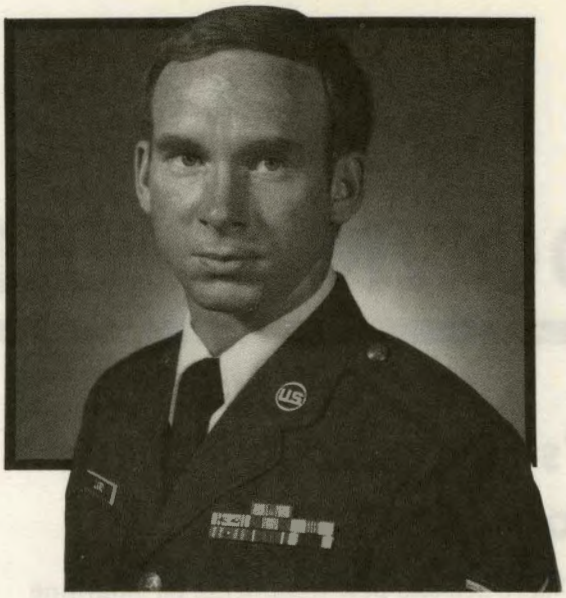
You may not have a story to tell that's as exciting as some of mine, but your contribution could place you in the ultra-elite circle of Fleagle T-Shirt owners.

Our readers clamor for more "There I Was" stories. But if we're going to print more personal experiences, you'll have to send them to us.

If we publish your war story, our readers will get more of what they like best. And you'll get a rustproof, nonmagnetic Fleagle T-Shirt woven from cholesterol-free cotton.

Send your story to *TAC Attack* magazine, TAC/SEP, Langley AFB, VA 23665-5001.

INDIVIDUAL SAFETY AWARD



SSgt Dwight G. Royal
57 AGS, 57 FWW
Nellis AFB, Nevada

STAFF SERGEANT DWIGHT G. ROYAL developed a single comprehensive training program for end-of-runway duties that included inspections, maintenance requirements, hazardous areas, and emergency procedures for the F-4, F-5, F-15, F-16, and A-10 aircraft. The program was immediately accepted for use by the 57 FWW training management division, and Sergeant Royal volunteered to conduct the training. Since the program's initiation, there have been no reportable mishaps involving EOR crew members; crews have developed the ability to make quicker decisions and take more precise action to save sorties and prevent in-flight mishaps.

Along with his excellent training program, Sergeant Royal was instrumental in having grounding points for the aircraft installed in the EOR area and initiated the actions necessary to have an emergency shower and eye wash installed.

Sergeant Royal is an avid believer in safety education and that every individual has the responsibility to identify and correct hazardous situations, both on and off duty.

CREW CHIEF SAFETY AWARD

SrA Michael D. Troia
59 AMU, 33 AGS, 33 TFW
Eglin AFB, Florida

AN F-15 was taxiing to the end-of-runway area for takeoff. As it passed by, SENIOR AIRMAN MICHAEL D. TROIA noticed fuel leaking from the number two engine bay doors. He immediately signaled the pilot to stop and began an inspection. He discovered a large amount of fuel dripping from panel 95R; he asked the pilot to shut down the number two engine.

Further inspection of the aircraft revealed that the main fuel manifold which fed the engine boost pump was defective. Had this leak gone unnoticed, the number two engine could have caught fire.

Airman Troia's quick response and immediate actions prevented a serious accident from occurring.

DOWN TO EARTH

It's your body— ask your doctor

There are two new treatments for **migraine headache sufferers.** Major John Steele, MD, from Wright-Patterson AFB recently found that a heart medicine called *verapamil hydrochloride* lessens the pain of a migraine headache. It works on the head the same way it works on the heart,

by relaxing blood vessels which relieves the throbbing pain. And Neil H. Raskin, MD, vice chairman of neurology at the University of California in San Francisco, thinks the intense pain from a migraine comes from the brain's inability to transmit *serotonin,* a brain chemical that dulls pain. He decided to use *dihydroergotamine* (DHE), which stimulates the effect of serotonin in the central nervous system, every eight hours for several days. It's not a cure, but his patients were headache free *without pain-killing, habit-forming drugs* for up to several weeks—long enough to start drug-free therapy.

