

TAC Attack

MAY 1991



WELCOME HOME
TROOPS!

ANGLE OF ATTACK

While it was great being the Commander of the Northeast Air Defense Sector, I'm really looking forward to flying and working with you in a new position on our TAC team as your Director of Safety.

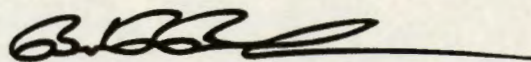
Speaking of teams, even diehard Cowboy fans know there's a new contender for the title of "America's Team," and it's the US Air Force. The initial offensive line-up included many TAC and TAC-gained all-stars such as the F-117s, F-15Es, F-15s, F-16s, A-10s, RF-4s, EF-111s, OA-10s, F-4Gs, E-3s, etc., who successfully executed play after play against the opposition. This success didn't just happen; but as any quarterback will tell you, it always takes a team effort to win the game. And while CNN showed hours of some of the best air-to-air and air-to-ground video footage of our fighters destroying the enemy, I don't recall seeing too many cooks, mail clerks, munition loaders, crew chiefs, air taskers, CE, or other support personnel making the prime time national news. Nor do I recall seeing very many close-ups of those professionals who did not deploy, but who did an outstanding job supporting DESERT STORM while continuing to meet our other USAF worldwide commitments. That support is critical, for pilots don't fly well on an empty stomach. Bombs and missiles have to be loaded by real people before they can surgically take out a target. It was a total "team effort," and the nation is proud of all of you on "America's Team." I can't say enough thanks for the sacrifices you and your families have made to make this national endeavor so highly successful. As DESERT STORM gives way to DESERT CALM, every TAC base will be welcoming their heroic men and women back home.

Now we face a number of new and very different challenges. One which many of us have never faced before is that of integrating our warriors back into a peacetime environment. Men and women who have been tested in battle may not find stateside operations as exciting and challenging as they once did. Some of the professionals who turned in such stunning performances may have unknowingly slipped into thinking of themselves as invincible. Many of our returnees will make the transition with minimal effort and time; others will need additional time and understanding as they transition from the very structured life revolving around a single, clear-cut objective — win the war — to a much more complicated life of balancing time between training for combat, additional duties, family, vacation, finances, etc. Flight leads hold the hammer during a flight, but that leadership style isn't recommended for use during the family dinner. What leadership style are you and the supervisors you know using to handle the impact of this extra stress? Is it just business as usual or have you taken time to develop a "walk" before we jump right in and start "running" with a cosmic "everyone to max" exercise?

In addition to the extra stress created by our returning warriors, we also face the normal spring perils, such as thunderstorms, bird migrations and PCS rotations. As we transition back to a peacetime Air Force, it will take that same team spirit displayed during the war to ensure continued combat readiness. To our Veterans of DESERT STORM, **WELL DONE!** To all of you on "America's Team," **WELL DONE!**

Finally, I want to say thank you and goodbye to a special member of "America's Team" — Col Jack Gawelko, who spearheaded the plays which achieved the lowest flight, weapons, and ground mishap rates ever recorded in the history of TAC.

So long and Godspeed to you, Pardner!



BODIE R. BODENHEIM, Colonel, USAF
Director of Safety

TAC Attack

DEPARTMENT OF THE AIR FORCE



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WARNING SIGNALS: Are They Trying to Tell You Something?

Maj Don Rightmyer
16 AF Torrejon AB SP
Courtesy Airscoop

You're drilling along on a low level route and everything seems to be going your way. You've got your fellow flight members in sight, the birds are staying out of your way, you're close to the desired route time and course, and you've got the sequence of events (associated pacing) at the bombing range clear in your mind. What could be better at the moment?

That's the situation all of us prefer to find ourselves in; but it certainly doesn't always remain that way, does it? As you're pressing ahead, suddenly your Master Caution light comes on, one or more additional telelights illuminate (or an aural warning of some sort sounds), and things have a real potential for going rapidly downhill from there. Whether or not matters grow worse from that point on depends largely on how you react to the warning lights.

This is not an article about handling in-flight emergency situations, but a few thoughts on noticing **"WARNING LIGHTS"** in our day-to-day activities, both in the air and on the ground, which should be serving the same purpose as those mentioned above. What if, in our illustration above, you just ignored the Master Caution, the telelights and other associated indications that your trusty air chariot was about to quit? What would you normally expect to see happen after that? At worst, your mission could well terminate far short of being able to taxi back to the chocks as a flight. You're probably thinking that it would be kind of stupid to ignore the warning lights, right? I agree, but how many times do we do that very thing in ignoring "warning



Should there be a **"WARNING LIGHT"** going off for this person's supervisor?

lights" that should be just as obvious that we're about to have problems with the mission at hand?

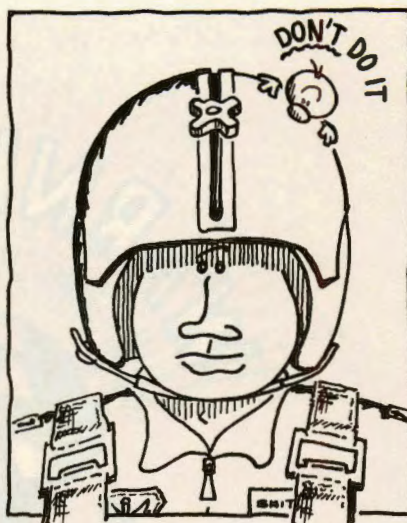
If given the choice, I would much rather handle the warning lights you find in the cockpit than some of the human/situational warnings that we receive, but may not understand during the course of a day. You've heard

many of these briefed and discussed in flying safety meetings, flight mishap summaries and other forums. For example, a new pilot or WSO has been moving into housing, he's been putting in some long hours between home and the squadron, and an exercise or unit inspection kicks off. Everybody's adrenalin is flowing fast, and this guy doesn't want to appear weak; so he puts forth the extra effort necessary to meet the unit's mission needs and far higher than normal needs on the home front. Should there be a **"WARNING LIGHT"** going off for this person's supervisor?

The members of a four-ship flight go out to their jets for pre-flight and engine start. It hasn't been a good day for maintenance, and the four jets range in preparedness for flight from Code One/100% to marginal to hard broke. Two members of the flight have to take spares after much effort to get their original air steeds taxied, and now they're running real late to try to catch up with the other members of the flight. Even worse, two of the flight members may have already taken off and the remaining two are going to try to meet them at the range. The temptation is there to cut corners in order to get the whole gaggle back into some semblance of the original mission as it was briefed in order "to make it happen." Well, something may happen alright, but it might not be what we would want.

Other things can happen which should immediately turn on a "CAUTION" or "WARNING" light in a person's head. The way you've planned the mission has suddenly been disrupted because you've found that you're going to get on the range earlier than expected or perhaps you're going to only have half the range time you were promised. Either way, there is a temptation to rush into a new "plan of attack" without taking a little time to make the necessary adjustments to your sortie plans, aircraft position or flight composition and to ensure that you're best prepared to deal with the new deck you've been handed.

How can you best prepare yourself to notice and respond properly to the "warning lights" that you may encounter in and around the squadron's activities on any given day? The first is, as my father always used to tell me, "Use your head for something besides a hat



rack," i.e., use your head — the old common sense test. This can be accomplished by nothing more complicated than asking yourself, "Does what we're about to do make sense?" If the answer is "No," then don't do it. From my own experience, if there is even a nagging little voice which says, "This doesn't feel right," don't do it without further investigation. I wish I'd had a dollar for every time I've ignored that little voice and been proven wrong.

Another way to tune up your "warning light" detection ability is to spend some time looking back over flight mishaps, both recent and older ones. Avail yourself of the information in "Crash

Books" for your specific model of aircraft. Look beneath the surface facts of what occurred in a mishap for some of the "warning lights" that should have been or were available. The saying is that we don't learn from our history, but that doesn't have to be the end of the story. Maybe all of us don't learn, but a lot do or there wouldn't be much point in having **TAC Attack** and other safety publications like it. Make the most of the mistakes, misjudgments, and miscalculations which other folks have made. It will help you not to make the same ones.

Know your aircraft, its systems and the established policies for employing that aircraft. Sounds like motherhood and apple pie, but how many times has that been the root cause of a flight mishap, damaged/destroyed aircraft and ruined/lost lives?

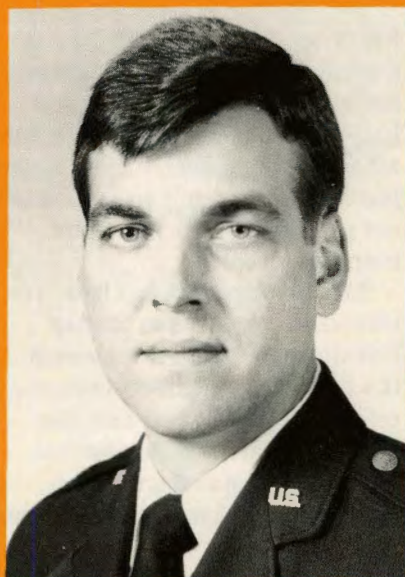
When you detect one that has come on, don't sit back and expect someone else to respond to it.

