

# *TAC ATTACK*

AUGUST 1988



# ANGLE OF ATTACK



This month I'd again like to stress the need for getting back to basics in flying airplanes which I mentioned briefly in the May issue. Have you noticed that immediately following a particular mishap, you hear a lot of words about how to avoid that specific type of mishap? As a result, it raises your awareness and we usually go for some time without having another one of that kind. Unfortunately, we've recently experienced a lot of mishaps in which the cause was forgetting the basics of flying. Everyone may have their own idea or definition of what "the basics" are, so let me try to define them for you. They've been around as long as we've been flying airplanes and they're just as applicable today.

The first basic is *maintain aircraft control*. That's an absolute **must** before you do anything else. Am I talking only in the physical sense of flying – the stick and throttle part of the business? No! There are also a lot of outside inputs which compete for your attention whenever you're flying or coping with an emergency. ATC may be telling you, "Turn left." The tower folks want to know your intentions in order to coordinate recovery crews. They're all doing their jobs properly and you wouldn't want them to do anything less. However, it is **YOU** – not lead, not the SOF, not the wing commander – **YOU** are the person that must maintain aircraft control. If you need to tell tower to "standby," do it. If ATC hasn't given you the clearance you need, tell them what you're going to do and they'll clear the path. If you need the SOF's help in getting something done, tell him and he'll see to it. Once

you've done all that, then you can get on to the second and third basics: *analyze the situation* and *take proper action*.

For those of you who don't fly, adapt this same set of rules to your operations when things are not going well. Someone must maintain control when there seems to be no established system or set procedures.

We've been stressing complacency a lot lately and it has raised our awareness even higher. Some of us have become so aware of it, in fact, that we can almost smell it.

*Summer recreation*. We're doing good in the area of sports and recreation-related mishaps. We need to keep up our awareness in those areas, but I'd also like to say, "Keep up the good work."

We here at TAC Safety would like to congratulate the 33d Tactical Fighter Wing, Eglin AFB, Florida, as the 1987 recipient of the USAF Colombian Flight Safety Award. This award recognizes the 33d Wing as the unit with the best safety record in the fighter, attack or reconnaissance business in the Air Force. Congratulations, pardner.

*Jack Gawelko*  
JACK GAWELKO, Colonel, USAF  
Chief of Safety

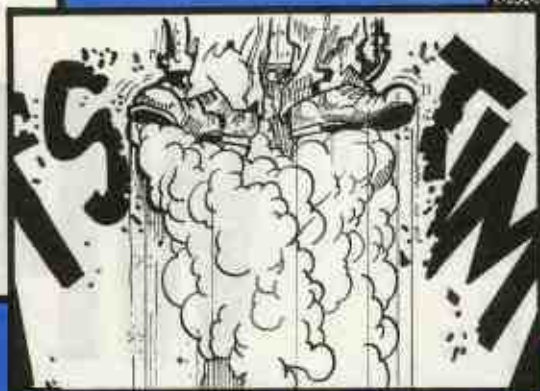
Jack Gawelko, Colonel USAF Chief of Safety

# TAC ATTACK

DEPARTMENT OF THE AIR FORCE



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### TACSP 127-1

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# WHEN IT

Just like every other aircrew going out to fly a TAC fighter sortie, Capt Scott N. Phillips of the 70th Tactical Fighter Squadron, Moody AFB, Georgia, was not expecting to eject from his F-16. It was just another "business as usual" type of day. At least that was what he thought. But, let's allow Capt Phillips to tell you in his own words what happened.

■ ■ ■

It is a cool, crystal-clear day – the kind that makes you wonder why they put flight instruments in fighter aircraft. It is my second upgrade ride since I got back from RTU four months ago – a BFM recurrency sortie. I can hardly contain a smile when my flight lead taxis out with wing tanks versus my centerline. *He won't be able to help being a disadvantaged bandit today.*

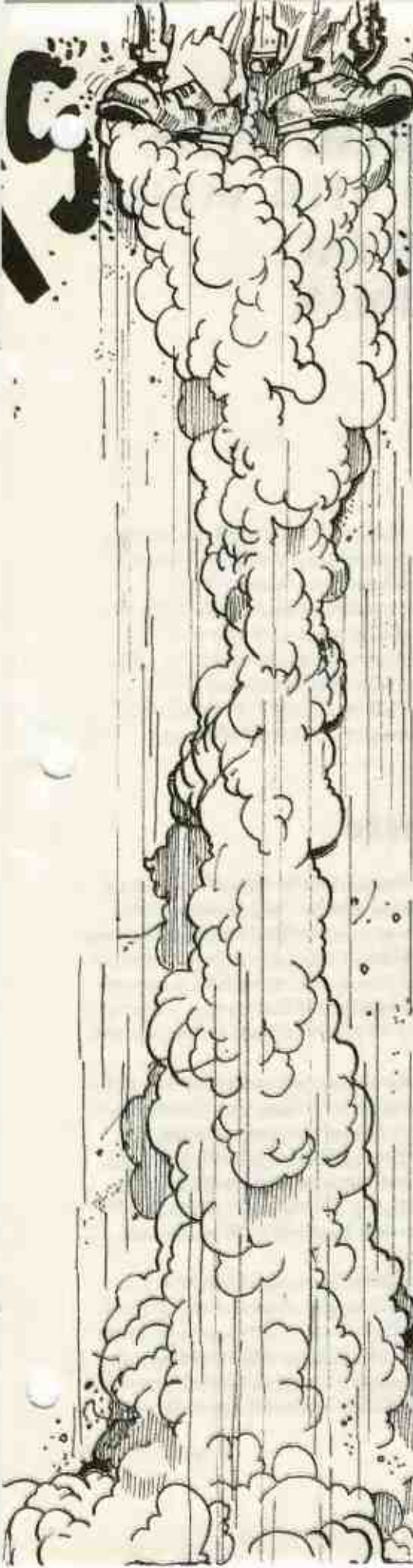
We arm and taxi into position to take off. My flight lead releases brakes, and I watch as his afterburner makes his tailpipe light up like a car cigarette lighter. Fifteen seconds after his roll begins, I turn the jet loose and advance the throttle first to Mil, pausing a couple of seconds, then on to the extremes of the upper left hand quadrant. There is nothing quite as impressive as the five kicks that Pratt and Whitney delivers as the afterburner lights on

a cool day.

Before you know it, it is time to rotate and at the first thought of rotation, the jet leaps into the air. Whoa . . . better get the gear before I overspeed them. There goes 250, time to cancel AB and save some of this gas for the gunshots sure to be had later.

**Thump!** What's that – a compressor stall? I'd better zoom. No zoom here, the jet just keeps rolling and yawing right. **I don't have control!** My mind races and the thought of dying flashes by. Just before my view is totally obscured by flames licking over the canopy, I realize my one chance of getting out of this alive is located between my legs. I find the handle, close my eyes and pull along with a prayer for ACES II to do its magic. I then wait for the reassuring tug of opening shock, if it occurs. I don't have to wait long, and the relief of having 100 feet of air between me and the ground is indescribable.

I prepare for the tooth-jarring PLF (parachute landing fall) I remember from parasailing at UPT, but am pleasantly surprised by a soft landing on the moist ground between the runways. I disconnect my parachute, stand up, get rid of my seat kit and helmet, and gaze quickly at the burnt grass and an unrecognizable heap of rubble that



# IT WAS TIME TO GO

was the high-tech fighter I had been in only seconds before.

As the sound of 20mm ammo firing off in a popcorn-like frenzy filled the air, I was whisked away by rescue vehicles before the enormity of what had just occurred could sink in.

Was this ejection decision so obvious that any pilot could have made it, or was there something in particular in my training over the past six years that may have helped me in my decision-making? I believe three things were instrumental in developing my mindset about ejection and emergencies in general. The first is the phrase we've heard since Day One of pilot training which is universal, regardless of the particular critical action/boldface procedures. That phrase is **maintain aircraft control**. When a pilot decides to execute boldface procedures, he has already progressed to the "analyze the situation" step. The second type of training that I think was instrumental was accomplished in the (Ugh!) simulator. I have been put in several situations in the simulator where I had to make the decision to eject and go through the motions of pulling the handle. It was not in an EP (emergency procedures) environment, but rather one where learning versus evaluation was the top priority. The sim IP

who says "Don't really pull the handle" is cheating the pilot out of valuable habit pattern reinforcement. Finally, making as many of the time critical decisions as possible before even stepping out the door to fly will make the reaction to an actual situation more timely. I am living proof that the emergency procedures training (SEPTs, simulators, CAPs) that we all grumble about is well worth the effort. ➤

#### Editor's Note:

Shortly after takeoff, the first stage of the high pressure turbine in Capt Phillips' jet failed, resulting in catastrophic engine failure. Large pieces of the turbine exited the aircraft through a fuel cell. Hydraulic pressure was lost, all flight control wire bundles to control surfaces were severed and a massive fire began.

The lack of response to his stick inputs and the visible flames racing up over his cockpit were all that was necessary for Capt Phillips to determine that the time had arrived to eject from his rapidly disintegrating aircraft. It was time to go. Had he delayed his decision for longer than two seconds, he would have been outside the safe ejection envelope.