So you bit into that chocolate nut bar and split a **tooth.** The dentist says you'll need a crown. Ask about *bonding* first. It was invented by Dr. Irwin Smigel, president of the American Society of Dental Aesthetics, and can be used to correct uneven teeth, to repair cracked or discolored teeth, and to close spaces between teeth. In bonding, an acid solution is applied to tooth enamel. A resin material is then put over the tooth and sculptured to the desired shape. Bonding needs no anesthetic because the tooth doesn't need to be cut down close to the nerve, it can usually be done in one visit, and it costs about 40 percent less than a crown.

More help is on the way for **glaucoma,** a disease of the eye caused from increased pressure on the optic nerve because the liquid inside the eye can't flow out. Untreated, the pressure can damage the optic nerve resulting in blindness. Dr. D. Jackson Coleman, an ophthalmologist at New York Hospital-Cornell Medical Center, uses ultrasound to melt a small spot of tissue in the eye, creating a new drainage channel. This treatment has an 80 percent success rate in patients who didn't respond to other treatment. And a new drug *Forskolin* is being tested and looks very promising according to Marvin L. Sears, MD, chairman of the ophthalmology department at Yale. Forskolin reduces aqueous fluid inflow into the eye, which works differently than *timolol maleate,* the drug now used for about 80 percent of all glaucoma patients, which increases the outflow of aqueous fluid. Timolol maleate has side effects and isn't recommended for people with cardiac or respiratory problems. So far Forskolin hasn't displayed side effects.

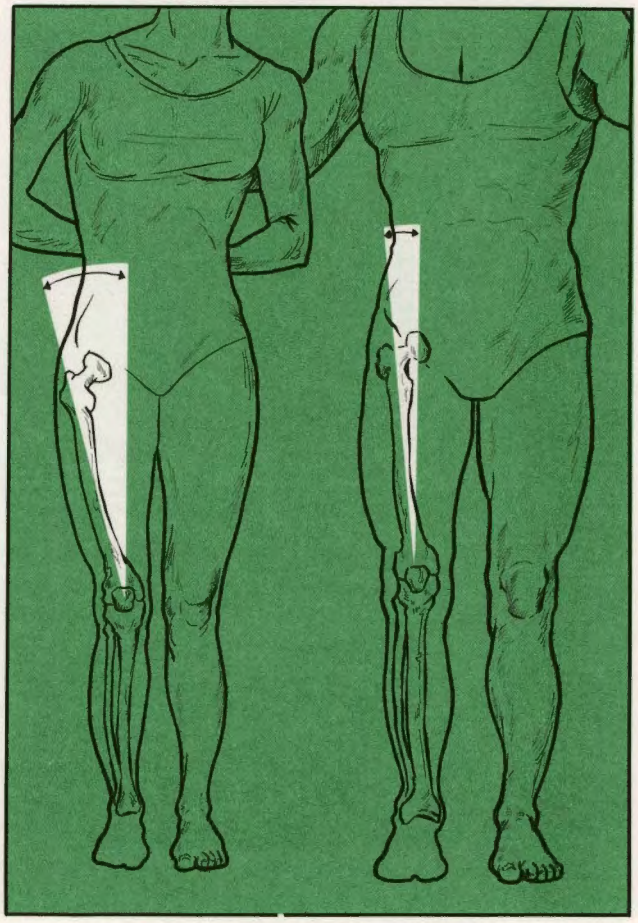
And instead of surgery for **kidney stones,** ask your doctor about the new kidney stone smasher called a *lithotripter.* It's an expensive piece of equipment, so only look for it at a large medical

center: Indianapolis; Boston; New York City; Houston; Gainesville, Florida; and Charlottesville, Virginia. Here's how it works: the patient is given an anesthetic and placed in a tub of water. Shock waves, generated underwater by an electrode, are focused on the stone until the stone shatters into tiny particles, which are passed naturally out of the body.

