

TAC ATTACK

MARCH 1990



ANGLE OF ATTACK

There are things that can cause us problems and then **THERE ARE THINGS THAT CAN CAUSE US PROBLEMS!** Let's relate that to some of our aircraft. Each one of the airplanes we fly has switches and levers which could be called critical. If we inadvertently utilize them in the wrong way or at the wrong time they can literally ruin our day. Some switches are universal to all our TAC and TAC-gained aircraft from the F-15 to the E-3, for example the landing gear handle and the throttle cut-off. No matter how many times you have correctly used them, it only takes one unplanned landing with the rollers up or shutting down the engine(s) in the pattern to cancel out your previous Sierra Hotel performance. Some other critical switches are: A-7 fuel master handle, master generator switch; A-10 fire lights; F-4 engine master switches; F-15 engine master switches, fire lights; F-16 fuel master switch, generator switch; and F-111 fire push buttons, fuel dump switch. During any emergency, we really need to understand what we are doing. This is especially true if one of these critical switches is close to the switches the emergency procedure(s) reference.

Speaking of emergency procedures, there may be an unwanted trend developing. Most of our crews are doing a good job with the first basic step for handling any aircraft emergency — **maintaining aircraft control**. But, some aircrews have recently taken a minor emergency and in their haste to land the jet have transformed the minor problem into a potential for a major mishap. There are some emergencies which dictate the aircraft should be landed as soon as possible. But the majority of in-flight emergencies are in the "land as soon as practicable" category. For those emergencies, the old adage of "stop and wind the aircraft clock" can help prevent us from inadvertently



tently shutting down a perfectly good engine that has only a failed tachometer. It can also help you to remember it is **YOU** — not lead, not the SOF, not ATC — but **YOU** are the person that must maintain aircraft control and then analyze the situation. Don't let yourself be rushed just because ATC transmits "cleared for . . ." If you haven't completed and understood all of the required checklist items, tell ATC that you are still holding and you will call them when you are ready to begin the approach. As a high time IP used to say, "Remember, no one can rush you except yourself."

We are starting to come out of the bad weather, and more and more of our people will be taking to the roads. But before we go off unprepared, we need to remember it is still winter. Although it looks nice outside right now, the weather can change very fast. We still need to ensure our cars are prepared and equipped to cope with the bad weather we may run into.

I want to say goodbye to the entire *TAC Attack* art department. SSgt Dennis Wallace, who's center art and illustrations have been outstanding, is departing for Incirlik AB, Turkey. Mr. Stan Hardison, the Art Editor and creator of "Fleagle," is retiring to North Carolina after completing 24 years with *TAC Attack*. Good luck and Godspeed to both of you.

Happy St. Patrick's Day, pardner.

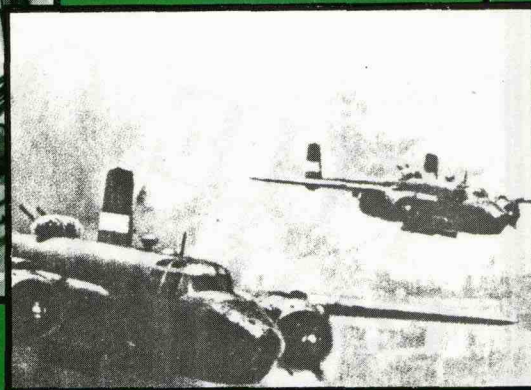
Jack Gawelko
JACK GAWELKO, Colonel, USAF
Chief of Safety