Look beneath the surface facts of what occurred in a mishap for some of the "warning lights" that should have been or were available.

There are countless "warning lights" that we should be looking and listening for as we work around people, aircraft and the tactical fighter community in general. When you detect one that has come on, don't sit back and expect someone else to respond to it. You're the one who noticed that abnormality that could lead to further problems. Make it your task to see that the potential for trouble is dealt with.

TAC *Aircrew of Distinction Award*

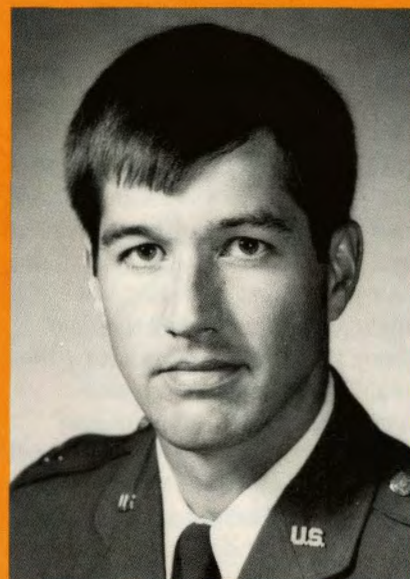
TACTICAL AIR COMMAND



Capt Robert S. Paton
522 TFS, 27 TFW
Cannon AFB NM

Captain R. Scott Paton, F-111D Aircraft Commander, and Captain James C. Gunn, Instructor Weapons Systems Officer, 522d Tactical Fighter Squadron, Cannon AFB NM, were on a functional check flight sortie. While flying at 37,000 feet MSL and .95 MACH just prior to entry into the supersonic corridor, the left engine compressor stalled and stagnated at 40 per cent RPM. Capt Paton declared an emergency with air traffic control while Capt Gunn referred to the engine stall checklist. Capt Paton had retarded

the left throttle to idle and determined the left engine was unresponsive to throttle movement. Less than one minute after the engine had failed, the crew prepared to shut down and restart the left engine in accordance with the dash one checklist. Before the left engine could be shut down, the right engine compressor stalled and stagnated at 40 per cent RPM. Both engines were now stagnated below idle and their F-111D was descending rapidly. The aircrew analyzed the deteriorating situation, and Capt Paton immediately shut down the left engine. As the left engine unwound to windmilling RPM, the right engine remained stagnated. With minimal hydraulic pressure available, the aircrew maintained aircraft control and initiated the airstart of the left engine. The left engine restarted and recovered to military power. They continued the descent to maintain airspeed and turned towards the recovery heading. After leveling off at 22,000 feet MSL, the right engine recovered to a normal flight idle condition. Capt Paton determined that the throttle response of the right engine from idle to military appeared to be normal. Not knowing if either engine was reliable, Capt Paton contacted



Capt James C. Gunn
522 TFS, 27 TFW
Cannon AFB NM

the SOF and informed him of his intention to fly an approach using single engine procedures in case one of the engines failed again. With Cannon's main runway closed due to construction, Capt Paton flew an uneventful approach to the shorter secondary runway.

Capt Paton and Capt Gunn's prompt and professional execution of emergency procedures during a stressful situation prevented the loss of a valuable combat aircraft and earned them the TAC Aircrew of Distinction Award.

MAINTENANCE

Capt David M. Huyck, Jr.
314 AMU
Luke AFB AZ

“Attention all radios this net. Attention all radios this net. AIRCRAFT DOWN with two good chutes; aircraft tail number is XXXX. (Repeat) AIRCRAFT DOWN ...” A maintainer's worst nightmare had just begun! One of our aircraft was down! This day had started out as most others: reviewing last night's fixes, discussing the daily flying schedule and formatting the plan for today's maintenance actions; but circumstances had quickly changed with this radio call.

I'm Captain David M. Huyck, Jr., the Aircraft Maintenance Unit's (AMU) OIC. Speaking from experience, losing an aircraft is an emotional issue. It causes organizations to rethink and question a lot of programs, i.e., emphasis on quality maintenance, putting forth the extra effort, stressing pride and professionalism as an ingredient to overcome adversity, etc. This aircraft's loss delivered a sobering blow to our AMU. Based upon this experience, and recent observations as the maintenance member investigating the loss of another F-16, I decided to write an article to share these experiences with other maintainers.

When the dreadful “SQUAWK” came over the radio, I had been at my desk reviewing paperwork, stopping only briefly to answer the phone or to address one of many visitors to the OIC's office. A lull had

occurred as all the morning flyers were airborne. The NCOIC and the Assistant OIC were at the fuel barn checking on one of our jets with a fuel transfer problem. The Production Superintendent was mobile; and most of our other NCOs were “jobbing away,” working to support the day's activities. Like most OICs, I kept a radio nearby to monitor the daily activity, subconsciously listening to radio chatter as I labored over paperwork.

Despite hearing the SQUAWK, I refused to believe it was one of our aircraft. Those chilling words AIRCRAFT DOWN WITH TWO ... were too distinct and clear. My mind raced. Where was the Chief? Remembering that he was at the fuel barn, I sprinted from my office and past several AMU members; everyone already seemed to be in a daze, struck by this tragic news. At the dispatch counter, a young airman asked me if I'd heard the news. “Yes; yes, unfortunately yes,” I replied as I was beginning to focus on what must be done next.

Fortunately, the initial shock was short lived. We were professionals and had begun reacting. We gathered up training records, impounded the aircraft's forms and the jacket file. Next, we isolated the equipment and tools used to launch the aircraft long before the Quality Assurance (QA) representative arrived to retrieve them. On a

follow-up visit to the AMU, the QA representative was amazed that we had anticipated his requests and had everything ready before he had asked for them. Even though we'd just lost an aircraft, I was proud of our professional reaction to this traumatic event.

Based on the training I had received at the Aircraft Mishap Investigation Course, I requested the load crew, the dispatcher, the crew chief and his assistant, the expeditor and the flight chief to make written statements. Each person captured their part on paper, helping to recreate the events that led up to the launch. The period of disbelief began to pass. Just as ground troops in combat must keep fighting when one of their comrades fall. . .we had “jets” to recover and the next day's flyers to make ready. Each of us knew we could not let this tragedy settle upon the AMU.

When things settled down and I had a moment to reflect upon this loss, the shock hit me again. It is hard to accurately explain the impact, but I felt as if I were in another dimension. We had been trained to perform quality maintenance and to accept nothing but the best from our people at all times. Our goals all seemed to have been compromised.

Looking around the AMU, the atmosphere was amazingly still. The normal spontaneous conversations

TRAUMA

were subdued. Noting this, the Chief and I seized the opportunity to interact and “reglue” our folk’s spirits. Shift change came and went. Even though our swings weren’t on duty when the initial “AIRCRAFT DOWN” came, they too seemed depressed! Again, the Chief and myself, along with the evening “Pro Super,” spoke with all of our people to help them remain focused on their evening’s workload.

The one most affected by this loss was the crew chief who launched the aircraft out on its last mission. The chief had seen this type of depression before. Using his “savvy,” he took this young NCO aside and talked with him, trying to lessen the impact and help him put this into a clear perspective. The guilt the crew chief was feeling was obvious. By going through the prelaunch preparations over and over, and the launch sequence again and again, we helped him realize there was nothing possible he could have or should have done different.

The burden of this loss and its impact on the crew chief moved me. Before that tragic day, I had observed this young maintainer going about his daily business: preflighting, launching, recovering, refueling and preparing aircraft for their next sortie. Whether working the mundane, the complex, or assisting others, he always pitched in and did his part. Now this airman



had the "weight of the world" on his shoulders; he had crewed this F-16 before its last flight.

As I talked to the crew chief, it was easy to see his care and deep concern. I was quite moved when he told the story about the pilot's seven-year-old daughter running up to hug her dad at the hospital. The crew chief told me, "Captain, I realize that lives depend upon my checks. Looking at fluids, the airframe and all . . . pilots depend on me." As the maintenance member investigating another recent aircraft loss, I had a similar moving experience. The crew chief for that aircraft cornered me demanding information about his jet and the

pilot's well being. "Captain," he stated, "I'm the dedicated crew chief, you have to tell me, you just have to, that's my jet . . . you just have to . . .!"