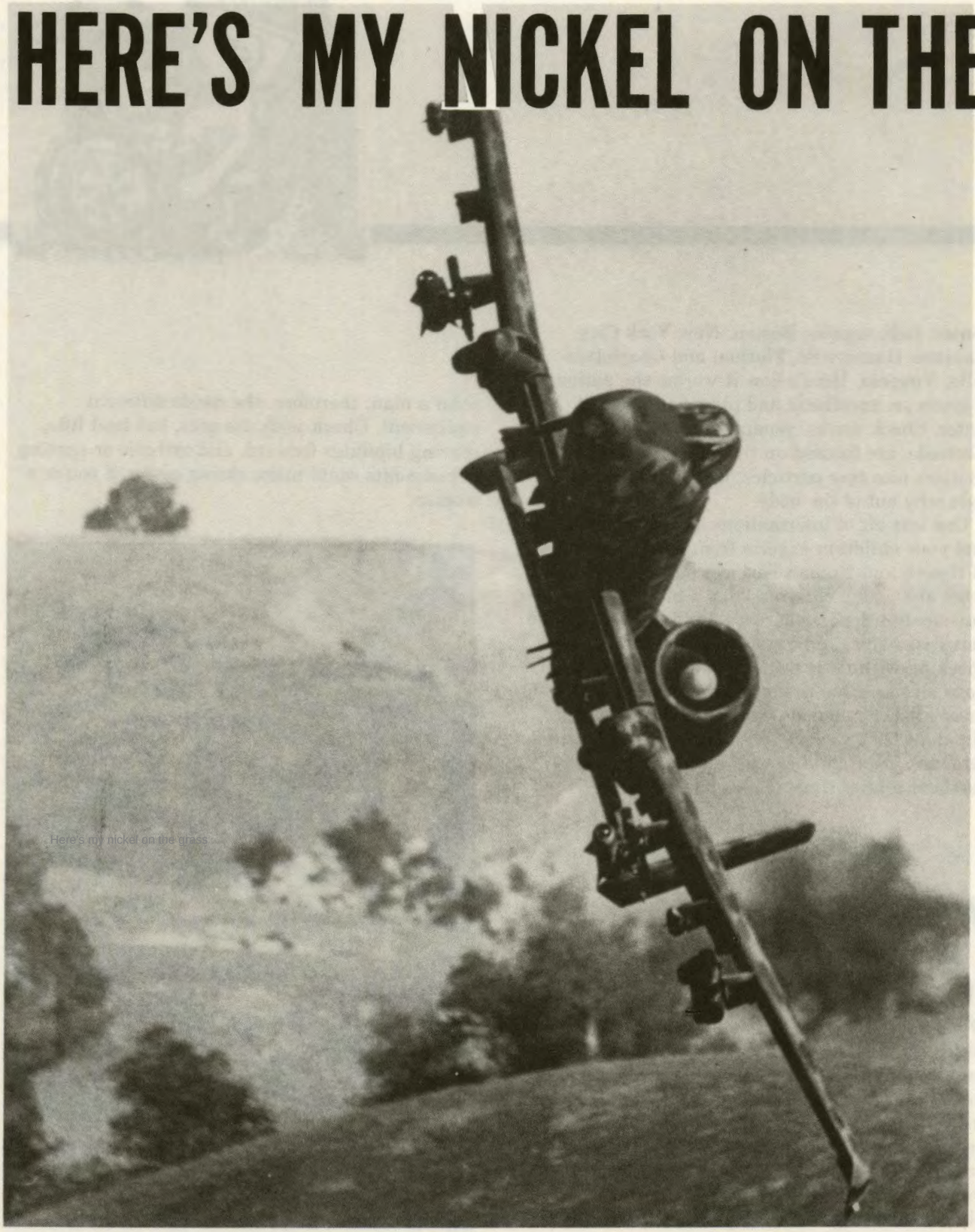
One last bit of information—about **vaccines and your children:** experts from the Department of Health and Human Services suggest that infants and young children with a history of convulsive disorders (seizures) should not receive the pertussis (whooping cough) vaccine without first checking with their pediatrician. These children have an increased risk of having vaccine-associated convulsions. Pertussis is part of the standard DPT vaccine (diphtheria, pertussis, and tetanus). Your child can be vaccinated for pertussis at a later time, if it seems advisable.

Women and skiing

"Come on, Hon. Just do this, it's easy." If you're a woman skier, maybe it isn't so easy. Women have several physiological limitations which cause some special skiing problems: excessive bending at the waist, knock-knees, sitting in turns, leaning back on skis, and leading turns with the hip. That doesn't mean women can't be great skiers. It does mean some adjustments are in order. The reason is elementary: men and women are built differently. A woman has wider hips, angled thigh bones, and narrower heels than a man; therefore, she needs different equipment. Check with the pros, but heel lifts, moving bindings forward, and orthotic or canting adjustments could make skiing easier if you're a woman.



HERE'S MY NICKEL ON THE



GRASS

By Col Coupe De Ville
Chief, TAC Flight Safety

The current upward trend in operator factor mishaps has everyone concerned. And the fix remains illusive . . . or does it? Maybe we have been so busy checking six that we forgot to check twelve o'clock too. I'm referring to our young/inexperienced aircrews at six and the more . . . ah . . . uh . . . mature and experienced fighter pilots holding the twelve o'clock position.