TAC ATTACK

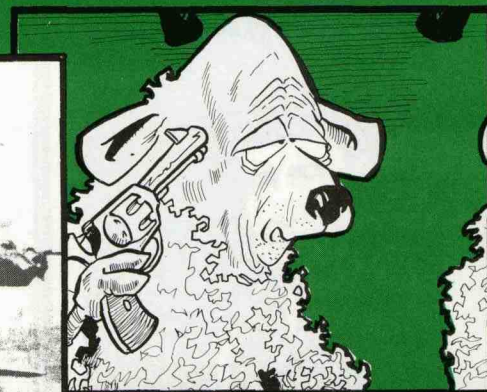
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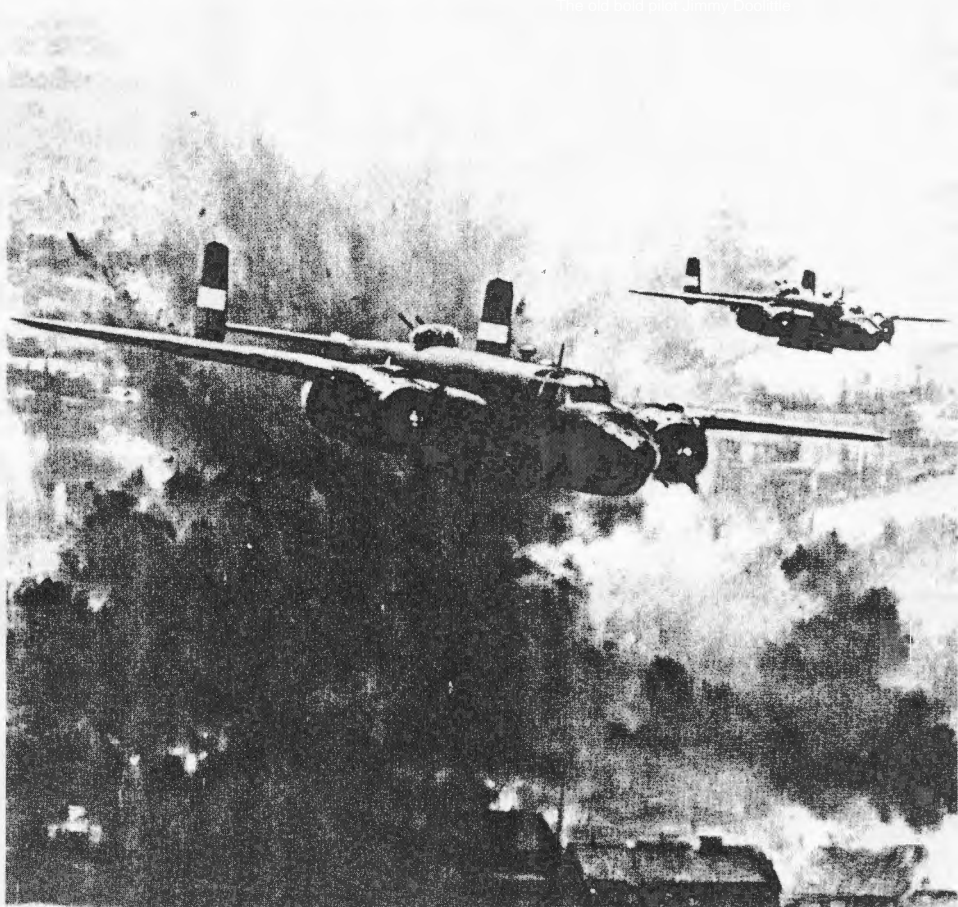
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THE OLD BOLD PILOT-

JIMMY DOOLITTLE



Lt Col Scott P. Wales
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Mention Jimmy Doolittle and most people will think instantly of what was easily his most famous exploit — the audacious and unprecedented air raid on Tokyo in April 1942. Launched from the deck of the Navy Carrier Hornet, his B-25s surprised the Japanese completely, and dealt a telling psychological blow from which the enemy never recovered. This daring invasion of the Japanese homeland earned Doolittle the Medal of Honor and a promotion from Lieutenant Colonel directly to Brigadier General. Although he earned fame and “star” status as a hero for this one event, “Doolittle’s Raid” was only one of a striking number of aviation feats which distinguished him as a master aviator.

Doolittle started his love affair with aviation early in life. By the time he was a teenager, he had built a glider and crashed it several times. In October 1917, he enlisted in the Aviation Section

By the time he was a teenager, he had built a glider and crashed it several times.

of the Army’s Signal Corps. In March 1918, after completing his flight training at Rockwell Field, California, he was commissioned as a second lieutenant.

For the next several years, Doolittle served as a flight and gunnery instructor. In September 1922, he performed the first of his record breaking exploits by flying from Pablo Beach, Florida, to San Diego, California; this marked the first time the country had been spanned in less than one day. He was honored for the achievement with his first Distinguished Flying Cross. Aircraft acceleration tests and special training in high speed seaplanes followed. The year 1925 saw him win the Schneider Cup Races as pilot of a Curtiss R3C-2. He set a new world speed record and was awarded the MacKay Trophy by the Army Air Service for that feat. In 1926 he went to South America, where he made a number of demonstration flights in a Curtiss P-1 (at the time the hottest US production fighter).