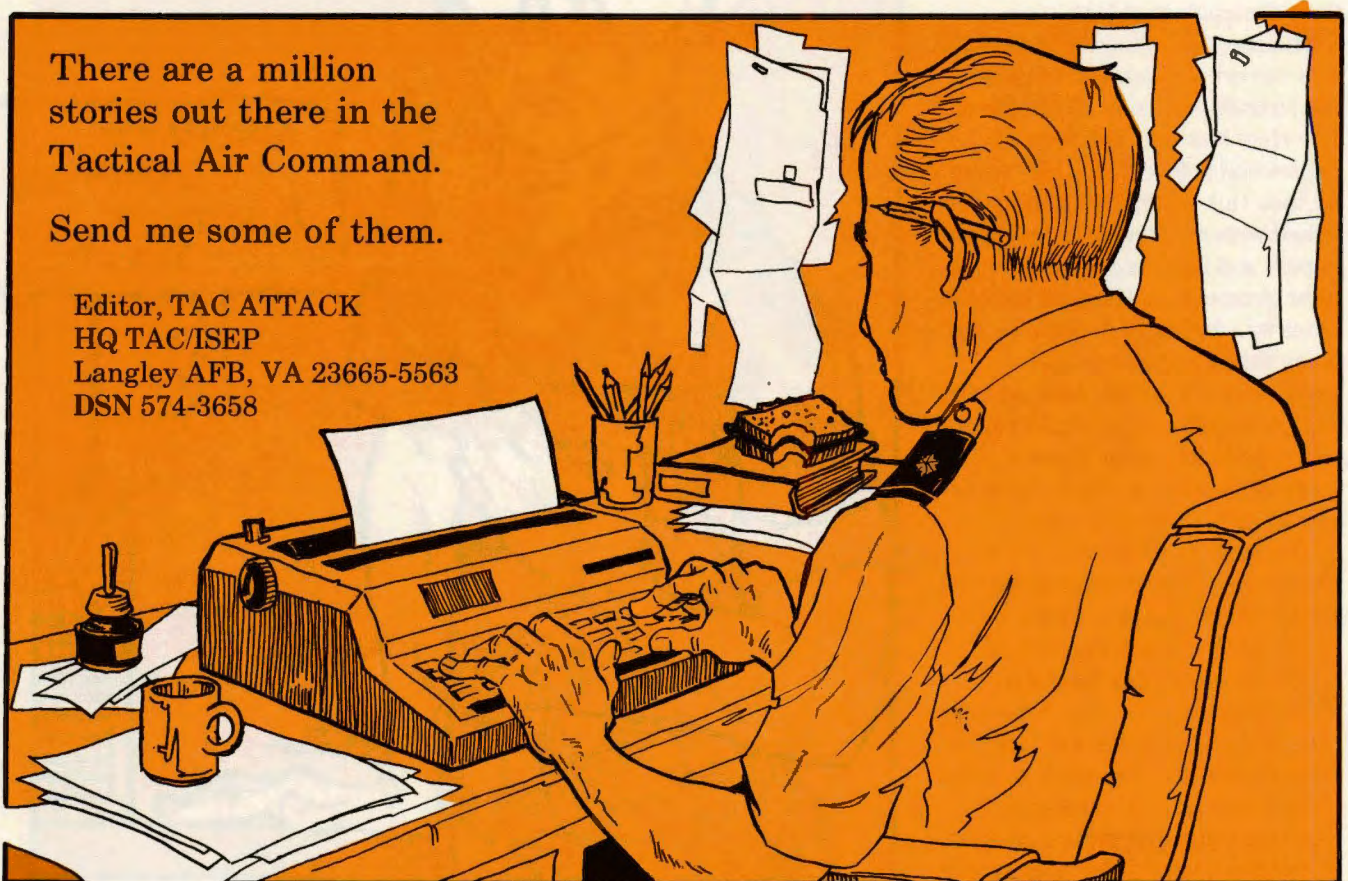
It's a fact; there was nothing either of these crew chiefs could have or should have done differently. However, because they cared so much, each in their own way tried to convince themselves there was something that was missed or overlooked. I'm sure we helped them through this trying time with our talks and support. The decision to place our crew chief on another jet the following day further helped and also reaffirmed to him our confidence in his abilities.

In retrospect, these experiences have given me a better understanding why we in TAC place so much importance on training, and why we maintainers are adamant about compliance with technical data. Within our AMU, the constant emphasis and daily maintenance discipline helped us to remain focused on the mission despite suffering the loss of one of our aircraft. During this critical time, training took over and kept emotional experiences from detracting from the tasks at hand. DESERT STORM further confirmed that teamwork, training, and maintenance discipline are an unbeatable combination. ➤

There are a million stories out there in the Tactical Air Command.

Send me some of them.

Editor, TAC ATTACK
HQ TAC/ISEP
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Fleagle

MAN IS I BEAT. THAT LONG FLIGHT LAST NITE SPLINTERED MY PROPS.



MAYBE A HOT CUP OF COFFEE WILL GET ME GOING.



COFFEE.

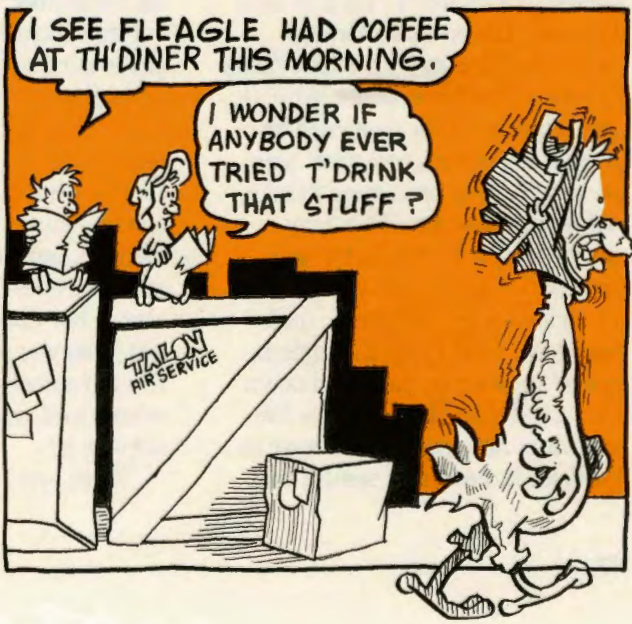


HERE YA'GO MATE, WRAP YA' BEAK 'ROUND THIS.



I SEE FLEAGLE HAD COFFEE AT TH'DINER THIS MORNING.

I WONDER IF ANYBODY EVER TRIED T'DRINK THAT STUFF?





Who, Me Write an Article?

Mr Jimmy Campbell
1AF/SEW

“Who, me write an article for TAC Attack?

You’ve got to be kidding!” That’s exactly how I felt until I tried it once. Then, I discovered there were stories all around me. Take a closer look, and you’ll probably see some of them around you too. Especially if you enjoy swapping lies, I mean sharing experiences, during lunch. You can also enjoy writing it down — your story or theirs — whichever one you liked the best. Haven’t you already heard that one story a dozen times or more? You know what led up to the problem, what happened or almost happened, and what was or should have been done to help solve the situation. This may sound a little brash, but I’ve found it’s true; the stories and experiences are out there. And, you don’t need to be an English major in order to put them down into a publishable format — I’m certainly not one. All you have to do is jot it down and send it in.

All you have to do is jot it down and send it in.

The experts at *TAC Attack* can provide any Quality Assurance or grammatical help your story may need, in addition to adding the right illustrations to help the readers remember your main point.

From technical topics to humorous events, as long as the story helps the readers do their job smarter or to live longer, it’s a player for the magazine. I find that writing personal experience stories, things that happened to me, you, our buddies, and the boss are the easiest for me to write about. For example, when was the last time you or someone close to you did something dumb (or smart) and was lucky enough to survive it?

“What, you want me to tell on

myself or my best friend? No way!” you may be thinking. That’s a normal reaction, but one “Win - Win” solution might be to write the story as if someone else had the problem and you stepped in and saved the day. Or, you could change the names to “protect the innocent.” Anonymous stories are also welcome. Just remember to leave your name off of the article or if you do put your name on it, be sure to tell the folks to print it anonymously. The advantage of including your name and phone number is they can clarify any questions about the story. I am still amazed at how misleading the English language can be, for example: “The scarf wound down around his neck.” Is that “wound” as in wrapped around or as in an injury? After all, it was perfectly clear to me when I wrote it.

If you fly or work on aircraft, you probably have some good ideas that can be developed into

If you fly or work on aircraft, you probably have some good ideas that can be developed into one or more technical stories.

one or more technical stories. Frequently, they require more coordination and research than the per-

sonal experience stories. For example, a few months ago, I wrote a story on munitions color coding. Although I have over 20 years experience in munitions and explosives safety, I still researched several technical orders. Once I had the story down, I coordinated it with the experts at TAC Munitions. To my surprise, I discovered that I had made some technical errors based upon changes that were not yet published in the technical orders. Those changes were incorporated and then the article

was fired off to the magazine staff who included it in a recent issue.