If you are a front-line supervisor, we both know who has occupied much of your cognitive faculties most of your waking day and perhaps been the subject of a few nightmares too—the new guy, Blue Four. By contrast, how much time have you spent worrying about the jock who has 1,735 flying hours, 500 of that in your jet? That's right, we shouldn't *have* to worry about our veterans—well, not as much as Blue Four anyway. But think about it . . . when was the last time you heard about a tactical Class A mishap where 2d Lt Joe Bagadonuts was the fighter pilot?

You haven't, and that's my point. We have worked long and hard seasoning our new fighter pilots. In fact, we have molded some real top guns. To do that, our supervisory policies as well as our training checks and balances have all leaned towards the inexperienced pup, and rightly so. But we can't afford to forget about the "rocks" in our units. It's the old heads we've been digging out of the bottom of smoking holes.

Let's take a look at our track record thus far (through mid-October) in 1984: of the thirteen ops factor mishaps we've had, the pilots' total flying time fell somewhere between 580 and 4,403 hours. The median is 1,735. Their time in the aircraft ranged from 165 to 1,070 hours, an average of 477 hours UE. The average amount of fighter time rounded out to 961 hours. This isn't Blue Four we're looking at, friends.

We need to sit back and take a hard look at the way we're doing business today. Our commitments are staggering: sortie rates are climbing, realistic training is a way of life, deployments are up, personnel turnover rates are high, and we seem to face a continual shortage of IPs and flight leads. The list goes on and on. No one said it would be easy, and we certainly don't want to slip backwards. But if we keep depleting our most important resource, we will be *forced* backward.

We can only ask so much from our old heads. Ask? That's a laugh. Their attitude is A^2. Their experience and performance is life-sustaining for the unit. You never have to ask. They are always one step ahead. But . . . what's causing them to stumble?

Down in Cajun country there's a saying (translated from French), *"Better to pass yourself in the shade awhile than to pass out."* Could this be our problem? How many jobs (besides SOF, IP, Squadron Supe, Flight Lead) do they really have?

When have they had some time off that they could use productively? When, if you can remember that far back, have they flown together—just to hone their own skills? When have they been looked at through the same piercing eyes that hawk Blue Four?

Some of us have been lucky. But we all know that the pace, the pressure, and the competitiveness are additive—albeit different in and among fighter squadrons—but additive. We need to check twelve o'clock more often with the same scrutiny we use when checking six.

One last nickel . . . and when you are checking twelve, remember the fuse is a different length for each of us. ➢

TAC tips INTEREST ITEMS,

Tac tips Interest items

Follow through

A two-ship was practicing intercepts out in the Whiskey (warning) area one morning under GCI control. During the second intercept at Angels 26 (26,000 feet MSL), the attacking pilot noticed he was having trouble visually acquiring the target aircraft. He'd been airborne about 40 minutes and was beginning to notice his personal hypoxia symptoms. So he selected 100 percent oxygen and turned up the regulator pressure. His symptoms persisted, however. He told GCI to make the next setup a join-up for RTB. *Alles gut, ja?* Not so fast.

His vision began to blur. And he began to have trouble analyzing instrument readings. So he told GCI to forget about the rejoin; he wanted to go home now, single-ship. En route, he cruised back at FL190, which probably didn't help matters.

Once on ILS final approach the pilot must have still been suffering residual effects of hypoxia, because the ILS indicator wandered from side to side. The pilot could only see about half of any instrument he looked at and had trouble correlating the readings.

About seven miles from the runway, RAPCON told him he was too far left for a safe approach and proceeded to give him vectors for a GCA. But the pilot had just as much trouble responding to the controller's instructions as he did chasing the ILS indicator. Finally, the controller issued gyro-out directions. Three miles out, the pilot saw the runway and landed successfully.

While taxiing back, he switched the radio to maintenance control and tried to relay the aircraft's flying time. But he couldn't compute it and finally gave up. He also called the aircraft Code III but couldn't say what the trouble was.

Later maintenance found a leak in the oxygen system.

The pilot *started* in the right direction when he selected 100 percent oxygen and higher pressure—but he didn't *follow through*. By not declaring an emergency or telling either the other pilot or GCI that he was having a problem, he didn't get any help. And he needed some because he wasn't aware of his deteriorating judgment.