The difference between his public image and his real character was clearly demonstrated in May 1927 when he performed the world’s first outside loop. He made it sound like a lark when he talked about it afterward with the press. His comment at the time was “I don’t know why I did it . . . just thought of it on the spur of the moment.” In reality, he had thought about the stunt for over a month and practiced parts of the maneuver for many hours. What appeared to be a whim was

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very carefully considered and plotted over a protracted period of time. 1929 saw Doolittle accomplish another feat — on September 24, he took off, flew a course and landed without outside reference. This first “blind” flight was accomplished by Jimmy’s successful blending of research, advanced radio technology and aircraft instrumentation, especially in the use of gyroscopes.

Like many military pilots, he saw greener grass (or bluer skies) elsewhere and resigned his commission to become the head of Shell Oil Company’s aviation section in 1930 (becoming Shell’s first “answer man”). Racing and acrobatics were still staples of his new career, and he won the Bendix Race in 1931; this was an annual aerial competition from Burbank, California, to Cleveland, Ohio. Not content with this achievement, he refueled and soon took off again, next landing in Newark, New Jersey. He thus set another cross-country speed record and had become the first pilot to cross the



THE OLD BOLD PILOT JIMMY DOOLITTLE

To a man such as Doolittle, life is an adventure - he constantly and consistently pushed the limits to achieve his objectives.

The folklore which surrounds a hero sometimes overlooks the fact that he succeeded only because he managed to stay alive while in the pursuit of his objective.

United States in less than half a day. In 1932, he flew the Geebee Racer to win the Thompson Trophy Race. The stubby little plane was acknowledged by Doolittle as "the most dangerous aircraft ever built." Many pilots concurred in this assessment and it may have even scared Jimmy - it was the last race he ever flew.

Doolittle's flying career was not without its reverses. In addition to his early glider crashes, he also made emergency bailouts from three other aircraft. In 1929, he parted company with a Curtiss P-1 Hawk at the Cleveland Air Races. In 1930, he jumped out of a crippled Beech Travelair. Finally, in 1942 Jimmy left his B-25 when it ran out of fuel after his fabled Tokyo Raid.

Nor was his legendary daring always in the air. He was discussing Douglas Fairbanks' movie *bravado* one night at a Chilean pilots' cocktail party. He had gone to South America to demonstrate the hot new Curtiss P-1. Feeling slightly puckish, he was overheard comparing himself favorably with the actor and declaring "Douglas Fairbanks is not especially talented as an acrobat . . . any American kid can do those things." He proceeded to demonstrate handstands on the floor and walked on his hands through the crowded lounge to much applause. A handstand on a railing followed. The crowd responded with more applause which made him even bolder. He proceeded next outside

to a narrow ledge, and grasping it with one arm, extended his body straight out, parallel to the ground. The trick required strong arms and good knowledge of leverage. It was to be one of his few serious miscalculations. The ledge crumbled and he plummeted to the courtyard below, breaking both ankles.

Despite his injuries, he was back flying two days later, his feet both in casts and strapped to the rudder pedals. He continued with his demonstration flights and soundly trounced the opposition, one Ernest Von Schoenbeck, a World War I German Ace.

To a man such as Doolittle, life is an adventure — he constantly and consistently pushed the limits to achieve his objectives. For him, life at its best often involved substantial personal risk for worthwhile goals. Life is full of necessary risks for each of us — even crossing a busy street involves risk to some degree. All of us are exposed to some type of risk each day at home and at work. What separates the life of such a man from the rest of us are three main ingredients:

First, and probably most important, is a goal on which to focus and a burning desire to accomplish what needs to be done to reach that goal. Second is the implicit acceptance of some degree of risk for **a good reason**, which is to accomplish a worthwhile objective. Third is careful planning, to avoid unnecessary risks

which would result in failure. The man who is able to do all three successfully has the potential to become a truly heroic figure — one universally admired for his accomplishments. The folklore which surrounds a hero sometimes overlooks the fact that he succeeded only because he managed to stay alive while in the pursuit of his objective. This entails a certain element of sheer good luck. However, it is essential to remember that risk is a relative concept and can be reduced by skill, training and prudence. The more you practice and hone your skills the “luckier” you get.

Taking risks can enhance self-esteem and peer group acceptance. Furthermore, psychologists indicate that risk taking behavior may be inherited. Type T behavior (T for thrills) may be something that we are thus pre-programmed for from birth. Channeling this type of behavior in creative ways can be an asset, according to researchers, who stress that environment and education can favorably affect “T types.” Risk takers are separated into five personality types as follows:

1. The individual who **knows** and **understands danger** but **does not sense its presence**.
2. The individual who **could perceive hazards**, but is simply **not thinking** about them.
3. People who are **ignorant of risk** and thus **enter a hazardous situation**.

4. Those who **deliberately** enter a **dangerous** situation having **considered the risk and deciding** the odds are in their favor.