TAC Attack is our magazine. Your inputs can help keep it relevant, timely and useful for all of us in our daily activities in TAC. Whether we're dropping bombs on a classified location or helping to support those who are flying and fighting, let's remember to jot down those lessons learned! Why make someone else have to go through the same experience, if our article can explain the same lesson at a much lower cost?



THERE I WAS

DOWN TO EARTH



**ITEMS THAT CAN AFFECT YOU
AND YOUR FAMILY HERE ON
THE GROUND**

Bob Balsie
Endicott, NY

... sipping a soda and listening to my mother tell me about a near-accident that she had been involved in at a local shopping plaza. It was 1966, and my mom was scheduled to drive my youngest sister Barbara and Barb's friend Wendy to the plaza for an afternoon of shopping. My mom was driving our 1965 Chevy Bel-Air which was equipped with seat belts. The dashboard in this model of the Bel-Air was made of steel, without padding of any type. The top of the dash was shaped into an overhanging ledge which extended all the way across the dash to provide a sunshade for the instruments. My sister was sitting in the back seat, and she wasn't wearing her seat belt. My mother and Wendy were sitting in front and both were buckled up securely.

They arrived at the shopping plaza without incident; and my mother was driving slowly through the parking lot, looking for a good place to leave the car. Suddenly, a woman drove out of a parking space right in front of them! My mom hit the brakes; and due to the very low speed, the car stopped almost instantly without any screeching of tires. Because she wasn't wearing her seat belt, Barb was thrown forward off the rear seat against the back of the front seat; she was not injured. In the front seat, it was a different story—or it would have been if Wendy hadn't been wearing her seat belt. Her body jackknifed downward, but did not move forward at all. Had it not been for the belt, she would have been thrown off the seat, and her face would

have hit the steel overhang on the dash. She probably would have sustained facial cuts and a broken nose or damaged teeth. Instead, she just looked at my mom and said, "Boy, it's a good thing I was wearing this seat belt!"

The point of this story is not that parking lots are dangerous places to drive. Rather, it's simply to suggest that even at very low speeds, accidents can and do happen; seat belts can save you from the injuries that inevitably result when your body is thrown against an immovable object, such as the dashboard or steering wheel of an automobile. My sister couldn't stop herself from being thrown off the back seat of the car at a speed of only a couple of miles per hour. How can you expect to protect yourself from injury when you are traveling at normal driving speeds and are not belted in securely? There is an incredible amount of kinetic energy contained in a human body traveling in a car; this energy cannot be restrained or dissipated by a person holding onto something in the car, or by trying to soften a collision with their arms or legs.

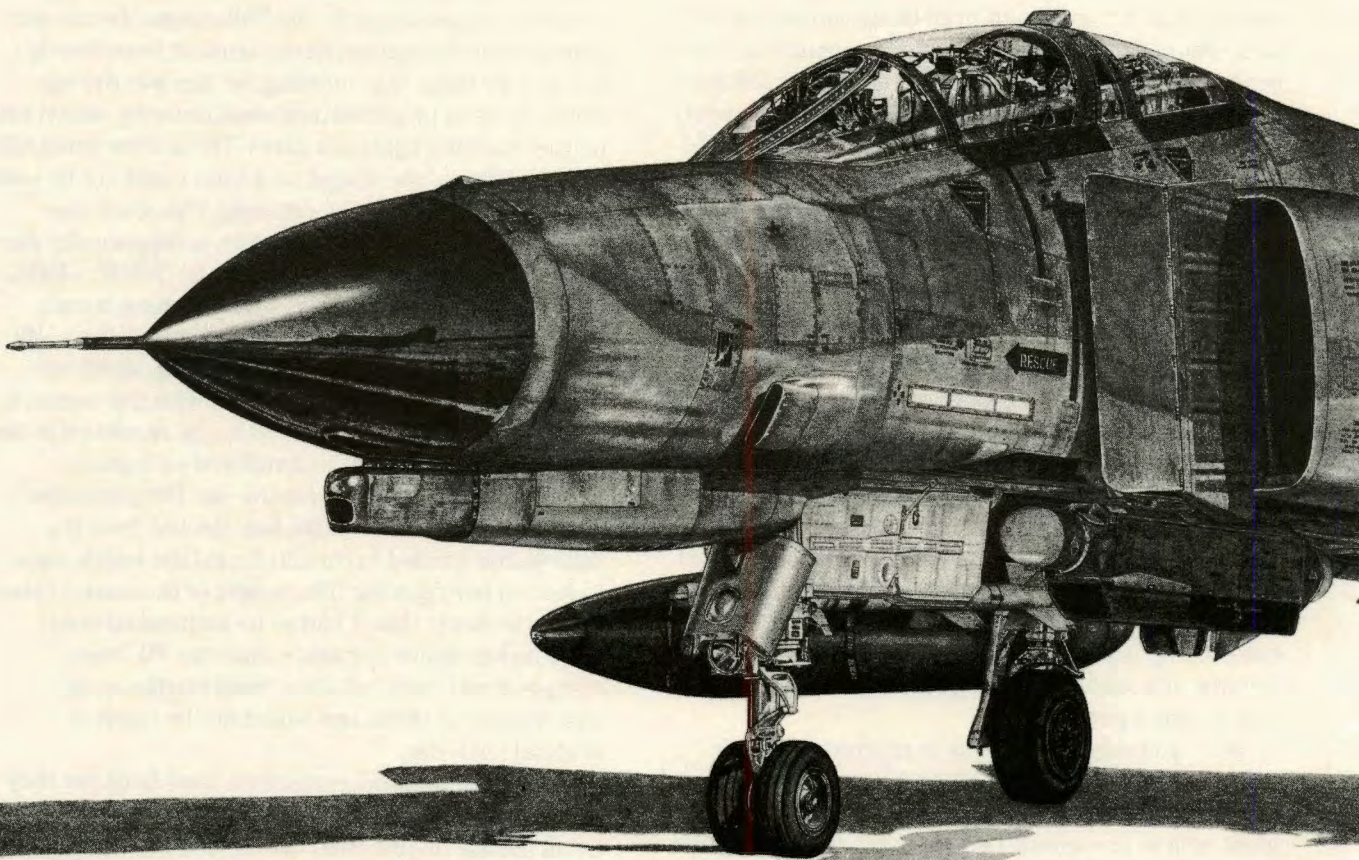
If you aren't convinced yet, perhaps this next story will provide a better illustration. A friend of our family, who is a nurse, once told us about an accident scene where she attended to several of the victims. A man who had been a passenger in one of the cars had not been wearing a seat belt. Apparently, he had seen that a collision was imminent and had put out his arms to lessen the impact of his body against the dashboard. He suffered compound fractures of both arms, as well as other serious injuries. What is especially noteworthy is that this accident did not occur on a freeway at a speed of 70 or 80; it happened in town at only 40 miles per hour.

"But," you may say, "my car is equipped with air bags, so I don't really need seat belts to protect me during an accident." It's true that air bags can be a great help in preventing certain types of injury during an accident, but they have limitations and are not the total solution to the problem. For one thing, they are a "one shot" device; after they have inflated, they begin to deflate immediately and cannot re-inflate in case of a secondary impact. Also, they are effective only in situations where the force of the impact is acting directly forward on the victim's body, such as a head-on crash. They do little or nothing to prevent injury in accidents where lateral forces are involved. Surprisingly, they may not even inflate during this type of collision. Without a device to restrain your

body, you can be thrown around in the car like a ball in a pinball machine; or in the case of a rollover, like a bowling ball in a cement mixer. You could even be thrown out of the car. On the surface, this looks like it might be a good thing, because at least you would be out of the vehicle and away from the wreck. However, you could just as easily be going from the frying pan into the fire. You may strike other hard and stationary objects, such as a tree, a rock or another car.

During my junior year of high school in 1963, one of the guys on the debating team was driving to another school early one Saturday morning for a debating contest. His passenger in the Volkswagen beetle was Marejka, the foreign exchange student from Sweden. It was very foggy that morning, so Jim was driving slowly as he approached a railroad crossing, which had neither warning lights nor gates. There were small hills on both sides of the tracks, so a train could not be seen until it had arrived at the crossing. This track was seldom used by the rail company, so apparently Jim didn't think that it was necessary to "STOP, LOOK, AND LISTEN" for rail traffic. That morning, a train reached the crossing at the same time as Jim's VW. Fortunately, the train was only traveling about ten miles per hour, so when it collided with the beetle, it merely threw it aside into a ditch. Jim remained in the car during the accident and suffered no injuries. However, when the train hit the car, the passenger's door flew open and Marejka was ejected from the vehicle. She landed in the ditch, and the beetle came to rest on her right leg. The weight of the auto crushed her leg so badly that it had to be amputated about eight inches above her ankle. Had the VW been equipped with seat belts and had Marejka been wearing one of them, she would not be using an artificial leg today.