# TAC tips

## INTERESTING ITEMS, MISHAPS WITH MORALS, FOR THE TAC AIRCREWMAN

### The birds are coming

Three pigeons – Cooley, Lewey and Dooley – land atop a beam and begin to discuss the old days when life was simpler and they alone shared the skies.

“No air traffic control, no ground-controlled approach, no rules and regulations - just go out there and fly,” Cooley says to his young admirers.

Cooley, you see, is a world traveler. He’s seen plenty of his feathered friends FOD engines – the seagulls in coastal areas as well as swallows, meadowlarks, hawks, owls and many others around the country. Cooley stresses that now there is a lot of stiff competition for the airways.

Not long ago, all men could do was stand on the ground and dream of soaring as the birds did. Now that we have achieved that feat, we are frequently in conflict with those same creatures that inspired

dreams of flight. Even with sophisticated radar and air traffic control systems, our costly machines of the air will readily succumb to an ingested bird.

Be alert. This is the time of year to not only know your “bird,” but to know your *birds* as well. Cooley, Lewey, Dooley and even Fleagle are out there flying with no radar, no radio, no clearance and no clue. (Adapted from article by AKAN T. M. Southwell, *U.S. Navy Weekly Summary of Aircraft Mishaps*)

### Whoa there

An F-16 pilot was holding for takeoff sequencing following a local exercise “elephant walk.” His holding location was on an inclined section of the ramp facing a hangar. While holding, he suddenly began to notice the smell of fumes and a minute later, several nearby pilots informed him of fuel pooling to the left of his aircraft. The F-16 pilot shut down the engine with the throttle.

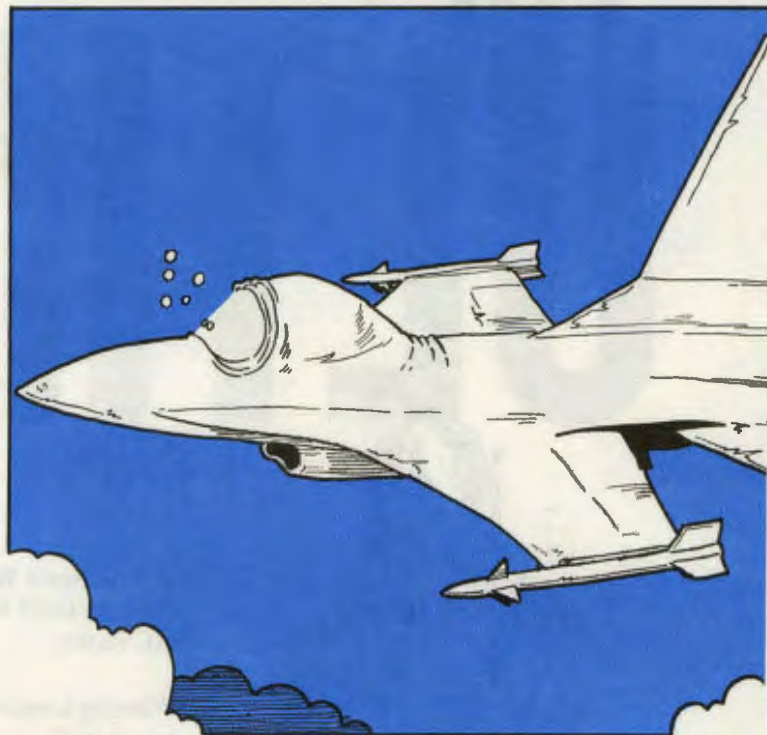
While waiting for emergency crews to arrive, he felt his aircraft suddenly start rolling. He attempted normal braking and cycling of the parking brake, but neither worked. Eventually the right wing section and nose impacted a metal railing, bringing the aircraft to a grinding stop. The radome, the number 7 pylon, a missile seeker head and a 370-gallon tank were all damaged.

What could this fellow have done to prevent this unorthodox and undesirable method of stopping his jet? While waiting for chocks to arrive, he could have used his parking brake instead of the toe brakes. In the F-16, once the engine is shut down, you have only JFS/brake accumulators to provide hydraulic pres-



sure to the brakes. If you hold the aircraft with the toe brakes, you can expect to lose all braking after 75 seconds. With the parking brake, accumulators should not be depleted.

Unexpected situations like this are sort of like defensive driving. In order to be ready when the unexpected happens, you've always got to ask yourself, "Where would I go from here if this . . . or this . . . or this happens?" If you don't, you may find yourself up against a rail as well.



## Comm problems

Maj Paul Herrmann  
507 TAIRCW/DO  
Shaw AFB, SC

On a recent day/night out-and-back, one pilot used the scheduled alphanumeric callsign for that day's off-station sorties. Unfortunately, another relatively new squadron pilot, scheduled for a cross-country sortie that same night, used the alpha portion of the off-station callsign but added his local area static numeric digits and came up with an identical callsign. As a result, both pilots unknowingly presented air traffic control (ATC) with two separate aircraft inbound to the same destination with identical callsigns. The only difference was that their arrivals were separated by 40 minutes.

One would hope that a mistake such as this couldn't go undiscovered until it resulted in a mishap. In this situation that was true, but the conflict was not discovered until both pilots were on the ground filing for return sorties to home base. We were fortunate this time that this story ended as well as it did.

Schedulers, command post controllers and base operations personnel can all help keep this one from happening again. Also, a word about alphanumeric callsigns in squadron in-briefs for new guys would help keep "Green 16" out of trouble.

## In the ear

The F-16 pilot was an RTU student, flying solo on a BFM mission. The flight went normally until he entered the training area and set up for the first engagement. After being cleared to maneuver, the pilot began a hard 6-G turn while trying to keep the other airplane in sight. He immediately experienced a feeling of vertigo, and he couldn't focus on the other aircraft. He knocked off the engagement; as he rolled out, the sensation disappeared.

The pilot figured the sensation was a one-time occurrence caused by a combination of sun, clouds, obscured horizon, head movement and high G-forces. So he and his instructor decided to give it another try. They set up for another engagement, and again the pilot began a hard 6-G turn. Again he felt the same sense of vertigo. This time they called knock-it-off for good, declared an emergency and headed for home. The pilot was met by the flight surgeon and taken to the hospital where examinations showed an ear infection.

The ear — that's where we have all those delicate mechanisms that keep us balanced. If we have the slightest suspicion that it isn't up to par, we shouldn't fly. Not taking off with a known discrepancy applies to us as well as the airplane.

# THE ULTIMATE

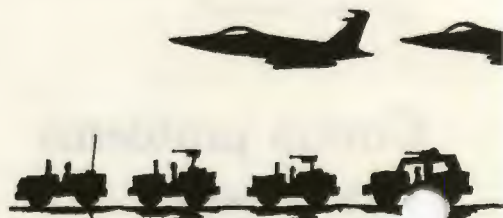


Lt Col Scott Wales  
ANG/AFRES Advisor  
TAC Safety

“Winning is not everything – it’s the only thing.”

– Vince Lombardi

In war, as in sports, the only real objective is to win. All our efforts are in support of that purpose. In order to realize that goal, an important weapon is currently under development by the Air Force. Although this weapon is not “new” as such, it represents an evolutionary approach to the weapons design process. It features composite materials and is “very low-observable” with regard to radar reflectivity. It is a refinement of existing weapon systems which will be an indispensable part of the man/machine interface well into the twenty-first century. The weapon is non nuclear, of conventional design, and expected to be compatible with existing hardware. The initial cost to the Air Force is negligible; upkeep and maintenance costs, once completed, are expected to be moderate. Replacement cost of an individual unit is set at \$330,000.



The specifications for this weapon system indicate that it will have sophisticated programmable features, although the upload process may be long and have somewhat unpredictable results. The system will be enhanced with non-artificial intellect; as such, it will be capable of recall during flight. Fuel costs are expected to be low, and basic design has been enhanced so the system can run on a variety of fuels. Exotic fuels can be used, but these may alter performance in unexpected ways. Fuel should be added several times per day but, if necessary, the system may continue to run for several days without fuel. If that occurs, however, significant degradation to normal systems operation should be anticipated.

As previously noted, the most severe limitation this weapon system has is occasional unpredictable operation. Although the system is



# WEAPON

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**Units are designed to be interchangeable, and have a service life in excess of twenty years.**

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quite sophisticated and technologically advanced, individual units are subject to unusual aberrations and temporary limitations. Extensive attempts have been made to standardize production techniques and impose strict quality control measures. Despite that, spurious random inputs have frequently destroyed individual units and damaged others beyond economical repair. Units are designed to be interchangeable and have a service life in excess of twenty years. Not all units, however, will be retained for

that period.

In case it has escaped you so far, the ultimate weapon is *you*, the aircrew. Without you, our sophisticated weapons are useless. Because we rely heavily on technology to maintain our edge in time of war, this reliance places an increased burden on you – the individual aircrew. We cannot afford not to “fly smart” because our dependence on quality and sophistication instead of numbers make the loss of any one aircrew or aircraft much more significant to us than it is to our probable adversaries.