Recognizing our personal hypoxia symptoms is important. We spend time and Uncle spends money every three years refreshing our memories in the chamber. But recognition is not enough. Follow through must include things like declaring an emergency, checking our equipment, and descending rather than cruising at FL190.

MISHAPS WITH MORALS, FOR THE TAC AIRCREWMAN

Instant reactions Just add...analysis

What's the first thing you do in the simulator when the Master Caution light comes on? That's easy—look at the telelight panel, see which lights are shining at you, and do what it takes to make them go out, right? Not so fast. This system of problem solving usually works OK in the simulator, but it may breed bad habit patterns for airborne emergencies. It lacks a few basic life-preserving steps like *maintain aircraft control* (knock off whatever you're doing and fly the jet) and *analyze the situation* . . . Sometimes instant reaction is not warranted or welcomed.

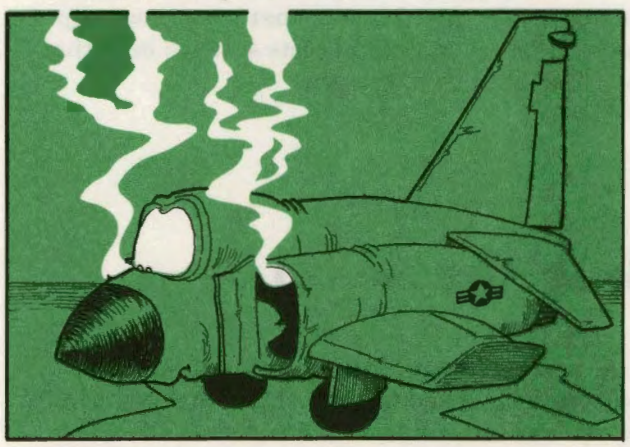
What's the worst thing that could make a bunch of lights come on? How about a flameout? A pilot flying a two-engine fighter (read "Multi" by some Falcon pilots) noticed the Left Generator, Left Oil Pressure, and Left Hydraulic system lights during his pull-up for a closed pattern. In the base turn he reset control augmentation switches and troubleshot his hydraulic system, but never took a second to check the left engine's rpm or temperature gauges. Guess what lights come on when your left engine flames out . . .

When your Master Caution light lights up your cockpit, take a glance at the tachs on your way to or from the telelight panel. You might discover an immediate need to employ single-engine procedures instead of coping with a perceived multiple emergency.

Air on t-t-two

It was damp and cold when an F-4 crew climbed into their Phantom for a night intercept mission. When the crew chief coaxed the auxiliary power unit into producing enough air to turn the engine at 10 percent rpm, the pilot began the normal engine start sequence: he pushed the ignition button, shoved the throttle forward to give the engine some gas, then brought the throttle back to idle and waited for a lightoff. And waited. Finally, at 18 percent (13-16 percent rpm is normal) the engine instruments showed signs of life back there.

But the lightoff seemed unusually loud and smoky which caught the full attention of the



crew chief and the crew. The pilot shut down the engine and ordered an emergency ground egress. The crew chief continued to motor the engine

with air from the APU, and soon the smoke dissipated.

Whew. Everyone was OK and apparently so was the airplane. The pilot's quick exit from the cockpit wasn't uneventful though. As he climbed over the windscreen, he slid down the radome (good thing it was a C-model with no pitot boom at the pointy end), and dropped about five feet. Fortunately, he fell into the waiting arms of the assistant crew chief.

In egress training we re-enforce our knowledge of procedures with hands-on training. We pull handles and scramble out of the cockpit trainer, but we don't really practice for that long drop. Remembering the long way down is up to us. So is remembering to use cold weather procedures when they're appropriate.

The temperature on the ramp was 20 degrees. We don't know why the pilot didn't activate the ignition button early at six percent rpm to dry out the wet or frozen igniter plugs before dumping wet JP-4 fuel on them. We do know the result was delayed ignition in a fuel-rich environment.

Since the flight manual doesn't *officially* define cold (for example: below freezing, so many degrees Centigrade, or cold enough to freeze the chrome on a trailer hitch), maybe it didn't seem cold to the pilot. More likely, he just didn't think about using the F-4 cold weather starting procedures.

The nitty-gritty little procedures that we don't use every day are the ones that sometimes slip away from us. Stan/Eval tests seem to bear that out. It's up to us to prevent.