Many people oppose seat belt laws because they want to take responsibility for their own safety. Then, by all means, do just that; take responsibility for your safety by fastening your seat belt every time that you get into the car. Encourage those who ride with you to do the same. Pinball and bowling balls were designed to bounce off other objects; your body was not. Give yourself a break (and keep from getting one) by using your seat belt regularly.





F-4E Joe Plummer, 1986©



HOW MANY FIGHTER PILOTS DOES IT TAKE TO CHANGE A LIGHT BULB?

Lt Col Scott Wales
HQ TAC/ISER

For those few of you who haven't heard this riddle, the book answer is: "None—real fighter pilots aren't afraid of the dark."

Maybe you should be.

Night flying has had limited appeal for most fighter pilots, and presumably always will. The reasons for this are clear enough. The most important one is particularly obvious. It doesn't take a rocket scientist to figure out that when you can't see things, you're

more likely to run into them. Not surprisingly, this is true whether you're on the ground or in the air.

In spite of this obvious limitation, DoD must remain committed to expanding its battle strategy to exploit our technological advances for war fighting during the hours of darkness. This emphasis has never been clearer than it was in DESERT STORM, which was waged on a 24-hour-a-day basis with a heavy emphasis on night attack. A multitude of night vision

Done That

systems are now on line or on the way: LANA, LANTIRN, "stealthy" systems and various versions of night vision goggles have increased our ability to wage war effectively in the dark. Thus, it's becoming increasingly important to be familiar with potential problems that are peculiar to night flying.

In truth, there really aren't many unique problems with night flying. True, our eyes work a little differently in the dark; and we've heard all about this with regularity in physiological training sessions. Almost all our problems have to do with the lack of perceptual cues (it's dark, remember?). Not being able to see makes us do things we shouldn't do, like fly good jets into the ground (or water). Most of these mishaps occur because we still believe our tactile proprioceptors (feelings from the seat of the pants) instead of the instruments. Pilots continue to hit the dirt or the drink without ever being aware that anything is wrong.

Although pilots in all weapons systems are at risk, our newest fighters pose at least as many hazards as older aircraft, and sometimes more. Some of the most recent examples include an F-18, an F-16A, and two F-16Cs.

The F-18 mishap, which involved another nation's aircraft, occurred near the Arctic circle. The aircraft took off in the pre-dawn hours from a remote forward operating location. A fireball was observed 2-1/2 miles from the departure end of the runway. Witnesses on the ground saw the aircraft in a 30 degree nose high afterburner climb prior to impact. The pilot made no attempt to eject and was fatally injured. Preliminary indications pointed toward pilot disorientation, due to acceleration forces and the lack of outside visual references. This visual effect has often been referred to as the "black hole phenomenon."

A TAC F-16C was lost during the fall of last year. The mishap pilot was lead of a two-ship night strike

mission. Just beyond the IP, the wingman noted a fireball on the ground. The mishap aircraft hit the ground at a high rate of speed in a shallow right bank, slightly nose low. The mishap pilot made no attempt to eject and was killed on impact. The board concluded the primary mishap cause was TYPE I spatial disorientation. The pilot apparently developed channelized attention and failed to arrest a shallow descent rate, which had developed after a 45 degree bank turn toward the target. The sparsely populated area and the lack of any moon illumination provided the main ingredients for another "black hole" phenomenon mishap. A somatogravic illusion may have occurred when the pilot accelerated prior to the IP, giving him the sensation of a climb. The natural tendency would be to release back stick or apply forward stick pressure.

Similar conditions also resulted in the loss of an F-16A the previous year on an ACMI calibration test. The mission itself was undemanding, but environmental conditions may have helped set the pilot up for an accident. There was no moon, no discernible horizon, and no useful reference on the ground (actually, it was an over water mission in this case). Another initial case of unrecognized spatial disorientation had a happier result this time. The pilot recognized his problem before water impact (nose low at approximately 1000 feet AGL) and made a timely decision to eject. He survived.

One of the most recent experiences of this phenomenon comes to us from DESERT STORM. It also involved an F-16, and also resulted in the death of the pilot. The mishap pilot was number two of two on a night interdiction training mission, prior to the outbreak of hostilities. After refueling, the flight descended and the flight lead called for the mishap pilot to go to the prebriefed 5 NM trail formation. Shortly thereafter, the pilot indicated he had a radar lock on lead and descended to avoid a cloud deck.

HOW MANY FIGHTER PILOTS DOES IT

Flight lead completed a simulated weapons delivery and heard two call "terminate." Shortly following that call, the mishap aircraft hit the ground. The mishap pilot made no attempt to eject and was fatally injured. The board concluded that flight conditions were conducive to spatial disorientation. Lack of visual references in the AOR have become a common theme in mishap reports, most of which have occurred in daylight conditions. Dust and haze have often obscured normal visual references, compounding the likelihood of disorientation.

What can we conclude about common threads in the mishaps outlined above? The following factors seem to be most prevalent:

1. Misplaced or channelized attention.
2. Lack of appropriate visual cues.
3. Task misprioritization/saturation.
4. Faulty perception of closure or descent rate.
5. Visual illusions.

Complacency was also identified as a factor in the second mishap, which was described as generally a low intensity mission. The others varied from medium to high task loading.

Another common theme is the failure to use available equipment to provide better situational awareness. In several instances the radar altimeter/CARA was available and was not on, or was



TAKE TO CHANGE A LIGHT BULB?

inappropriately set. In the last mishap, the flightlead did not brief the ALOW/MSL floor settings and the wing briefing guide omitted reference to them as well. A survey of CARA-equipped F-16 units revealed 47 percent of pilots surveyed sometimes forget to turn CARA on. This was due at least in part to a misconception about possible injuries to ground personnel from CARA usage. **IF YOU'VE GOT IT, USE IT!**

Pilot failure to maintain an adequate instrument crosscheck is implicit in all of these mishaps. The only pilot who survived did so because he eventually realized that he had become disoriented. He got on the instruments, correctly assessed his flight conditions, and made a timely decision to eject.

Visual and kinesthetic illusions also played a big part in several mishaps. Predictably enough most were tied to the lack of visual cues outside the aircraft. In the third mishap, the board concluded the pilot may have released back pressure on the aircraft control stick. This was due to a kinesthetic illusion which may have developed when the pilot depressed the paddle switch.

Visual illusions due to perceptual illusions of closure rate or descent rate are also common. Attempts to join on ground lights or ships are not unheard of either. Disruption of circadian rhythms, fatigue, and the inherent limitations of night vision systems can all wreak havoc on the unwary aircrew.

Historical experience indicates that units that fly exclusively at night do not necessarily experience higher accident rates. With adequate preparation, training and motivation, night flying does not pose insurmountable obstacles. When pilots are unprepared, overtaken, fatigued or complacent, problems can develop rapidly. Fear is an excellent motivator. Thus, we seldom see accidents in demanding scenarios. The extensive night operations during DESERT STORM seem to bear this out. However, ambiguous situations that occur so often in night flying can create the environment for a fatal

accident. Whenever you're in doubt about your position or your attitude, get on the gauges! And when you aren't in doubt, continue to crosscheck them often.

Consider the scenario you've set up. Is there a valid reason for an extreme low altitude mission, given the threat scenario? If so, can it be scheduled to coincide with full or partial moon illumination? If night vision goggle use is anticipated, the plan may have to be altered further. In addition to these considerations, each aircrew needs to be aware of the various illusions he can expect to encounter at night or in bad weather. Plan low-level routes to avoid steep turns wherever possible, particularly when other actions need to be taken at the same time.

Help in countering these problem areas is available. AFISC/SEL has developed a briefing package which highlights several SDO factors encountered in one mishap. Contact them at DSN 876-3458 or write Lt Col Freeman, AFISC/SEL, Norton AFB CA 92409. It's currently available on viewgraphs and is expected to be available on 35mm slides at a later date.

An Advanced Spatial Disorientation Device (ASDD) was in the development phase for TAC last fall, but has since fallen victim to budgetary considerations. With luck, this will be available in the not too distant future. The first ASDD will be delivered to Brooks (HSD). It is not weapon system specific and will not be used as a procedural trainer. Its primary purpose will be to let crews experience problems related to TYPE I SDO, crosscheck, channelized attention, task saturation, and temporal distortion.

In the meantime, remember flying at night takes additional preparation while you're still on the ground. Careful preflight planning involves thinking ahead of the aircraft at all times. Don't rely on "seat of the pants" techniques once you're airborne; constant crosschecks are the key to successful night flying. Spatial disorientation and misorientation are proven killers many times over. It's up to you to keep "the mud off the hud."