The “TAC Tally” which appears each month in these pages bears witness to the tragic (and normally preventable) losses of our “ultimate weapons.”

Our mission is to fly, fight and win. How many times have you heard those words? Have you ever given much thought to them or the

message they imply? Like many catchy phrases, the stated mission of the Air Force often becomes only background noise to our day-to-day activities.

Nonetheless, this statement of our mission should not be news to you. The primary objective of a large standing military force is

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**The primary objective of a large standing military force is clear - the prevention of war by implied threat of force; thus our TAC motto “readiness is our profession.”**

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# THE ULTIMATE WEAPON



**The main reason safety folks are in business is to help maintain that combat capability to ensure that those expensive and finite resources are still available if the "balloon goes up."**

clear – the prevention of war by implied threat of force; thus our TAC motto "readiness is our profession." Readiness for war is the obvious implication.

Three of the basic principles of war, regardless of service branch, are force, maneuver and surprise. It is the "force" part of the equation that is of most concern to us safety folks. You are the "force" – the "ultimate weapon." Without sufficient

force, there is no particular benefit in maneuver or surprise. Thus, in order to bring that force to bear in war, we have to preserve our "force." The men we trained and the planes they fly must still be available when we go to war. The main reason safety folks are in business is to help maintain that combat capability – to ensure that those expensive and finite resources are still available if the "balloon goes up."

A glance back through statistics from the post-World War II period to the present indicates we're doing well at this; in fact, we're doing better all the time. In 1948, the mishap rate for the Air Force was 40 (no decimal points). Total aircraft destroyed numbered 1783. At that time we had the luxury of tens of thousands of cheap aircraft. In 1944, the peak war year, our aircraft numbered 79,660. Our primary aircraft inventory now is 5,603 and a reduction of 111 is planned for FY 89. Today's fiscal climate precludes

the unnecessary loss of valuable, and generally irreplaceable, aircraft. The cost in lives was equally staggering. Six hundred and nineteen people lost their lives during flight mishaps in 1948. In 1985, our best year thus far, the number was 78 in flight mishaps and the rate was 1.49 Air Force-wide. TAC and TAC-gained units lost 18 people and the combined rate was 2.8.

There's still room for improvement, however. In fighters, most of our flight mishaps are still related to human error, especially the operations variety. Relatively few of these occur in the high demand phase of a mission. Complacency continues to haunt us. It's up to you, our ultimate weapon, to reduce those numbers even further.

General George Patton is reputed to have told his troops, "your job is not to go out and die for your country, but rather to make the other poor slob die for his country." The same is true for us today. The next war cannot be won without you. ➤



# AIRCREW OF DISTINCTION

**M**aj Gregory Ihde and his flight leader had remained in the working area for a prebriefed BFM engagement following the dissimilar air combat training (DACT) portion of their mission with a couple of Eagles. When the BFM engagement between the two F-16's was terminated, Maj Ihde noticed he could not retard the throttle out of mid-range afterburner. He immediately advised lead of the problem and started a climb, turning toward home base, 45 miles to the south.

With approximately 1500 pounds of internal fuel remaining, Maj Ihde jettisoned the empty centerline tank and leveled at 30,000 feet, just below an overcast. En route to high key, he noted that the throttle was locked in afterburner and

could not be moved in either direction. Thirty miles from the field at FL 300 and approximately 1.2 Mach, he extended the speedbrakes to slow the aircraft. Passing 20,000 feet with less than 500 pounds of fuel remaining, Maj Ihde started the JFS and EPU. The EPU ran normally but the JFS didn't. He then shut down the engine using the fuel master switch and lowered the landing gear. Following a smooth flameout approach and landing, Maj Ihde stopped his aircraft prior to mid-field using only the JFS/brake accumulators.

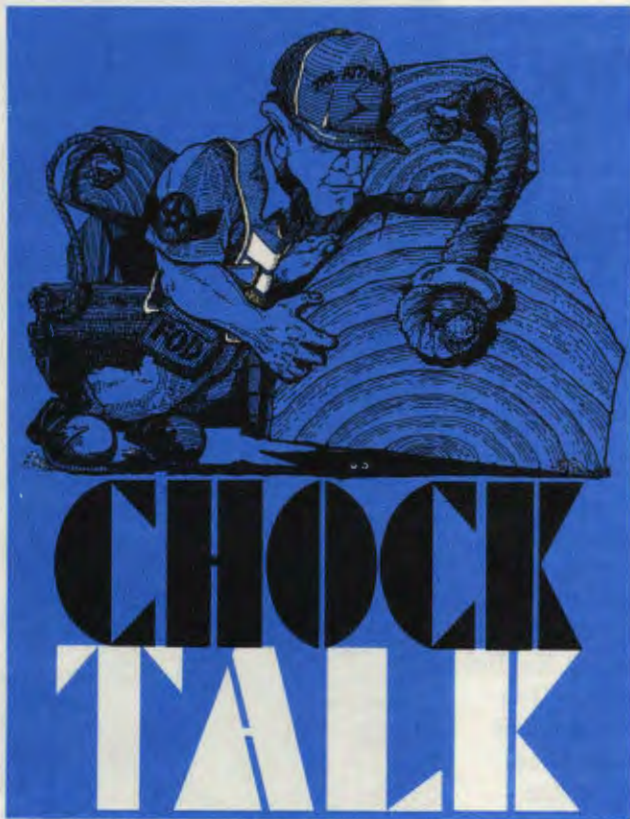
Maj Ihde's superior airmanship and time-critical decision-making prevented loss of a valuable combat aircraft and earned him the TAC Aircrew of Distinction Award.



**Maj Gregory J. Ihde**  
USAF Fighter Weapons School  
Nellis AFB, NV



TAC ATTACK



chock talk

## What's the rub?

**D**uring a routine training mission, a rocket-loaded OV-10 was making a run-in to the target when the pilot bumped the bomb release button with the Master Arm switch in the Off position. Five rockets fired as a result.

When they got the airplane back on the ground, the maintenance folks found that the weapons power circuit breaker for station five had chafed and shorted, resulting in power being applied to the entire armament bus. When other aircraft in the unit were also inspected, three more OV-10s were discovered with chafed wiring beneath the circuit breaker panels.

When you've got panels pulled off an aircraft for an electrical job or work of any sort, take a close look at the areas you can see and check for any signs of chafing or misrouted wiring. Catching a problem in the early stages could prevent an unexpected "hot-wired" airplane later.

## It just wasn't enough

**A**n F-4 crew had just returned from an out-and-back sortie when the dearm crew informed them that their cargo pod door was open and all the contents were missing. Another "parts distribution" run with aircraft parts such as spare drag chutes, gear downlocks and safety pins left all over the countryside.

Prior to that flight, the IP had noticed the transient alert crew opening the Phillips head fasteners on the cargo pod door with the corner of a flathead screwdriver. During the walk-around and check of the aircraft forms, neither the aircraft commander nor the IP had noticed anything out of the ordinary. An inspection of the cargo pod door after the incident showed that the top two fasteners on the front edge of the door were missing and the sheet metal was torn, indicating that those were the only fasteners locked prior to the flight. Closer examination of the air lock fasteners found that they can appear to be secure when they actually aren't locked. If the locking screw is only turned enough to compress the shaft spring and move the lock overcenter, the locking screw head will be flush with the metal but still a quarter turn short of being locked. In this condition, the screw remains closed until it is jarred or pulled loose by pressure on the door. You can't successfully close the air lock fasteners without a Phillips screwdriver because a flat blade screwdriver will break away from the fastener slot before the job is done.

Each of us must do all we can to lick the dropped object problem. When you open aircraft panels, make sure that you get them all fastened back properly. Make sure you don't inadvertently set someone else up to miss a panel, a door or a fastener that you forgot to reinstall completely.





## Help, don't hinder

Two technicians were sent out to remove the ACES 1. ejection seat from an F-15 so other maintenance could be performed. The seat came out without any problems. But as one technician was lifting the catapult and stepping onto a maintenance stand, the other technician stepped onto the bottom step of the stand. The technician holding the catapult lost his balance and stepped onto a safety streamer attached to the catapult. The

catapult was pulled from his hands and it fell about nine feet to the ground. Fortunately the man on the ground wasn't injured; but the drop didn't do the catapult much good.

Teamwork means using our combined talents and efforts to perform a job better than we could individually. How would you and a co-worker have done this task differently to ensure a better ending?

## SOP (Standard Operating Procedure)- There's a reason

It's amazing what lengths some people will go in order to save a minute or two. For example, how much would you be willing to invest in order to cut two minutes off a task? Would it be worth some fingers, an arm or a leg?

One individual recently invested quite a lot to save a couple of minutes. He was towing an aircraft from a hangar *by himself*. The hangar had two electrically-driven, horizontal moving doors which were operated by an Open/Close button that had to be held manually in order to operate them. The doors traveled from the fully open to the fully closed position in approximately two minutes.