5. Those who **realize the danger** and **believe** themselves to be **invulnerable**.

Risk takers are further divided into three separate categories:

1. Those for whom risk is occupationally unavoidable — this is true for construction workers, steeple jacks, and infantry soldiers.

2. Those who lead routine and structured lives and seek exhilaration in risky outside activities — accountants who go hang gliding or staff officers who volunteer for a flying staff slot, not because they need to, but because they want to, come to mind.

3. People who have a high need for achievement and control, and are often unsatisfied with current levels of professional or personal development. Virtually any fighter pilot, WSO, or EWO could see himself in this category.

Flying is an inherently risky business, but there are many

Most mishaps are not chance events— they don’t “just happen.” In general, they are caused by human error, often by people who take unnecessary risk.

ways to reduce the hazards associated with this profession. Staying in top physical and mental shape, thorough planning, and being prepared for emergencies will all help to ensure that you realize your personal and professional aspirations. Unfortunately, goals and achievements during peacetime are often rather prosaic. They are almost always less dramatic than O-plans being employed against an active adversary or the immediate gratification of seeing a hostile bandit explode as your missile finds its mark. Nevertheless, you’ll never attain even your less spectacular peacetime goals if you’re in the “mort locker.”

Most mishaps are not chance events — they don’t “just happen.” In general, they are caused by human error, often by people who take unnecessary risks. As noted above, even giants such as Doolittle sometimes took needless risks. Unfortunately, in peacetime, there are few opportunities to be a hero, and many ways to be the “goat.” Performing unauthorized maneuvers or delaying a timely ejection decision are two easy ways to ruin your work day. Was Doolittle just lucky or had he already done his homework and honed his basic skills, so he was ready to seize the initiative when an opportunity arose? Can “Lady Luck” alone make you into one of those few old bold pilots? Don’t bet your life on it — avoid taking needless risks!



WEAPONS WORDS

RELATED

MSgt James M. Aust Jr.
HQ TAC/SEW

The following article is the first of a series to provide "the user" (maintenance personnel and commanders) information concerning Explosives Safety issues, specifically as they relate to AFR 127-100. Monthly subjects, such as Quantity-Distance, Deployment Planning, Explosives Transportation, general safety requirements, etc., will be addressed. To make this series more meaningful to you, we solicit and want to answer your questions. Please send all inputs in writing to HQ TAC/SEW, Langley AFB, VA 23665-5563. Be sure to include your unit, office symbol, autovon number, and if you want your question to be published anonymously or not.

ARE YOU RELATED

Dispersal is a strategy in use by all military operations throughout the world to limit loss of or damage to vital resources during war. Likewise, Quantity-Distance is a strategy used in explosives safety to

provide a means of separating our resources to limit and even prevent loss or damage. The amount of quantity-distance separation (level of protection) required depends upon the hazard class/division of explosives and what is being exposed to this hazard. Basically, there are four types of quantity-distance: Inhabited Building distance (greatest), Public Traffic Route distance, Intraline distance, and Intermagazine distance (least amount). See Chapter 5, AFR 127-100 for details and exceptions. Quantity-Distance is a leading player in a Department of Defense initiative — **AIR BASE SURVIVABILITY**. Our ability to survive hostile attacks or explosive mishaps and come back fighting is essential to our national security.

"Related" is a term used in explosives safety to determine permissible exposures to an explosives location. Personnel and facilities which directly support an explosives location are considered to be "related" and are permitted to be at less distance (Intraline) than those that indirectly support (unrelated) the explosives location. These unrelated personnel/facilities require Inhabited Building distance. The Intraline distance which is used for related personnel/facilities does not afford as great a level of protection from the effects of an explosion as the Inhabited Building distance provides. At the Intraline distance, blast overpressure and fragmentation would cause severe injuries, some fatal, with major structural damage to unstrengthened facilities. Due to the greatly increased risk of injuries and damage at Intraline distance, every effort must be made to limit, as much as possible, the number of personnel/facilities required to operate at the Intraline distance.