MSgt Ken Lever
42 AD/SEW
Grand Forks AFB ND

The war in the Gulf is over, and our friends and family members will soon be coming home. They did a great job, and we're glad to have them back. All will be bringing home memories and experiences which most of us can only imagine. Some will also bring souvenirs and mementos of their experience to share with their families and friends. Unfortunately, some of these souvenirs will be the kind that should have been left in the desert.

Explosives used in combat are designed to kill; they do not discriminate and, given half a chance, will do just that.

In any conflict which US troops have been involved, someone always tries to bring home some explosive

device as a souvenir, often with tragic results. Explosives used in combat are designed to kill; they do not discriminate and, given half a chance, will do just that.

The military has gone to great lengths to identify these items as dangerous. Most people are aware that there is a color coding system that distinguishes "live" munitions from "dummy" training items. However, these codes may only identify one component of an item as a training item. For example, the blue tip of a 20mm round only indicates that the projectile is nonexplosive; there is still enough powder in the case to propel it several thousand feet. Items of foreign manufacture and those the US makes for foreign countries may not use the same color coding system.

Many people do not realize that some items are not primed with conventional concussion primers. That is, they are not set off by a firing pin striking a primer. Many of them are electrically primed; and when voltage is applied to the primer, it doesn't take much to set it off. It is possible to initiate these items with

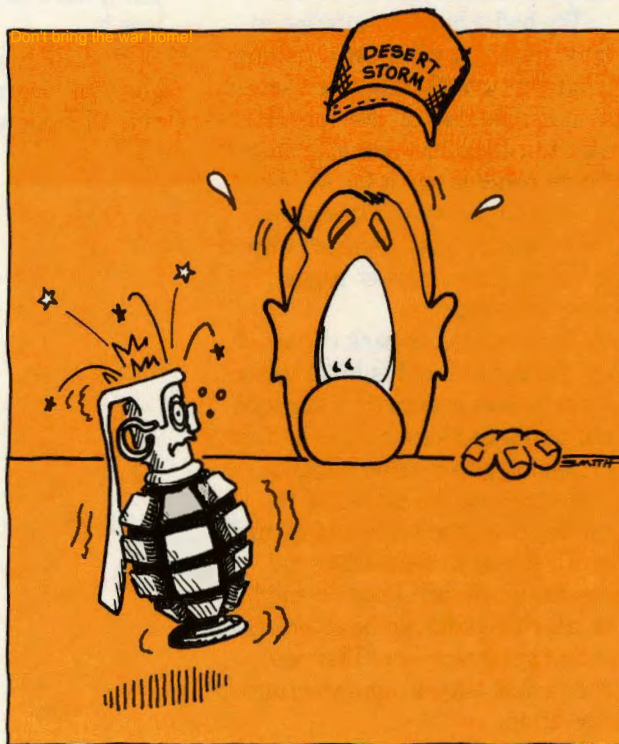
Don't Bring The War Home!

the static electric charge you build up just by walking across the room and touching them. However, that doesn't mean striking them is alright either.

Three months or three years from now your "dud" souvenir may wake up; if it does, it will be a wake up call you'll never forget.

People have the idea that "if it didn't go off, it's a dud." It may be a dud today, but time does strange things to explosives. Three months or three years from now your "dud" souvenir may wake up; if it does, it will be a wake up call you'll never forget.

Okay, you managed to get it through three customs inspectors. They can't catch everything. Anyone who has turned on a TV in the last three months has seen the destructive results of these items. Remember, just one bomblet from a cluster munition could literally shred the inside of an average living room, along with anyone in it. It's sitting there on your piano, and you've just gotten smart and realized that you don't need this thing. Maybe you're not even sure what it is. What do you do with it? Very quickly go to the phone and call the security police or EOD. Don't try to get rid of it yourself. You'll only get hurt or increase the possibility



of hurting someone else when they find it. You may have to answer some questions, but voluntarily turning it in will make it easier than answering the questions from local authorities investigating the death of a family member.

The war is over and behind us—don't bring it home! Leave it over there.

Try Harder and His

Jimmy Campbell
1 AF/SEW

The buds were on the trees and the grass was turning green. Try Harder always greeted this time of the year with mixed emotions. The spring was a wonderful time, but it was also the time to tune up the lawn mower. And, since lawn mowers don't fly, he didn't much care for them.

Try had a burning interest in only one thing other than fishing. That was aviation. He even sewed aviation patches all over his coveralls. If it flies, has flown, or might fly, he could study it for hours; otherwise, he wasn't interested because it usually required him to do work. Lawn mower tuneups were no exception.

Try went to the back corner of his garage to find his lawn mower. First he had to remove a stack of old boxes and leftover Christmas wrapping paper. After tugging and straining, he extracted the mower from the mess and dusted it off. It was in relatively good condition. He had hoped it might be all rusted out, so he could trash it and get a new one. That was the easiest way around the tuneup operation.

Try figured he wouldn't want a new mower anyway. Thanks to the government, all new mowers had those pesky blade or engine control safety devices on them to prevent some dummy from sticking his hand into the rotating blade.

He didn't need any of that stuff; he was smarter than that. Besides,

his mower already had one of those spring loaded levers he had to hold down to keep the engine running. But, he had outsmarted those Federal boys. He made a sheet metal clip that held the lever down all the time. He just pulled it off to stop the engine. Then he put it back in place so he wouldn't lose it.

First thing in a tuneup was the gas tank. Darn, he thought he had run all the gas out last fall. Oh

It was in relatively good condition. He had hoped it might be all rusted out, so he could trash it and get a new one. That was the easiest way around the tuneup operation.

well, he would drain the gas still in the tank and replace it with some fresh stuff. Then he would be ready to sharpen the blade.

The gas can was full of fresh gas, so he had to do something with what he drained off. He knew what, he would put it in the glass fruit jar on the shelf by

the work bench. He would use it later to clean a paint brush or something.

As he finished draining the gas into the fruit jar, Try was startled when Jim, his next-door neighbor, walked up. **CRASH!** The glass jar slipped from his hands to the floor and broke spilling gas over his pants leg and the floor.

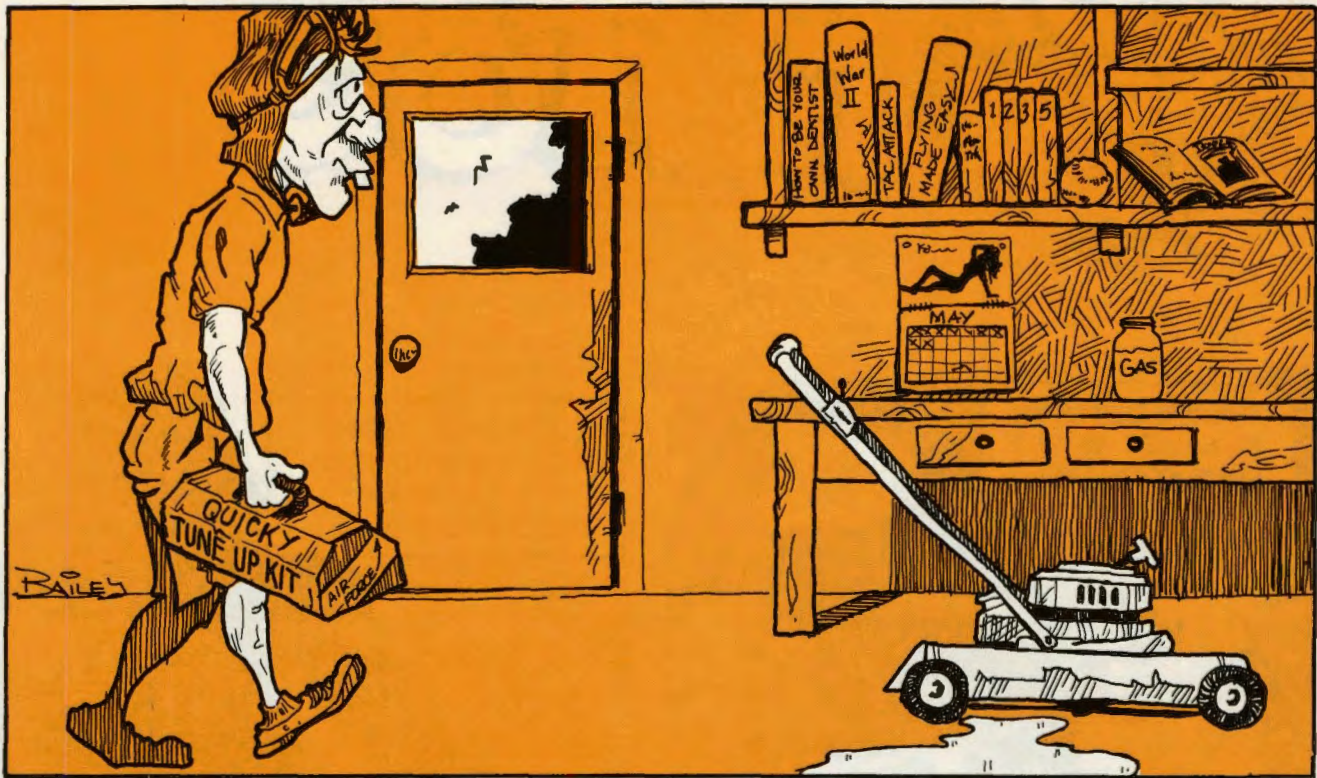
Try knew he was in for it now. He could already hear Jim telling him how lucky he was that the hot water tank hadn't ignited the gas or that it hadn't run down under his 1966 Mustang convertible catching it on fire.