This guy depressed the Close button and wedged a screwdriver between the button and switch guard so the doors would move without his assistance. As the doors started to close, he towed the aircraft out of the hangar. Once clear of the closing doors, he got off the tug and went to retrieve his screwdriver. The doors were nearly closed by that time, but he still reached inside to remove his tool from the switch box. As a result, he was trapped by the closing doors – and crushed to death.

Taking a shortcut or disregarding standard operating procedure is never OK. When you find yourself tempted to do something like that, consider such an urge a warning light going off and think twice before you continue. Hopefully you'll decide to return to the approved tech order method of doing something. If all else fails, ask yourself if the time you think you'll save is worth personal injury to you or damage to equipment you're working on. Believe me, it's not.

# IT NEARLY HAPPENED!

it nearly happened



## Janet Gaines TAC Attack

Ah, summer at last! The sun, the sand, the sound of rolling waves as they wash onto the beach and the cool breeze flowing gently over your body as you bask in the warmth of the rays!

Sound like fun? You bet it does! Vacation time is here and guess where a lot of people plan on spending their vacation – the beach! That's okay – but some of the things we put our bodies through are not. The arrival of summer brings not only fun and relaxation, but possible heat-related illnesses from overexposure to the heat and sun. Your unawareness of the sun's effects can also cause life-long damage to your skin, expensive medical bills, and a possible life-threatening situation. Before you enjoy the delights of the summer sun, prepare appropriately.

One summer not long ago, I headed for a day at the beach. Unfortunately, I was one of those ill-prepared individuals who had to learn firsthand about the hazards of summer. I had packed water,

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**The arrival of summer brings not only fun and relaxation, but possible heat-related illnesses from overexposure to the heat and sun.**

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sunglasses, suntan lotion, towel and other necessities I thought might be needed for the day's events. Needless to say, I did not realize that I was in for some real education that day as well.

After a few hours basking in the sun in what I thought was an overcast sky and cool breeze, I decided I'd better call it quits while I was still ahead. I had already begun to feel queasy (one symptom associated with heat exhaustion) and I was soon to feel much worse. As I started packing my things to leave, I thought, "Boy, do I feel sick! Well, I'll probably feel better once I get something to eat and drink." Shortly after that, my heart started beating very rapidly, waves of nausea swept over me, I felt very lightheaded and thought I was going to faint. I immediately sat down and my friends could see from my flushed face and an unnatural profusion of perspiration that I was very ill. They immediately went for cold water. Neither I nor my friends realized the significance of my symptoms; if so, they would have sought medical help for me. I had all the classic symptoms of heat exhaustion – nausea, headache, lightheadedness, weakness, heavy sweating.

My friends got me back to the car, turned the air conditioner on to cool me off, applied cold cloths to my body, and gave me sips of water to drink. Eventually the air in the

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I had all the classic symptoms of heat exhaustion - nausea, headache, lightheadedness, weakness, heavy sweating.

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better. We finally reached home and I immediately went to bed. I was very uncomfortable and restless throughout the night and when I awoke the next morning, I was still feeling the symptoms from the day before. I went to the doctor as soon as possible and after telling him about my symptoms, he told me how serious the risk to my health had been - heat exhaustion from overexposure to the sun and loss of body fluids and salt. Besides that, I was severely sunburned.




I certainly learned my lesson from all of this. I could have lost my life but, fortunately, I only lost a few days from work plus the cost of my medical bills, although long-

this summer. There are several different types of heat illnesses: (1) heat cramps; (2) heat exhaustion; and (3) heat stroke. These illustrations will give you an idea of the symptoms of each and what you should do if you ever experience these problems. Unlike cold in the winter which warns you by causing unusual shivering, heat does not warn you so easily.

Here are some good steps you can take to prevent heat illness: remain in the shade as much as possible; drink plenty of fluids; wear lightweight, loose-fitting, light-colored clothing; wear a hat; use sun protection cream; and, most importantly, be well prepared

## BODY HEAT PROBLEMS

COLD WARNS YOU - BY UNUSUAL, VIOLENT SHIVERING. HEAT DOES NOT WARN YOU - IT ONLY FLOWS WATER ON THE SKIN.

<b>HEAT CRAMPS</b> RESULTS FROM CHEMICAL UPSET	<b>HEAT EXHAUSTION</b> RESULTS FROM CIRCULATORY UPSET	<b>HEAT STROKE</b> RESULTS FROM NERVOUS SYSTEM UPSET
<ul style="list-style-type: none"><li>• RECOGNIZE SYMPTOMS:<ul style="list-style-type: none"><li>• PROLONGED SWEATING</li><li>• UPSET STOMACH</li><li>• FATIGUED MUSCLES</li></ul></li></ul>  <ul style="list-style-type: none"><li>• TREATMENT:<ul style="list-style-type: none"><li>• SHADE</li><li>• SALTY WATER</li><li>• REST</li><li>• FOOD</li><li>• MORE WATER - S&amp;L</li></ul></li></ul>	<ul style="list-style-type: none"><li>• RECOGNIZE SYMPTOMS:<ul style="list-style-type: none"><li>• WEAR</li><li>• POSSIBLE CRAMPS</li><li>• CLAMMY SKIN</li><li>• NAUSEA</li><li>• DELIRIUM</li></ul></li></ul>  <ul style="list-style-type: none"><li>• TREATMENT:<ul style="list-style-type: none"><li>• SHADE SALTY WATER</li><li>• LIE FLAT, REST</li><li>• ELEVATE FEET</li><li>• WARMTH, IF NEEDED</li></ul></li></ul>	<ul style="list-style-type: none"><li>• RECOGNIZE SYMPTOMS:<ul style="list-style-type: none"><li>• DRYNESS AFTER SWEATING</li><li>• WEAKNESS</li><li>• NAUSEA</li><li>• HEADACHE</li><li>• POUNDING PULSE, HIGH TEMPERATURE</li><li>• DELIRIUM</li><li>• SKIN FLUSHED, ASHEN</li><li>• UNCONSCIOUSNESS</li></ul></li></ul>  <ul style="list-style-type: none"><li>• TREATMENT:<ul style="list-style-type: none"><li>• SHADE</li><li>• WET CLOTHING</li><li>• COOL</li><li>• DOCTOR</li></ul></li></ul>

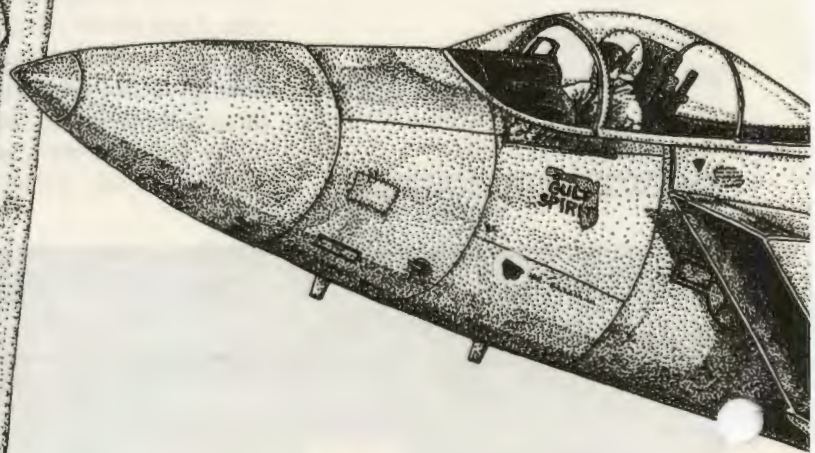
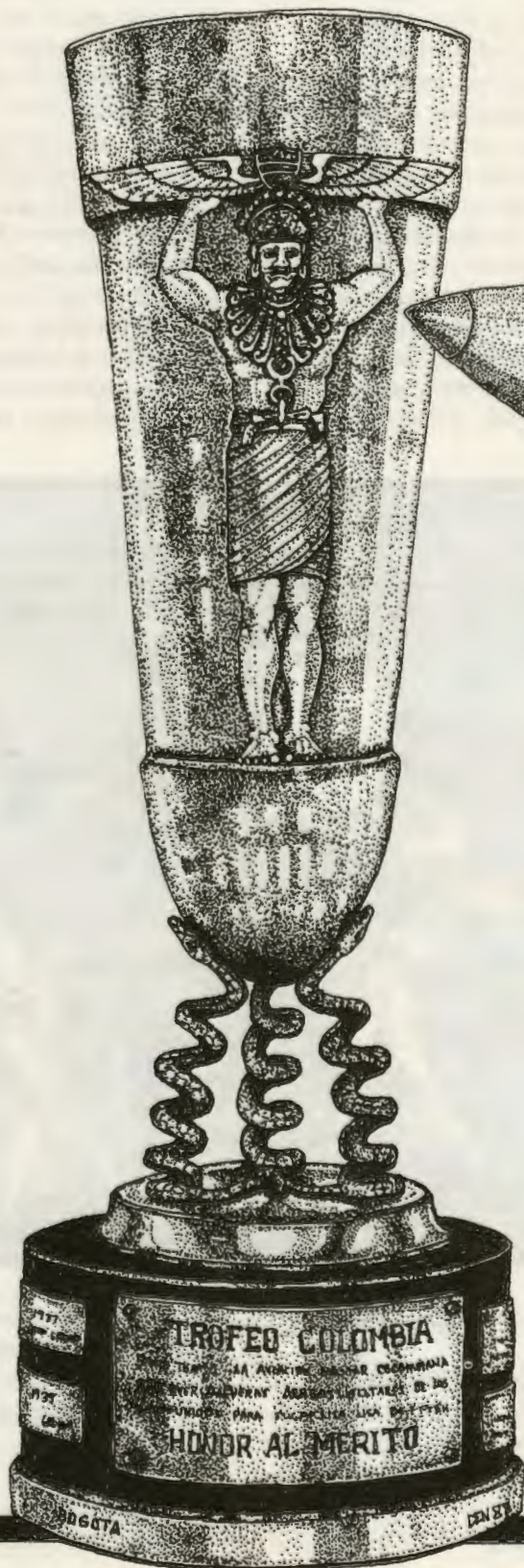
car cooled and we started for home. I was unable to talk because of the continuous waves of nausea and my rapid heart beat. I really began to worry when I did not begin to feel

term problems with my skin are likely.