Our most common areas of confusion and misinterpretation are munitions maintenance activities and combat aircraft related facilities. Operating locations in the munitions storage area are used to conduct maintenance or inspection of munitions. Personnel who actually conduct these tasks are authorized at



the explosives location without any specific separation. Munitions operations, such as AFK, Dispatch, Trailer Maintenance, Administration, etc., are functions which directly support the munitions maintenance and inspection operation and are, therefore, authorized to be located at Intraline distance. Combat aircraft related facilities are activities conducting or directing the generation of a unit's combat aircraft. An example of an explosives operation directly supporting the generation of combat aircraft is munitions build-up operations. These operations can be located at no less than Intraline distance from combat aircraft parking. However, combat aircraft do not directly support the build-up of munitions and must be located at no less than Incremental K30 aircraft separation. Another confusing area is two activities directly supporting (related) combat aircraft, but are not related to each other. For example, fuel cell repair and bomb build-up operations are related to combat

aircraft, but the fuel cell repair activity does not directly support the build-up of munitions. The required separation is Inhabited Building distance from the bomb build-up operation to the fuel cell repair operation. From the preceding examples, it's obvious how confusion and misinterpretations can exist in determining which activities are related and what type of Quantity-Distance is required. Just as we disperse our equipment and people on the flight line, it is critical that we plan to disperse our munitions operations.

People are our most important resource and exposing them to potential explosion sources is a decision for which the Air Force must sometimes accept risks, but we should exhaust all alternatives to provide the maximum not minimum separation from explosion sources. Remember, these people provide **direct support** to the explosives operation and without them, we cannot make the mission.



TAC GROUND SAFETY AWARD OF THE QUARTER

Sergeant Susan Koester, 56th Combat Support Squadron, 56th Tactical Training Wing, MacDill AFB, Florida, has provided outstanding support for the 56 TTW and 56 CSS safety programs. As the Additional Duty Ground Safety representative for Avon Park Air Force Range, her numerous contributions have increased the safety awareness of resident personnel and turned a 1988 marginal program into a 1989 excellent rating. Her aggressive approach to safety has increased Avon Park seat belt usage rates by 20 percent and reduced reportable mishaps by 80 percent, exceeding wing and TAC goals seven fold. These efforts have further reduced mishap costs by \$240,000. In addition to positively affecting the ground safety mis-

hap rate, Sgt Koester devotes her personal time to conducting seat belt checks and specialized training and has attended the Occupational Safety and Health Administration's course "Workplace Back Injuries." The knowledge gained helped her establish a preventive back injury program at Avon Park. Sgt Koester has taken the initiative to integrate off-duty mishap prevention programs with local agencies. Her efforts in this area have resulted in engineering changes to roadways in and around Avon Park. Due to the exemplary performance displayed during her tenure as Avon Park's only unit safety representative, Sgt Koester has earned the TAC Ground Safety Award of the Quarter.



Sgt Susan Koester
56 CSS, 56 TTW
MacDill AFB FL



DOWN TO EARTH

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

Child Restraint Laws

Mr. Ken Morris
366 TFW/SEG
Mountain Home AFB ID

A recent incident occurred in Idaho which illustrates the importance of properly using child restraints. A driver slammed on his brakes to avoid a

collision. He then watched helplessly as his ten-month-old child rocketed into the dashboard and rebounded onto the floor. The child was laying in the safety seat, but he wasn't buckled into it. The good news is that the infant survived, although he required three days of hospitalization for multiple fractures. The bad news soon followed. Two police officers arrived at the driver's home, arrested him, and transported him to jail on a felony charge — causing serious injury to a child. The driver now faces up to three months in jail after having pleaded guilty to a lesser charge, child injury which is a misdemeanor.