Jim was like that. He often looked beyond the immediate "quick fix" to see which solutions had large unnecessary risk while other methods had more acceptable levels of risk.

After Jim left, Try cleaned up the mess of broken glass and got ready to sharpen the blade. He turned the lawn mower over on its side and removed the blade with his socket wrench.

Try had a nice new bench grinder he would use to grind a sharp edge on the blade. He remembered from high school shop class that it was a good idea to turn the grinding wheel by hand to check for wheel damage before turning on the motor. He also remembered to stand at the side when starting the motor because if the wheel was broken, it might fly apart and hit him. Try found his safety glasses and

Lawn Mower Tuneup



he was now ready. He thought about using his World War I aviator's goggles, but figured they might not be made of safety glass. **WHRRRRRR!** The grinder was working fine. He put on his gloves to protect his hands from the hot sparks and sharp blade and started to grind.

GGGRRRRRRRR!
WHHAMM! BANG! The blade was yanked from his hand and into the grinding wheel. The grinding wheel broke throwing dust and wheel parts in all directions. He attempted to duck, but it was too late. One of the wheel

parts struck him in the shoulder.

The next thing he knew he was sitting on the floor thinking how lucky he was. He could have been seriously hurt if a larger piece of the wheel had hit him. He also remembered the rest of his high school shop safety briefing. The teacher had told him to keep the tool rest close to the wheel to prevent the part he was grinding from being dragged between the tool rest and the wheel.

Try went to the hardware store and bought a new blade. He put the blade on the engine shaft and installed the washer and nut.

Then he placed his socket wrench on the nut and gave it a quick jerking pull to tighten it down.

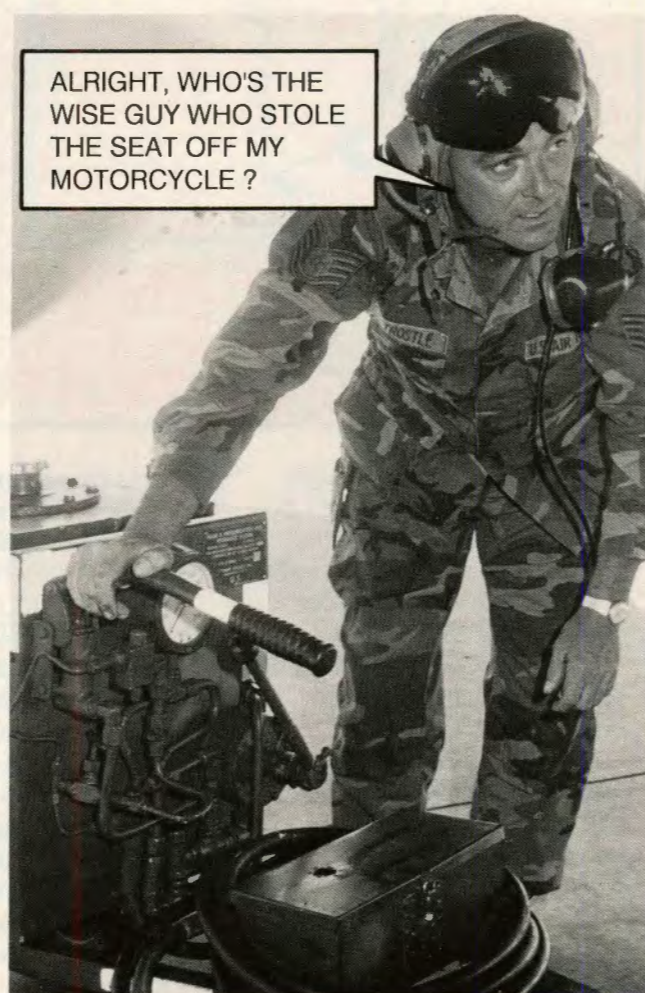
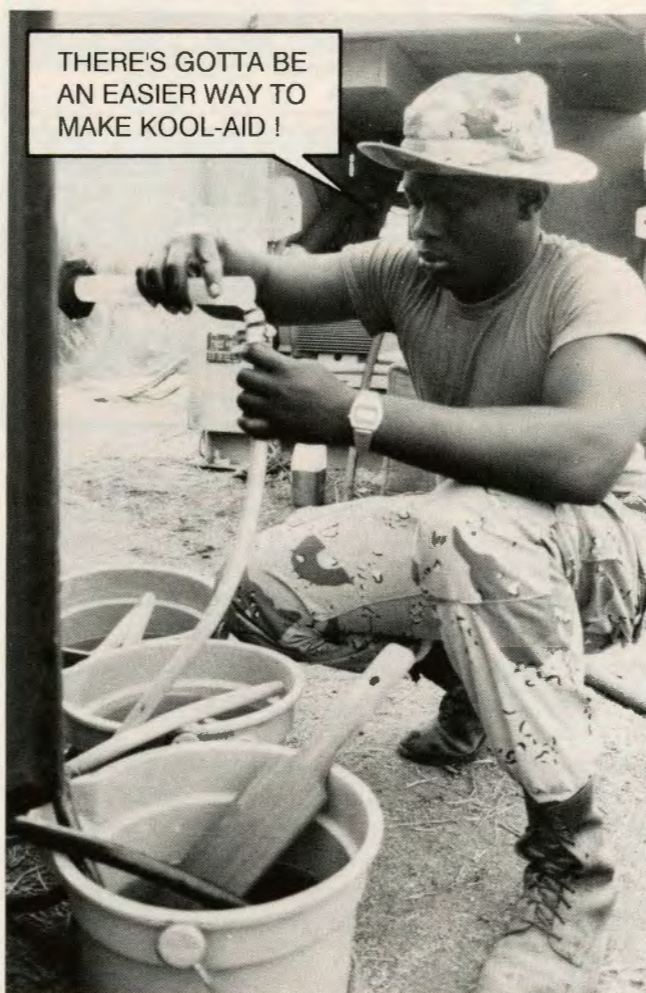
PUTT! PUTT! BANG!
WHINNNE! CRASH! RRIPP!

The engine started. The socket wrench was thrown across the garage and impacted the Mustang's windshield.

Try thought as he surveyed the damage, I guess I should have listened closer to Jim when he told me not to bypass the safety devices those government boys placed on my lawn mower.



Funny Fotos







CHOCK TALK

chock talk

A TRUE STORY: IN THE BLINK OF AN EYE

Al Cunningham
ACE General Foreman
Robins AFB GA

Courtesy of the Center Safety Office, Sheppard AFB TX

How can a token of love become a mental and physical anguish to you and your loved ones? Over the last 34 years, I have heard every excuse why someone insists on wearing his or her wedding



MAKE WEARING A RING SAFER

ring while working. I've also quoted most of the reasons not to wear one when I get home with my ring still on my key ring. Then I get the old questions: "Why don't you have your ring on? Don't you love me?" Well, I have a new excuse now.

On March 1990, while TDY to Patrick AFB FL, a coworker and I were working maintenance problems on two T-37B aircraft. Like any safety conscious individual, my watch and rings were securely stored in the cab of the truck. By 1400 hours, one aircraft was fixed and the other was at a work stoppage due to parts. While my coworker was securing the aircraft, I decided to tie down the equipment in the back of the ton-and-a-half truck. Ten minutes later, with the equipment tied down, I got off the tailgate and went to the cab. While putting on my watch and wedding ring, I noticed the box containing the broken part on the seat and it also needed to be put in the back of the truck. Without thinking, I grabbed the box and placed it on the back of the truck, but was unable to push it back far enough to get the tailgate rail installed. I stood on the steel bumper with my left hand on the tailgate rail and pulled myself up to push the box into the truck. My foot slipped; and in the blink of an eye, I fell backward catching my left ring finger on the rail and de-gloving my finger from the bone. My wedding ring, that token of love, fell twisted to the bed of the truck as my mangled finger hit the pavement. At that instant, all the reasons, good intentions and excuses could not change the grim reality of my thoughtlessness.