Being well informed and prepared for the heat and sun should be your first priority for having fun

for your vacation in the sun.

Staying well is your first priority for an enjoyable vacation in the sun; so be aware and have a great summer. ➤

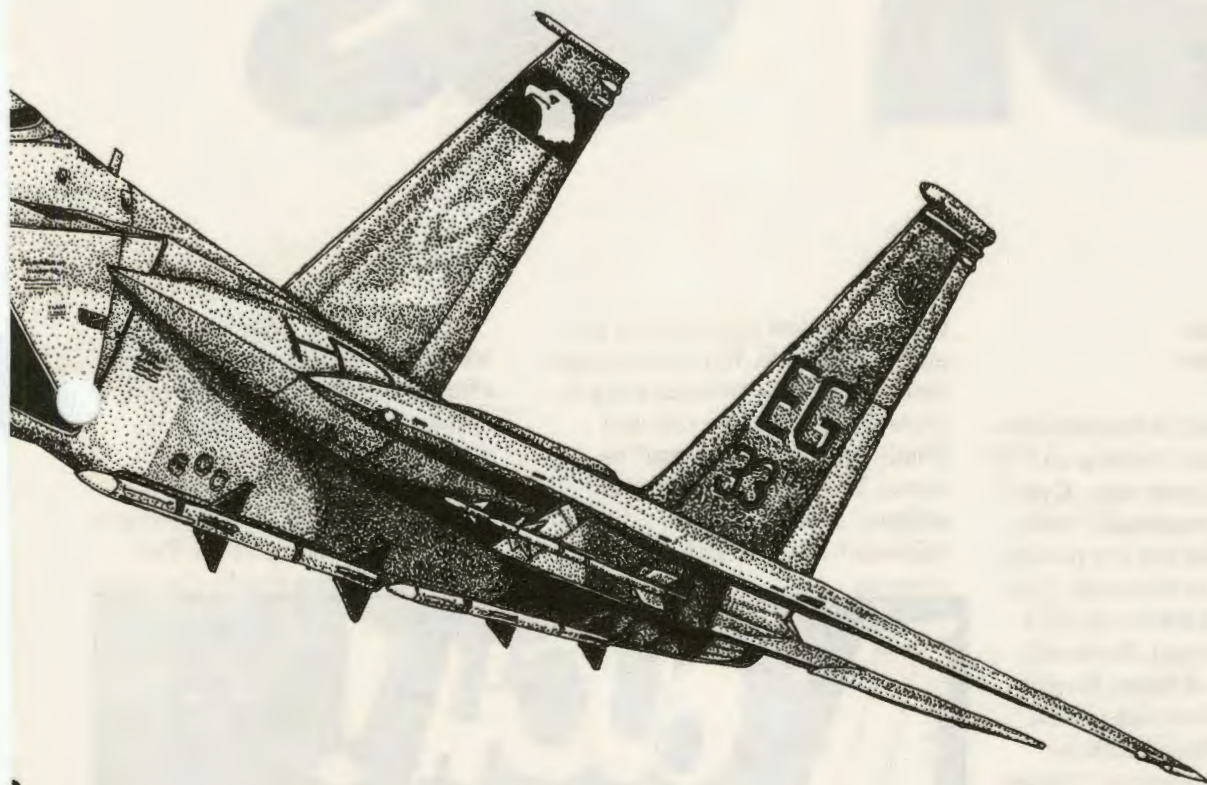


**33d Tactical  
Fighter Wing,  
Eglin AFB, Florida**

**1987 Winner  
Colombian F**



# F-15 EAGLE



of the  
light Safety Award

# SFOs

## a honed skill

### Maj Dan Runyan TAC Flight Safety

**I**magine yourself in this scenario. You're flying a qual check in an F-16 with a SEFE on your wing. Everything has gone remarkably well – so well in fact that you are positive an "EQ" may be in the works. Now you're up to high key for an SFO (simulated flameout). No sweat, you've done lots of these. No matter that the last one was several weeks ago; weather, traffic, or something always seemed to keep you out of the SFO pattern.

Through high key down to base key, the SFO is going fine. But, you haven't added enough extra airspeed to cover all your fuel and stores, the wind is blowing you long and tight, and the speedbrakes are nearly full open. Turning base you see the low airspeed and drop your nose to try to get it back. On final, you adjust your aim point. You see you're a bit shallow and the airspeed is still lower than you want. You think about going around, but

that would blow your chances for an EQ checkride. You think you can make it. Over the overrun you perceive a very high sink rate and finally realize the SFO can't be saved. You start a mil power go-around . . . but WHAM! . . . you still touch down – hard – in the overrun.

Broken ventral fins, dented nozzles, scraped speedbrakes, and a busted checkride were the end results of this scenario. Does it sound realistic? It happened! In fact, during the last six months we've had three such mishaps occur during F-16 practice SFOs. This particular mishap resulted in Class



C damage. Another involved a two-seat F-16 with an IP and a student on board. Their landing was hard enough to bend both gear out-board, impact the external tanks, and bend enough of the aircraft to result in Class B damage. The third SFO landing mishap was hard enough to collapse the gear and result in Class A damage. We were lucky the only pilot injuries were bruised egos and damaged confidences.

These mishaps occurred to pilots of varying experience levels belonging to three different MAJCOMs, but there are some common factors. First, all the pilots were either new to the F-16 or had gone several weeks since accomplishing an SFO. All were flying heavier configurations than a basic clean A-model. All allowed their airspeeds to decrease below the Dash One limits. And, none recognized the need to go around until it was too late.

The intent of this article is not to

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**A successful SFO requires a degree of pilot judgement and expertise not called for in most other phases of flight.**

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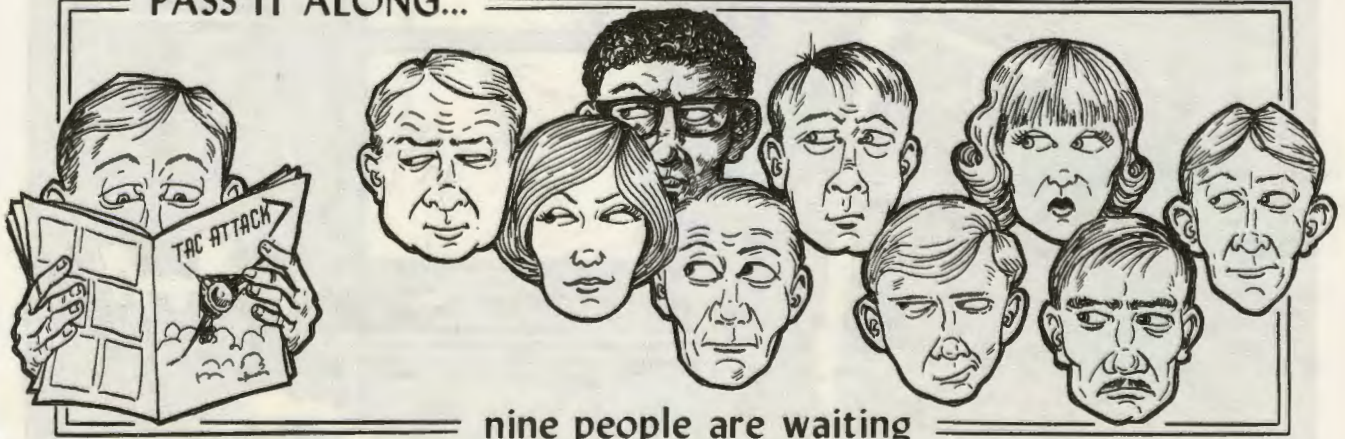
teach SFO techniques and procedures. The Dash One and phase manuals do a very good job of that. The intent is to heighten your awareness of the high degree of airmanship required to successfully accomplish an SFO. Think about the variables involved: aircraft drag and weight, altitude, air-speed, descent angle, winds, traffic sequencing, configuration point, required radio calls, etc.; all must be considered and handled properly to accomplish a safe SFO. A successful SFO requires a degree of pilot judgement and expertise not called for in most other phases of flight. The proper execution of an SFO is more demanding than a "guns track," or a "shack" bomb. It requires putting it all together, in close proximity to the ground and at a low airspeed,

leaving little margin for error.