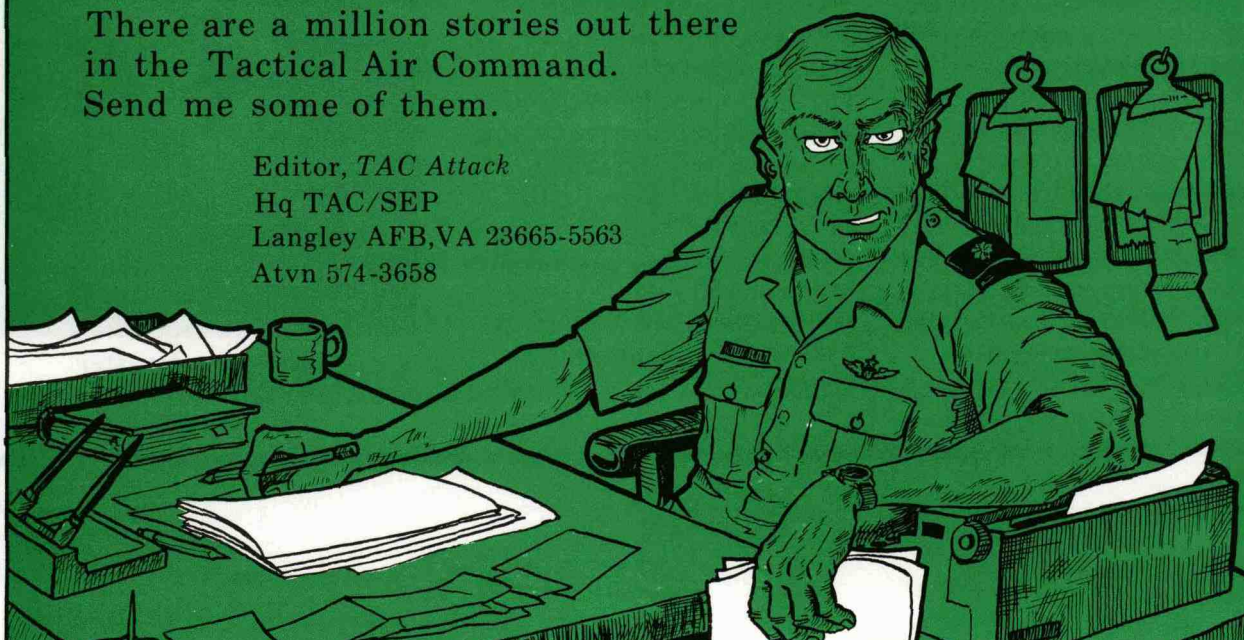
This case, one of the first of its kind, in Idaho, illustrates two related facts: 1) many motorists are slow to change unsafe driving habits, and (2) enforcement of buckle-up laws is getting tougher.

In Idaho, a record of 276 adults were cited during 1989 for breaking a three-year-old law requiring children under four years old or 40 pounds to be buckled into child safety seats. This compares with 132 citations during 1988.

The threat of a citation should not be the primary factor that causes us to comply with a law. As with many laws, this one was passed for someone's protection — the children. The rewards for compliance far outweigh the agony and possible pain from noncompliance. Idaho is serious about protecting children — what about you? Do you know what the requirements are in your state? Are you making it click?

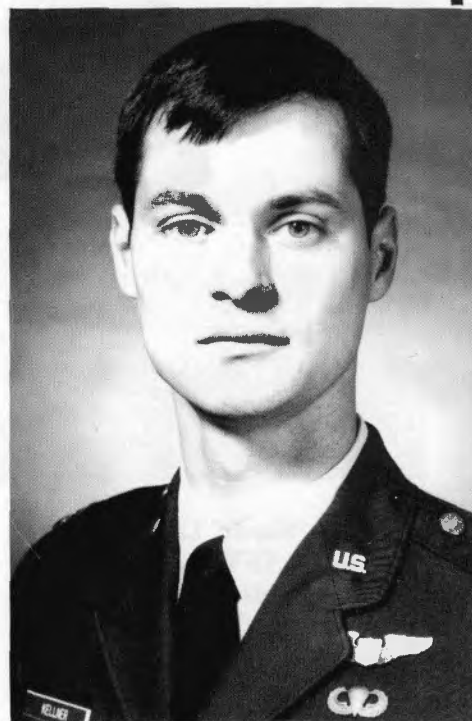
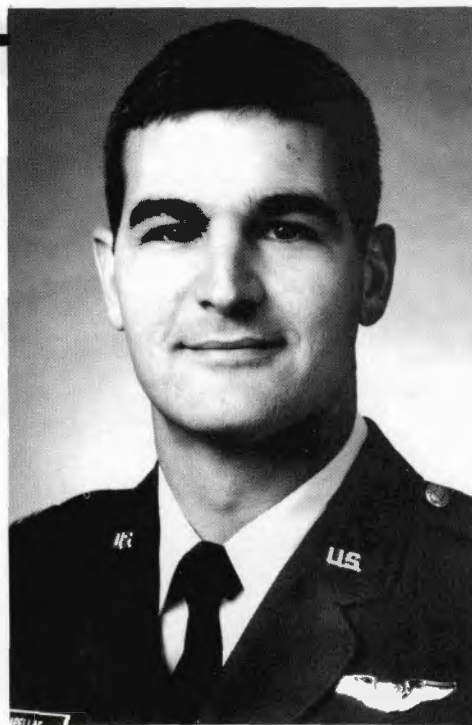
There are a million stories out there
in the Tactical Air Command.
Send me some of them.