Into the wind

An experienced sport parachutist suffered a separated shoulder when he landed during gusty surface winds with his back to the wind. While it's not a fair analogy to compare jumping out of perfectly good airplanes for the thrill of it with our emergency jumps, the incident does point out that if experienced parachutists make mistakes, aren't we at least just as likely?

If you fly in an aircraft equipped with an ejection seat, pay attention to a couple of lessons that this fellow learned the hard way. They may help reduce the chances of an injury during your next parachute landing.

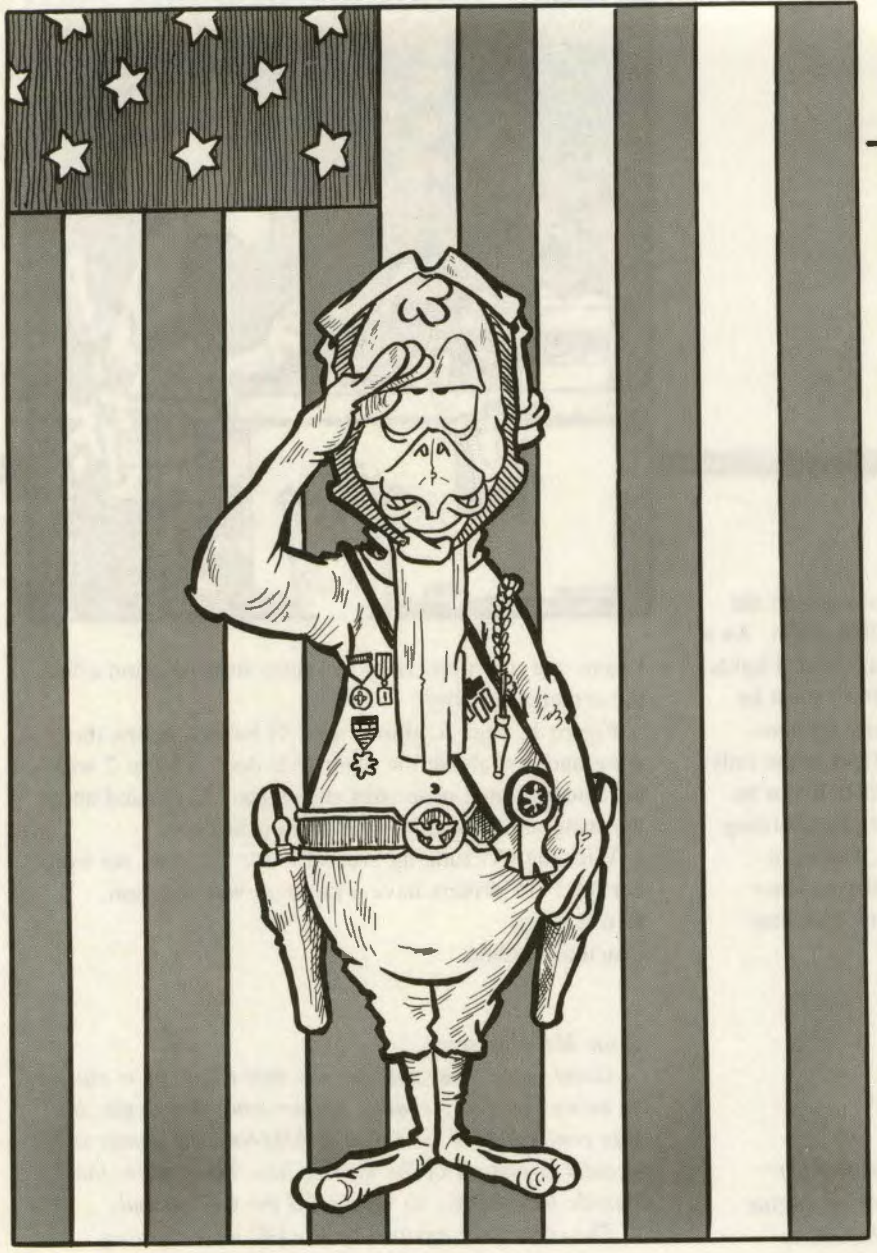
First, landing facing *into* the wind is critical.

Parachutes modified with the four-line jettison feature produce a modest amount of forward motion to help decrease oscillations. This forward speed will partially offset your groundspeed caused by the wind *if* you're turned into the wind. If not, the two speeds are additive. Make your turns well above the ground because pulling down on either four-line jettison handle or either riser will temporarily increase your rate of descent.