A famous aviator once said that the best pilots are those who fly a lot. The same can be said of SFOs. It is an acquired skill and must be constantly honed. As single-engine fighter pilots, an F-16 pilot's incentive for proficiency in SFOs is obvious. Have you ever noticed how busy a wing's SFO pattern gets following a highly publicized engine problem? Past history shows several pilot "saves" of gliding F-16s. We need to keep our skills honed so we can add to that list if the only motor we have decides to quit. But, to ding an aircraft while practicing these skills negates the value of practice. The engine is still good (hence the S in SFO); so if things don't look good, exercise some pilot judgement and take it around — early! Fighter pilot ego and supreme confidence are good things to have, but don't let them lead you to press when all the indicators are telling you to knock-it-off. ➤

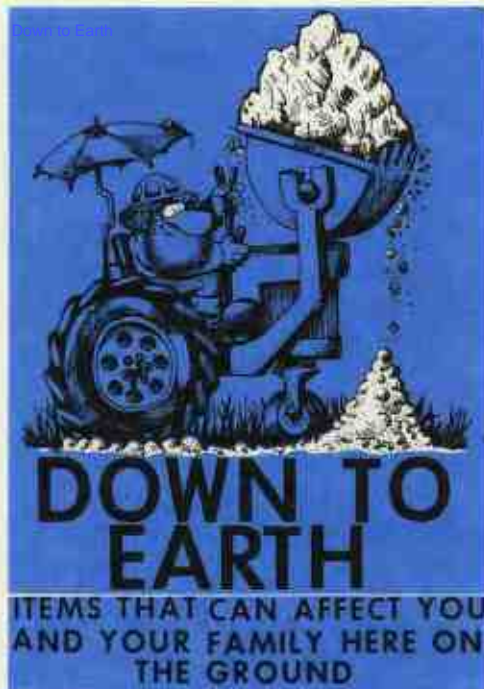
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PASS IT ALONG...



nine people are waiting

# CLOSE, BUT NOT CLOSE ENOUGH



**MSgt Bobby McElwain**  
35 TTW/DOTL  
George AFB, CA

In the late 1970's, a room inside a TAC life support shop was completely destroyed by fire when a partially closed gallon can of glue exploded in a refrigerator. The can had been placed there overnight for storage; and the explosion

occurred when the buildup of glue vapors ignited as the refrigerator's compressor came on.

Recently I discovered several cans of glue stored in the refrigerator of another life support shop. They were quickly removed when I told the assistant shop NCOIC the above story. To avoid a repeat occurrence of that incident of several years ago, I'd like to share some information that might be of value to you.

First of all, the labels on all glues indicate what their flash points are. A flash point is the maximum temperature at which a liquid gives off vapor in sufficient concentration to form an ignitable mixture with air near the surface of the liquid. The flash point of the glue used on anti-exposure suits and flying helmets, for example, is  $-7^{\circ}\text{C}$  ( $20^{\circ}\text{F}$ ). Glue with a flash point this low is extremely flammable and should be kept away from open flames,

open element heaters, equipment not properly grounded and non-explosion proof electrical equipment. Sparks resulting from the accumulation of static electricity can also cause ignition of flammable vapors or gases.

The caution/warning statements in our technical orders alert us of the dangers involved in handling the various glues we use. The label on the glue for helmets and anti-exposure suits states that it should be stored at  $40^{\circ}$  to  $60^{\circ}\text{F}$ . It also says to store it in a cool, dark place *but that should not be a refrigerator*. Information on recommended, approved indoor storage cabinets is available at your local ground safety office. These cabinets are great for storing glue, alcohol, paint and so forth. The capacity of flammable and combustible liquids for these cabinets will be in accordance with AFOSH Standard 127-43.





# SEATBELTS: DO THEY SAVE HUMAN LIFE AND PREVENT INJURY?

**Sgt Gregory A. Harper**  
390 ECS  
Mountain Home AFB, Idaho

I have always been an advocate of the wearing of seatbelts. After joining the Air Force, it was mandatory to wear seatbelts on base and it recently became mandatory in Idaho. Thus, it became second nature for me and whoever I rode with to "buckle up." However, I had never experienced firsthand just what a life-saving piece of equipment the seatbelt is. I was to find out on a late April afternoon.

Me and my roommate were coming back from Strike Dam Marina about 20 miles north of the base. We had just completed a long day of fishing around different areas of the dam and landed four nice sized bass. Actually, my friend caught them. I only managed a couple of bites and two bass that were too small to keep. Despite that, it was a pleasant day and a good way to unwind after working hard all week.

While driving back to the base, it was near dusk and the road we were on was a little narrow, but I thought

nothing of it since I had driven it countless times before. I was wearing my seatbelt, but I noticed my roommate was not wearing his. At that very instant, he put his seatbelt on as if reading my mind. I felt good about that. I was driving at about 60 miles per hour when I noticed a pickup truck coming toward us in the oncoming lane and slightly over the yellow line that separates the two lanes. I figured once he saw me he would move over, considering how narrow each lane was. To my surprise, he didn't! I thought I had enough room to my right to adjust ever so slightly -- I didn't! I wound up off the road just enough that my right side tires were on the soft ground which was a slight embankment. I tried to turn the wheel to the left to get back onto the road but it was difficult since there was a "lip" between the road and dirt. I managed to get back on the road, but I overadjusted my turn to the left and tried to recover by turning back to the right, and, hopefully, end up going straight.

Well, none of that worked; the car tailspinned and flipped over into the

embankment, tearing down the loosely strung wire fence used to keep cattle in. The car finally wound up on its side. I was still strapped in my seatbelt and kind of hanging in the air with my roommate below me. After gathering my wits, I managed to push my side of the door open and hold it so my roommate could climb out. I then climbed out myself. We both looked at the car; it was totalled.

We thought of all the things that could have happened if we had not been wearing our seatbelts. For one thing, we both could have fallen out of our respective side windows as a result of the tailspin. Second, since the car landed on the passenger side, I would have fallen onto my roommate who was literally underneath me. I weigh nearly 200 lbs and surely would have caused my roommate extensive damage.

Well, we both wound up with no significant injuries except a few small scratches. Other than that, we're both fine. Next time you think of not wearing a seatbelt, take the time to think again. Why *not* wear them? ➤

# TAC OUTSTANDING ACHIEVEMENT IN SAFETY AWARD



The 703d Tactical Air Support Squadron has demonstrated an outstanding safety record during its 21-year history. Between its reactivation in 1967 and its deactivation in May of this year, the only CH-3 Jolly Green Giant unit in Tactical Air Command had no Class A mishaps and only one Class B. The 703d TASS demonstrated sustained superior performance during the period as an integral part of the Air Force's Tactical Air Control System.

The unit's support of 507th Tactical Air Control Wing radar sites took it on missions ranging from Canada and California to the Florida Keys, earning it a reputation of excellence and dependability. Whether deploying to the Smoky Mountains of Tennessee for high altitude mountain flying, participating in combat search and rescue exercises, performing paradrops for Army and Air Force units, or conducting helilift training at each of the wing's six radar detachments, the 703d demonstrated the highest standards of flight discipline, military professionalism and mission accomplishment. Flexibility and endurance were proven repeatedly during unit support of HQ TAC Gunsmoke '85 and '87 when compe-



703d Tactical Air Support Squadron (TASS)  
507th Tactical Air Control Wing  
Shaw AFB, SC

tion judges were flown to the far reaches of the California and Nevada desert. All of these elements combined to produce a safe and successful flying operation.

The 703d's unparalleled safety

record resulted from thorough planning, preparation and sound professional judgment. The unit's distinctive accomplishments have earned it the TAC Outstanding Achievement in Safety Award.



# TAC CREW CHIEF SAFETY AWARD

**D**uring an F-15 alert turn-around, SSgt Clayton discovered a leaking number two engine oil tank and a cracked tower shaft on the number one engine augmentor section. Had these malfunctions gone undetected, it could have resulted in major damage to both engines and the possible loss of the aircraft.

On another occasion, SSgt Clayton performed an F-15 alert preflight inspection. He did the engine intakes first and proceeded to the rear of the aircraft to look in the engine exhaust area. Upon inspection of the number one engine exhaust, he detected a dislodged number four bearing air supply manifold. While this is not a carded item on the preflight work cards, SSgt Clayton's attention to detail and early detection of the

problem prevented the destruction of the engine core and a potential aircraft mishap.

During another inspection, SSgt Clayton detected a cracked brake. Due to his comprehensive inspection techniques, a possible disintegration of the brake and subsequent aircraft mishap was averted. His thoroughness has also led to the discovery of cracked wing panels on several occasions. These are high stress panels which are critical to aircraft flight.

SSgt Clayton exemplifies the professional qualities that are desirable in today's aircraft technicians: integrity, quality maintenance, and in-depth knowledge of aircraft systems. His outstanding performance has earned him the TAC Crew Chief Safety Award.