After medical evaluation and consultation with a plastic surgeon and hand specialist, it was determined that the finger could not be successfully reattached. At 1700 hours, what remained of my left ring finger was amputated a half inch above the hand. My wife and I both feel at fault and share the anguish of this mishap —me for my lapse in safety awareness, and her for the years of pressure to wear that token of love. Our love is stronger than ever now, even without a token.

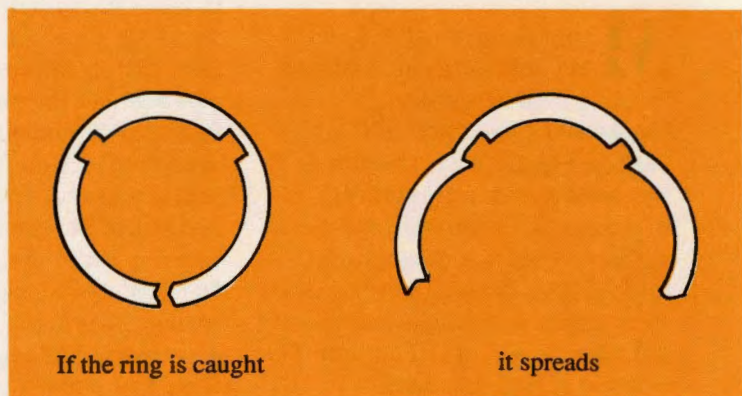
A token of love could become a mental and physical anguish to you and your loved ones. It can happen in the blink of an eye—and, **IT CAN HAPPEN TO YOU!**

Wearing rings can be dangerous, especially when working around machines. The ring could get caught on or by something and yank your finger off, or at least a part of it.

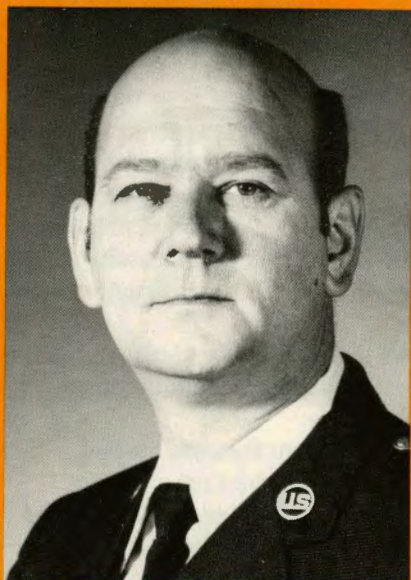
Now you can make wearing rings safer by cutting slots in the ring. Then, if the ring gets caught by something, it will break away instead of tearing your finger up. Slotting is simple and inexpensive, and it doesn't spoil the ring. You'll need a jeweler, unless you have a fine-metal saw. And if your jeweler isn't familiar with slotting rings, here's the instructions and a diagram.

1. Enlarge the ring to the correct size if it's too tight.
2. Cut two slots partially through from the inside at the 2:30 and 10:30 positions.
3. At the 6 o'clock position, cut through the ring completely. From the inside of the ring, cut a slot straight down for $\frac{1}{3}$ of the diameter, then angle the cut diagonally to the right for the remaining $\frac{2}{3}$ of the diameter. For a ring with a thin diameter, make the whole cut diagonal.

Slotting a ring is not a substitute for the regs. When rings are prohibited don't wear them at all.



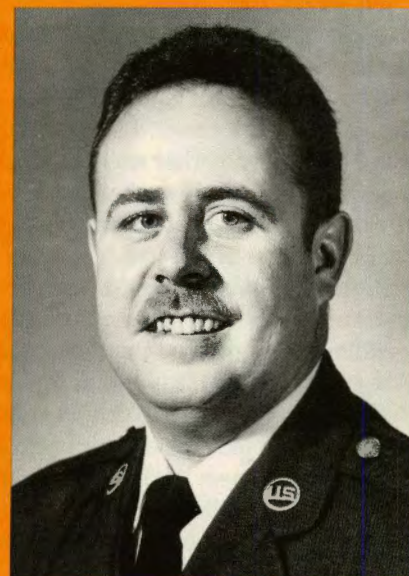
Outstanding Individual Safety Achievement Award



MSgt Dale E. Rock
27 EMS, 27 TFW
Cannon AFB NM

Master Sergeant Dale E. Rock and Staff Sergeant Johnny E. Douglas, 27th Equipment Maintenance Squadron, 27th Tactical Fighter Wing, Cannon AFB NM, have significantly contributed to the mission accomplishment and mishap prevention program. Sgt Rock and Sgt Douglas were assisting Aero Repair with the installation of a #1 flap on an F-111G aircraft. The weather at that time had deteriorated to 6 degrees with a wind chill of -25 degrees and light

snow. Two H-1 heaters were being used for heat in the maintenance area. At approximately 0050 hours, Sgt Rock was walking to a maintenance vehicle to get warm when he noticed flames coming from one of the H-1 heaters. The flames were being fanned by the blower through the heater hose, which was burning at a rapid rate, toward the aircraft. Sgt Rock ran towards the burning heater shouting "Fire." Sgt Douglas immediately ran to assist Sgt Rock, and together they pushed the heater clear of the maintenance area. Sgt Rock then ran over to the maintenance stand by the aircraft and pulled the remaining part of the burning heater duct from it. Sgt Douglas used a halon fire extinguisher to put out the fire. Only 45 seconds had elapsed since Sgt Rock first noticed the flames. With the situation under control, he went to a radio equipped vehicle and



SSgt Johnny E. Douglas
27 EMS, 27 TFW
Cannon AFB NM

called the Maintenance Operations Center to ensure the fire department had been notified. Through their quick actions, professionalism and knowledge of safety procedures, they prevented a possible catastrophic accident. Their ability to react under extreme pressure and provide the outstanding leadership necessary under emergency conditions earned them the TAC Outstanding Individual Safety Achievement Award.



TAC TALLY

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

* (SUCCESSFUL/UNSUCCESSFUL)

TOTAL			TAC			ANG			AFR		
MAR	THRU MAR		MAR	THRU MAR		MAR	THRU MAR		MAR	THRU MAR	
	FY91	FY90		FY91	FY90		FY91	FY90		FY91	FY90
3	14	12	1	8	8	2	6	1	0	0	3
0	4	6	0	1	2	0	3	2	0	0	2
4/0	10/1	7/0	1/0	4/0	5/0	3/0	6/1	0/0	0/0	0/0	2/0
0/0	0/2	1/1	0/0	0/0	1/1	0/0	0/2	0/0	0/0	0/0	0/0

CLASS A MISHAP COMPARISON RATE

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

TAC	FY91	0.0	0.0	0.7	1.8	2.2	2.1	0.0	0.0	0.0	0.0	0.0	0.0
	FY90	1.8	2.8	2.7	3.0	2.4	2.7	2.8	2.9	2.8	2.7	2.8	3.2
ANG	FY91	3.8	2.0	1.3	3.9	3.2	4.0	0.0	0.0	0.0	0.0	0.0	0.0
	FY90	0.0	0.0	1.6	1.2	0.9	0.8	1.3	2.2	2.4	2.2	2.0	2.2
AFR	FY91	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	FY90	20.4	11.2	8.2	5.9	4.7	7.7	6.4	5.5	4.8	4.4	4.0	3.6
TOTAL	FY91	1.2	0.6	0.8	2.3	2.4	2.5	0.0	0.0	0.0	0.0	0.0	0.0
	FY90	2.4	2.5	2.7	2.6	2.1	2.4	2.6	2.9	2.8	2.7	2.6	3.0
MONTH		OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP

TAC'S TOP 5 thru MAR 1991

1st AF		9th AF		12th AF	
"COMMAND-CONTROLLED CLASS A MISHAP-FREE MONTHS"					
137	48 FIS	45	1 TFW	47	479 TTW
62	57 FIS	24	56 TTW	39	355 TTW
22	325 TTW	16	31 TFW	38	366 TFW
		15	33 TFW	33	27 TFW
		11	23 TFW	19	49 TFW

ANG		AFRES		DRUs	
"COMMAND-CONTROLLED CLASS A MISHAP-FREE MONTHS"					
458	119 FIG	156	301 TFW	174	552 AWACW
434	147 FIG	119	482 TFW	65	28 AD
238	110 TASG	116	924 TFG	44	USAFTAWC
218	177 FIG	104	906 TFG	36	USAFTFWC
218	138 TFG	79	507 TFG		

DESERT DIARY

THIS PAGE IS DEDICATED
TO OUR TROOPS IN OPERATION DESERT STORM

(Reprinted from the *Desert Defender*, a newspaper supporting Operation Desert Storm)