Second, strong or gusty winds increase the likelihood of being dragged and/or injured. At around thirty knots of wind, a parachute landing without injury becomes unlikely. But consider the alternative. Since we don't often have the luxury of choosing only calm days to fly, we need to keep in mind the actions that will help us the most in windy conditions—for releasing ourselves from the parachute.

When we're faced with landing in the water, that means as soon as we're feet-wet. Landing on terra firma calls first for a good plf (parachute landing fall), then releasing the chute. Delay in releasing the hardware will mean being dragged. Whether being dragged over the ground or water, the procedure is the same: grab both risers, roll onto your back, and release *both* parachute fittings.

Adapted from
Weekly Summary



FLEAGLE SALUTES

Sgt Steven R. Gardner, 366th Aircraft Generation Squadron, 366th Tactical Fighter Wing, Mountain Home AFB, Idaho. Sergeant Gardner was dispatched to do an operational check on an F-111A's generator that had failed to come on the line. After the first engine run, the generator control unit was replaced. During engine restart, the ground crew yelled "Fire." Sergeant Gardner called the tower for a fire truck and chopped the throttles off. He actuated the switch to discharge the extinguishing agent and depressed the fire push button. But the button did not remain in, so he pushed it two more times. His actions succeeded in extinguishing the fire. Sergeant Gardner's calm and professional reaction saved a valuable aircraft.

Sgt Michael A. Abeyta, 355th Aircraft Generation Squadron, 355th Tactical Training Wing, Davis-Monthan AFB, Arizona. Sergeant Abeyta had to quickly change a main tire on an A-10 between flights. When the new tire was brought to him, it only had 66 pounds of air. The tire pressure should have been 180 pounds. After putting air in the tire, he discovered a slow leak. The leak was small enough that it could have been serviced and flown, but after a two-hour flight, the tire would have been flat. So he insisted on a new tire. Sergeant Abeyta's actions prevented the possible loss of an aircraft.

1Lt John D. Gytri and **1Lt John R. Fritz,** 12th Tactical Reconnaissance Squadron, 67th Tactical Reconnaissance Wing, Bergstrom AFB, Texas. During a Pave Tack low level navigation mission flown 500 feet above the ground at 480 knots, Lieutenants Gytri and Fritz heard a loud pop from one of their engines and then saw the right Fire light. Although the fire warning subsided when the throttle was retarded during the climbout, Lt Fritz noticed vapor trailing the aircraft, so Lt Gytri shut down the right engine. They diverted their heavyweight RF-4C to a civilian airfield with only 6,920 feet of runway and no arresting gear. Lt Gytri skillfully flew a single-engine approach and stopped the aircraft without incident. Their decisive, coordinated efforts resulted in recovering their Phantom despite extensive damage caused by partial turbine failure.

LETTERS

Dear Editor

In your July issue, I have a question concerning the write-up of Capt Danner as Aircrew of Distinction. As a Naval Aviator, I know that all Functional Check Flights (FCF) and Post Maintenance Flights (PMCF) must be flown in VFR conditions. If the hop cannot be completed totally VFR, the Commanding Officer is the only one that can waive this restriction if he feels it can be completed safely. Capt Danner did a fine job returning an ailing aircraft to home field; however, I think it would have been a lot less stressful had the weather been VFR. Are the Air Force requirements different from Navy?

Tom Pautke, LCDR, USN
VA-45 NASKW
Key West, Florida

Dear LCDR Pautke

You bring up an interesting point. Capt Danner was flying the F-16 on an FCF because of an engine change. According to the Hill AFB Supplement to TACR 60-1, the minimum weather required (by the Wing Commander) for such an FCF is a 12,000-foot ceiling and 3 miles visibility. The takeoff weather was clear skies with 3 miles visibility. The FCF was performed entirely in VMC, as required by TO 1-1-300. During recovery, however, Capt Danner entered a cloud bank west of the field while accomplishing his BUC airstart. When the engine was once again producing usable thrust, Capt Danner broke into the clear about 10 miles from the base.
ED

Dear Editor

I read with interest the article on how nose strut inflation effects takeoff rotation (August 1984). However, I have one question. How can nose strut inflation effect the center of gravity?

Figure 1, page 5, shows the CG located below the wing and just above the main gear door. Figure 2 with the underinflated nose strut shows the CG located above the wing and forward of the main gear door.

With the CG running around loose like that, no wonder the F-16 drivers have a problem with rotation.