**SSgt Arnold C. Clayton**  
Det 1, 318 FIS  
Castle AFB, CA



# YOUR WING WEAPONS SAFETY OFFICER

Lt Col Patrick J. Smith  
Capt Travis M. Wheeler  
TFWC Office of Safety  
Nellis AFB, NV

**T**he young soldier lay dying in his buddy's arms. Tears streamed down his buddy's cheeks – somewhat from sorrow,





ut mainly from frustration and anger. As he looked at his dying friend and then at the white flag flying over their destroyed machine-gun position, he felt rage well up as he noticed the bridge spanning the river just below where he knelt. It was still standing and enemy troops and tanks now streamed across it. Realizing that his friend was dead, he gently straightened the body, slowly stood up and, putting his hands on top of his head, began walking down the hill. As he did, one thought kept repeating itself in his head: "Only one more bomb and that bridge would have been destroyed!"

Meanwhile, at an American forward operating location, the commander talked into a red phone. "No, sir, we weren't attacked, we had an accident. Several MK-84s detonated on the flight line. We

suffered several casualties – eight dead and twelve wounded."

"Yes, sir, we're still launching aircraft, but we lost four sorties – the ones scheduled to hit the bridge at point Delta."

On the flight line, a weary on-scene commander watched the last ambulance drive away and glanced at the blackened piles of metal that had once been four combat aircraft as he turned to the base weapons safety officer and said, "Okay, captain, do your job."

The captain winced, knowing if he had done his job this nightmare would never have happened.

Made up story? You bet. Possible story? Right again. Likely story? We certainly hope not.

What is the job the weapons safety officer didn't do? Like most of us, his job was to get the "bombs on target." In peacetime, we train for

that; so we can do the job quickly and correctly the first time in war.

As a person who handles, stores, transports, or uses explosives, what do you think when you see the weapons safety officer (WSO) or NCO walk into your work area?

A. Great! Now I can get my questions answered and find out if I'm doing this safely.

B. Oh, crap! Now I've got to do this his way!

Your wing WSO hopes you marked answer A. However, if you didn't, let's make some points clear. First, the WSO represents your wing commander for anything weapons safety-related. The WSO was appointed by the wing commander to do exactly what he or she is doing, i.e., make sure all munitions operations are done correctly and, hence, safely. They are not there to make you do it their way, but *the*





# YOUR WING WEAPONS SAFETY OFFICER

*safe way* – the Air Force way, your wing commander's way.

Second, the WSO/WSNCO is highly qualified to do the job. All WSOs must be either fully qualified munitions maintenance officers or experienced 461XX or 462XX munitions maintenance technicians and complete a six-week course at

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**The WSO was appointed by the wing commander to do exactly what he or she is doing, i.e., make sure all munitions operations are done correctly and, hence, safely.**

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Lowry AFB, Colorado, covering explosives safety rules and regulations, investigations, inspections, site planning, hazard reporting, deployment planning, training, and much more. This combination of technical qualifications and experience allows the WSO to be the "base explosives safety expert."

Probably most important, the wing commander expects you to do your job correctly and safely and expects the WSO to report you if you don't. The WSO would be ecstatic if he could report to the wing commander, "No discrepancies, sir. Everybody's doing their job correctly." Every time the WSO reports an unsafe act, he or she must also come up with suggested procedures to convince you and your fellow workers to do it cor-

rectly. Not an easy task – and not a fun one!

Your wing WSO cannot possibly "know it all." Explosives safety is a complicated business because it is an inexact science based on mishap experience. Changes to some of the rules and requirements are inevitable. Due to the constant updating of explosives safety standards, your wing WSO must continue to read and study to keep current. When

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**The wing commander expects you to do your job correctly and safely and expects the WSO to report you if you don't.**

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your wing weapons safety officer

# Y T E A ?

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## **Explosives safety is a complicated business because it is an inexact science based on mishap experience.**

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you ask a question pertaining to explosives safety, don't be surprised if you don't always receive an on-the-spot answer. Sometimes the WSO must do extensive research before the correct answer can be provided. This should reassure you that the WSO is conscientious and cares about the job being done correctly.

Sometimes, unfortunately, your wing WSO is forced to "write people up." However, most of these write-ups result from serious and

repeated violations of clear-cut explosives safety standards. For example, transporting impulse ejection carts unsecured in the back of a pickup truck could be such a violation. Carelessness, a disregard for directives, a lack of discipline – or any combination of these – often show up in minor violations. These minor violations by themselves might not cause a lot of harm, but they point out that a serious problem might be on the way.

Your WSO's marching orders from the wing commander are to confront explosives safety problems head-on. Either it's right or it's not! You don't get a second chance when it comes to explosives accidents. The wing WSO works to solve explosives safety problems at the lowest possible level, without

generating paperwork. However, you can be sure that he or she will formally elevate the problem to the unit commander via a TAC Form 5 if the individual, shop chief, or branch chief remains unresponsive.

Your wing WSO is there to help you solve your explosives safety problems. If you suspect an explosives safety hazard exists or have an idea that will make your job safer, tell your supervisor. Your wing WSO is always looking for better ways to improve all aspects of weapons safety at your unit.

So, the next time your wing WSO walks into your work area, you'll know that he or she is there to help you solve your explosives safety problems. Why? So you can do your job to get the "bombs on target" and blow those bridges the first time. ➤





Major Frank McIntire  
Capt Hugh Forde  
USAF Academy

“Pilot experienced tumbling vision, followed by uncontrollable rapid eye movement. Declared emergency and returned to base. Investigation revealed that the pilot had recognized for at least

48 hours before the flight that he was suffering from the symptoms of upper respiratory infection. Instead of taking himself off the schedule and going to the flight surgeon, the pilot elected to take an

over-the-counter cold tablet about six hours before takeoff and pressed on with the mission. The incident occurred when the unit was deployed . . .” (*TAC Attack*, June 1986.

We're all familiar with such examples – stories about aviators who consciously make decisions to press the envelope, bend the rules, and then end up as safety statistics. Many commanders and their folks in the operations, logistics and safety business lose sleep trying to understand why aircrew error mishaps continue despite copious safety procedures and specific directives.

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**A recent study of excellent tactical fighter squadrons points to one solution: the transformation of safety policy into a "safety attitude."**

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A recent study of *excellent* tactical fighter squadrons points to one solution: the transformation of safety policy into a "safety attitude." A major conclusion is that excellent squadrons are characterized by a safety attitude which permeates all levels of the organization and acts as an "auto-pilot" to keep fighter crews operating with the mission as top priority and safety as a means to that end. The self-medicating fighter jock probably had the best of intentions: to accomplish the mission. But without a safety attitude even the best intentions can prove fatal. This article describes the safety attitude observed in one *excellent* tactical fighter squadron.

A first lieutenant walked up to the duty desk and asked the scheduler to stand him down for the day. He was not DNIF (duty not involving flight), grounded or ill. Instead, he

had spent a sleepless night up with a fussy baby. He was simply not operating at 100 percent and he knew it. His response was not the easiest, but it certainly made sense. He probably felt uncomfortable upsetting the scheduler's "grand plan," but he spoke up anyway. The operations officer's response was "Fine, take care of yourself and we'll see you tomorrow." No other ques-



tions were asked in an exchange that lasted less than two minutes. The lieutenant headed for the books and the sortie was lost.

When asked about the situation later, the pilot was quick to point out that he had no qualms about taking himself off the schedule. Taking care of a fussy infant is a good reason to lose a sortie, but a miserable one for losing an aircraft or crew. He added that this safety atti-

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**Taking care of a fussy infant is a good reason to lose a sortie, but a miserable one for losing an aircraft or crew.**

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tude is something "you can feel" all over the squadron. In this excellent unit, the rule is "when you don't feel good, take yourself off the schedule and nothing will be said." The message is clear – mission first with the safety attitude being a means to that end.

A group of captains interviewed in the unit emphasized that "Fly Safe" is more than just a sticker on the safety officer's briefcase; it's a way of life. In other squadrons flying safety was preached, but not practiced, and "You had a lot of explaining to do to the operations officer if you took yourself off the schedule for anything less than major surgery."

In the excellent squadron the safety policy is in print, but the safety attitude is ingrained. From the commander on down, the safety attitude is demonstrated day after day. When the lieutenant takes himself off the schedule in accordance with the commander's stated policy, he can predict his supervisor's response. The commander is more concerned with the lieutenant's positive display of good judgment than the disruption to the schedule or the loss of a sortie. Additionally, the safety attitude becomes an internalized standard or "norm" for behavior. It originates with the commander and is adopted by the squadron members. Notice that in this particular squadron, a crewmember can make a safety call without subtle pressure to press his limits. "We don't press limits" becomes one norm in the squadron possessing the safety attitude. Every squadron has a *safety policy*; an excellent squadron has the *safety attitude*.

Editor's Note: Maj McIntire and Capt Forde are both instructors in the Department of Behavioral Science and Leadership at the USAF Academy. ➤

# 1987 USAF SAFETY AWARDS



The Air Force Inspection and Safety Center has announced the recipients of the 1987 USAF safety awards.