Editor, *TAC Attack*
Hq TAC/SEP
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TAC AIRCREW OF DISTINCTION



Capt Christopher A. Kapellas
Capt Paul F. Kellner
522 TFS, 27 TFW
Cannon AFB, NM

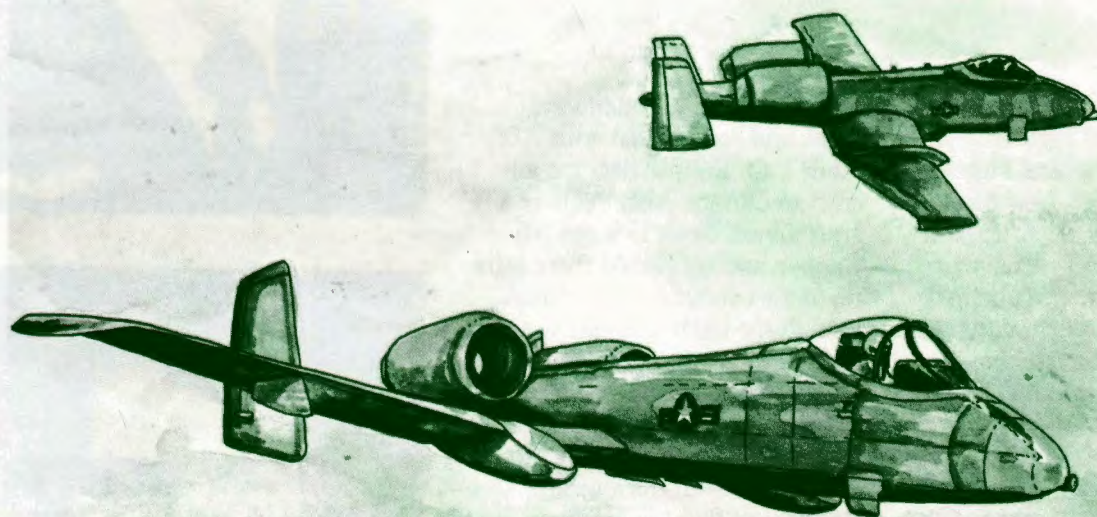
Capt Christopher A. Kapellas, 522d Tactical Fighter Squadron, 27th Tactical Fighter Wing, Cannon AFB, New Mexico, was the instructor pilot (IP) on a single-ship low level step-down training mission with Captain Paul F. Kellner, an upgrading pilot on his first mission qualification sortie. While flying at 300 feet and 480 knots, the crew heard a loud bang and the F-111D's right engine bleed air duct failure light came on accompanied by smoke in the cockpit. Capt Kellner initiated a climb out of the low level turning east towards Cannon AFB and performed the bold face for bleed air duct failure. While retarding the right throttle to idle, the right engine fire light illuminated. The right engine was shut down, and the fire extinguishing agent was discharged into the engine. The fire light remained illuminated for approximately two minutes after the engine was shut down. After the engine fire light went out, Capt Kellner initiated a test of the circuit. The fire lights failed the circuit test, so the crew continued to check for fire indications using all means available. Capt Kapellas referenced the emergency proce-

dures checklist for additional items and coordinated with ATC while Capt Kellner flew the aircraft to Cannon AFB. A chase aircraft joined about 15 miles NE of Cannon and confirmed there were no further indications of fire. Although the landing winds were 60 degrees off the runway centerline and gusting to 35 knots, the crew performed an uneventful single engine landing and emergency ground egressed the aircraft.

The post-flight inspection revealed the right engine was extensively damaged along with heat damage to the engine fire shields, sheet metal surrounding the aft fuel tank and aft airframe. The fire was of such intensity that any delay in execution of the emergency procedures could have resulted in the fire spreading into the aircraft's aft fuel tanks and subsequent loss of the aircraft.

Capt Kapellas and Capt Kellner's knowledge of aircraft systems and prompt execution of emergency procedures minimized the damage and allowed the recovery of a valuable aircraft and earned them the TAC Aircrew of Distinction Award.

THERE I WAS. . . left high and dry



Maj D.E. "Slash" Lajoie
91 TFS, 81 TFW
RAF Bentwaters/
Woodbridge UK

There I was — fat, dumb, and happy — flying route position off lead as we headed for home. Our Red Flag deployment had gone well, and we were on the first of two legs back to England AFB with a two-ship of A-10s at 25,000 feet in the weather. The

Our Red Flag deployment had gone well, and we were on the first of two legs back to England AFB with a two-ship of A-10s at 25,000 feet in weather.

The cloud patterns were smooth, unbroken, and gray.

cloud patterns were smooth, unbroken, and gray. There was enough light, but that was it, no features, no horizon — a classic “Milk Bowl.” I felt confident that we would come through without incident. I had been taught how to be a good wingman, and I was doing my best at flying good route formation, listening to the radios, and keeping up.