Ken Ramsay
Cincinnati, Ohio

Dear Mr. Ramsay

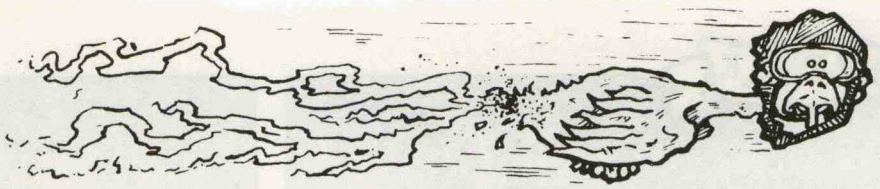
Good catch. Our sources say that Figure 1 is closest to being correct. Actually, shown from this angle, in this configuration (clean + 2 AIM-9s), the center of gravity is just aft of the missile fins. That makes the missile look funny, so we moved the CG symbol.

The contractor assures us the GC isn't running around loose; we're not so sure about our art editor.
ED

Need More *TAC Attacks* ?

Don't cuss. Don't complain. Don't call the base commander or chaplain's office. Just contact your unit's customer account representative (CAR) who's in charge of unit publications. If you need more *TAC Attacks*, he or she can help. Remember, one copy for each ten folks.

TAC TALLY



	TAC			ANG			AFR		
	OCT	THRU OCT		OCT	THRU OCT		OCT	THRU OCT	
		1984	1983		1984	1983		1984	1983
CLASS A MISHAPS	3	19	22	1	6	10	0	1	1
AIRCREW FATALITIES	2	15	8	0	2	9	0	0	1
TOTAL EJECTIONS	3	14	22	1	5	9	0	2	0
SUCCESSFUL EJECTIONS	3	12	19	1	5	4	0	2	0

TAC's TOP 5 thru OCT 84

TAC FTR/RECCE	
class A mishap-free months	
38	58 TTW
31	4 TFW
27	405 TTW
21	1 TFW
20	33 TFW

TAC AIR DEFENSE	
class A mishap-free months	
141	57 FIS
94	5 FIS
91	48 FIS
50	318 FIS
41	87 FIS

TAC-GAINED FTR/RECCE		
class A mishap-free months		
150	188 TFG	(ANG)
142	138 TFG	(ANG)
141	917 TFG	(AFR)
119	114 TFG	(ANG)
108	183 TFG	(ANG)

TAC-GAINED AIR DEFENSE	
class A mishap-free months	
124	177 FIG
90	125 FIG
73	119 FIG
57	107 FIG
48	147 FIG

TAC/GAINED Other Units		
class A mishap-free months		
183	182 TASG	(ANG)
167	110 TASG	(ANG)
163	USAFTAWC	
155	84 FITS	
97	552 AWACD	

CLASS A MISHAP COMPARISON RATE

(BASED ON ACCIDENTS PER 100,000 HOURS FLYING TIME)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
TAC	1984	3.4	3.4	2.8	2.0	2.6	3.5	3.0	3.0	3.0	3.2		
	1983	6.9	5.3	3.4	3.8	4.0	3.8	4.5	4.1	3.9	3.7		
ANG	1984	0.0	2.3	1.5	2.2	2.6	2.1	1.8	2.1	2.3	2.5		
	1983	9.1	7.0	4.4	4.3	3.4	4.2	4.8	4.2	4.7	4.3		
AFR	1984	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	2.7	2.5		
	1983	0.0	0.0	0.0	0.0	0.0	0.0	3.6	3.1	2.8	2.5		

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FLEAGLE
DECK TH' HALLS WITH BOUGHS OF HOLLY...
IT CAME UPON A MIDNITE CLEAR...
HARRISON
NICE.
BUT SOME OF US STILL MISS TH' TRUE MEANING OF CHRISTMAS.
EVEN IF GIFT GIVING, TREE TRIMMING AN' CARD SWAPPING DON'T TURN YOU ON, YA' MIGHT JUS' TRY CARING.
©STAN HARRISON 1984
BECAUSE IN THIS TIME OF SO MUCH UNREST IN SO MANY PARTS OF OUR WORLD, TRY TAKING A FEW MINUTES OF THIS VERY SPECIAL SEASON AN' THINK OF A WAY TO HELP THE OTHER PERSON.
HE WOULD LIKE THAT.
OH... HAVE A MERRY CHRISTMAS AN' I'LL SEE 'YA NEXT YEAR.