**Colombian Flight Safety Award**  
33d Tactical Fighter Wing  
Eglin AFB, Florida

**Director of Aerospace Special Achievement Safety Award**  
MSgt Robert Brendle  
31 TFW, Homestead AFB, Florida

**USAF Flight Safety Plaques**  
Flight safety plaques are sent to Air Force organizations below air division level for meritorious achievement in mishap prevention. The TAC recipients were:

4th Tactical Fighter Wing  
5th Fighter Interceptor Squadron

35th Tactical Training Wing  
318th Fighter Interceptor Squadron  
347th Tactical Fighter Wing  
355th Tactical Training Wing  
366th Tactical Fighter Wing  
388th Tactical Fighter Wing  
474th Tactical Fighter Wing  
552d Airborne Warning and Control Wing  
602d Tactical Air Control Wing

**USAF Missile Safety Plaques**  
Missile safety plaques are awarded to organizations below MAJCOM level for outstanding achievement and contribution to missile safety. The TAC recipients were:  
832d Air Division  
833d Air Division

**USAF Explosives Safety Plaques**  
Explosives safety plaques are sent each year to organizations below MAJCOM level for outstanding achievement in, or contribution to, explosives safety. The TAC recipients were:  
366th Tactical Fighter Wing  
836th Air Division  
USAF Tactical Fighter Weapons Center

**USAF Motorcycle Safety Plaque**  
The Air Force Motorcycle Safety Award is presented to organizations below MAJCOM level for outstanding achievement in, or contribution to, mishap reduction and safety education in motorcycling. The TAC recipient was:  
Seymour Johnson Air Force Base

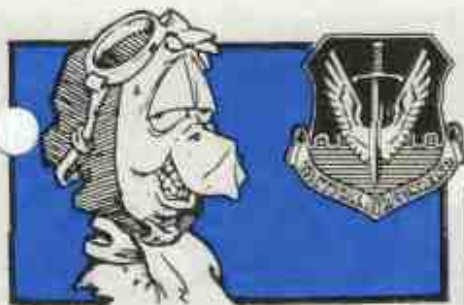


## TAC COMMANDER'S AWARD FOR FLIGHT SAFETY

The TAC Commander's Award for Flight Safety honors a numbered air force for promoting flight safety. Selection is based on

the lowest command-controlled Class A and B flight mishap rate of active units in a calendar year. The 1987 award goes to First Air Force.





# TAC TALLY

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

Total		
JUN	THRU JUN	
	FY 88	FY 87
5	26	27
2	14	22
5/0	18/0	20/1
0/0	0/5	0/5

TAC		
JUN	THRU JUN	
	FY 88	FY 87
3	17	16
2	11	13
3/0	12/0	12/1
0/0	0/4	0/0

ANG		
JUN	THRU JUN	
	FY 88	FY 87
1	6	7
0	2	5
1/0	5/0	7/0
0/0	0/1	0/2

AFR		
JUN	THRU JUN	
	FY 88	FY 87
1	3	4
0	1	4
1/0	1/0	1/0
0/0	0/0	0/3

• (SUCCESSFUL/UNSUCCESSFUL)

## TAC'S TOP 5 thru JUN 1988

1st AF	
CLASS A MISHAP-FREE MONTHS	
94	318 FIS
41	325 TTW
29	57 FIS
5	48 FIS

9th AF	
CLASS A MISHAP-FREE MONTHS	
64	33 TFW
37	507 TAIRCW
23	354 TFW
17	23 TFW
12	1 TFW

12th AF	
CLASS A MISHAP-FREE MONTHS	
40	58 TTW
33	35 TTW
27	474 TFW
25	388 TFW
19	37 TFW

ANG	
CLASS A MISHAP-FREE MONTHS	
211	110 TASG
136	138 TFG
168	177 FIG
163	114 TFG
127	155 TRG

AFR	
CLASS A MISHAP-FREE MONTHS	
94	482 TFW
84	924 TFG
72	906 TFG
46	507 TFG
33	917 TFW

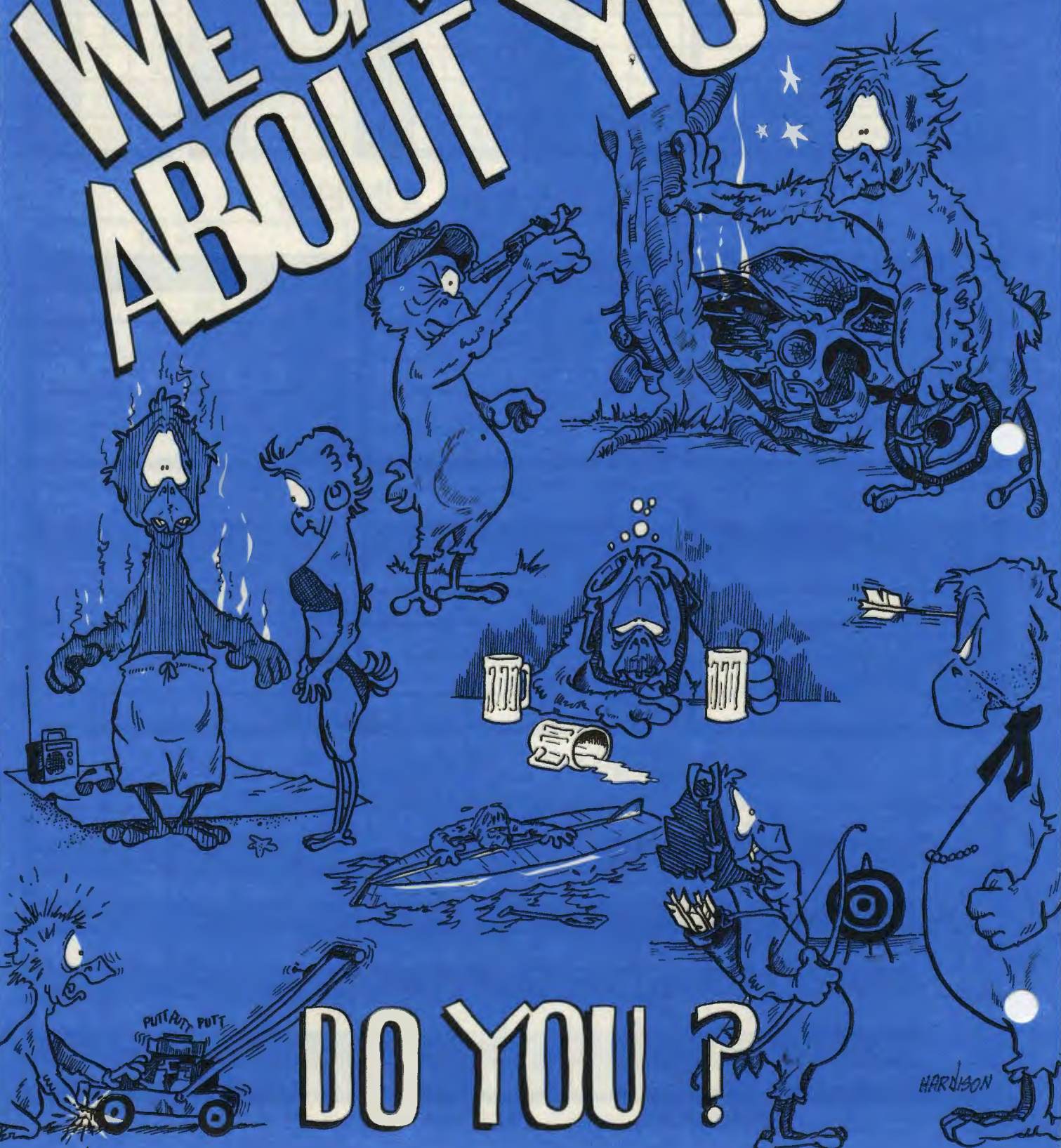
DRUs	
CLASS A MISHAP-FREE MONTHS	
141	28 AD
11	USAFTAWC
3	USAFTFWC

## CLASS A MISHAP COMPARISON RATE

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

	FY 88	6.4	3.4	3.0	2.7	2.6	3.3	3.0	3.1	3.3			
TAC	FY 87	7.5	5.8	5.1	4.7	4.2	3.7	3.3	2.9	2.9	3.1	2.8	2.9
ANG	FY 88	0.0	0.0	0.0	0.0	0.9	2.2	2.5	2.7	2.9			
	FY 87	4.0	6.6	4.7	3.5	2.8	4.5	3.8	3.3	3.4	3.0	2.7	2.5
AFR	FY 88	0.0	10.6	7.7	5.9	9.5	7.9	6.7	5.8	7.7			
	FY 87	21.8	11.7	8.5	12.6	10.2	8.3	7.0	12.2	10.8	9.6	8.5	7.8
Total	FY 88	4.3	2.9	2.4	2.2	2.5	3.2	3.1	3.1	3.5			
	FY 87	7.3	6.3	5.2	4.8	4.1	4.1	3.6	3.4	3.4	3.4	3.1	3.0
MONTH		OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP

# WE CARE ABOUT YOU...



# DO YOU ?

HARRISON