Center then gave us a 60-degree heading change and my mind heard it. As lead went into a **very smooth** 30-degree turn (good weather technique) to get to the heading, he had me on the inside of the turn. No problem, I thought. I’ve got a good position, so I maintained the route position and put lead just above the canopy bow and maintained the route spot. All done very smoothly. After what seemed to be two circuits around the circle, I started to get suspicious. Were we still in the turn, and when were we going to roll out? My position still felt correct — 500 feet out, level with lead and

Standby ADI, main ADI, VVI, and altimeter all indicated I was straight and level.

But my M-1 eyeball indicated a 30 degrees of bank in route position.

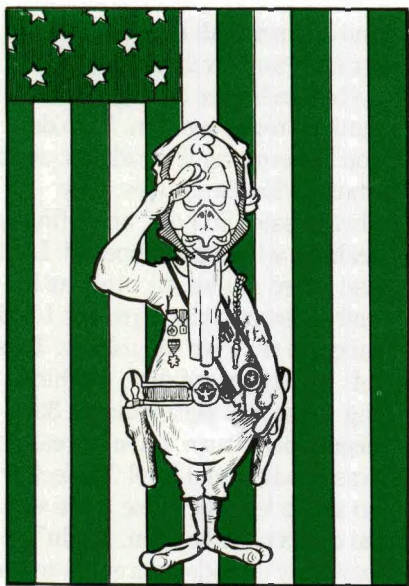
still turning with 30 degrees of bank. Or was I? I glanced down for the first time, since we started the turn, at my trusty ADI and I knew it was lying. **It indicated straight and level!** But I was still in the turn, wasn’t I? Before I let my gyros wobble too much, I held my position and went through it logically (something my wife would never believe). Standby ADI, main ADI, VVI,

and altimeter all indicated I was straight and level. But my M-1 eyeball indicated 30 degrees of bank in route position. Who do you believe, right? Academic situation. Go for the gauges, they always said. So I did, and I finally realized what had happened. Lead had rolled out as smoothly as he had rolled into the turn, but I had failed to perceive the rollout. This left me “high and dry” — thinking I was still performing a 30-degree bank turn while in reality I was straight and level 500 feet or so above lead. Because there was no discernible horizon, I didn’t have any outside references to see our turn or the rollout.

Lessons learned include the standard, but very pertinent, “crosscheck your turns with inside and outside references.”



This would have been just another airborne “faux pas” that I could have logged away as one of my own, except that six years later, as a flight lead in a different squadron, I heard of two similar incidents where the wingman was left “high and dry” by the same set of circumstances. Lessons learned include the standard, but very pertinent, “crosscheck your turns with inside and outside references.” And for all us leads, smoothness is very helpful in the clouds, but take a glance at your wingie to ensure he is still with you and not trying to redefine a new route position when you are flying in a “milk bowl!”



FLEAGLE SALUTES

TAC'S OUTSTANDING AIRMEN

On August 26, 1989, **Captain Ben Schladenhauffen**, 58 TFS, 33 TFW, Eglin AFB, Florida, was on a deployment of F-15's from Eglin AFB to Nellis AFB, Nevada. After an uneventful second and final air refueling, the pilot extended the speed brake to arrive in position on his flight lead. During the extension, Capt Schladenhauffen noticed the master caution light illuminate along with the hydraulic light and utility A circuit light. He confirmed loss of utility A pressure (no radar sweep and no speed brake) and informed his flight lead. In the F-15, loss of the utility A hydraulic circuit prevents normal gear extension, braking, and requires an approach-end barrier engagement. Although there were several divert bases available, Capt Schladenhauffen notified the mission commander that Holloman was most suitable due to compatible barriers and better forecast arrival weather.


During cruise flight in IMC to Holloman AFB, Capt Schladenhauffen familiarized himself with the approaches to Holloman, the field diagram, and location of the

approach and departure end barriers that were available. With the situation apparently under control, Capt Schladenhauffen's aircraft then experienced Air Data Computer failure resulting in the loss of airspeed, altitude, and vertical velocity information. With the emergency now compounded, Capt Schladenhauffen elected to fly the wing position due to errors associated with the standby instruments.


With weather conditions rapidly deteriorating at Holloman, Capt Schladenhauffen was determined to make his first approach count and discussed his game plan with the flight lead. Because of low ceilings and poor visibility due to rain showers at Holloman, the flight had to configure in the weather. Turbulence and poor visibility due to rain made flying the wing position difficult, but Capt Schladenhauffen was able to configure the aircraft for an approach-end arrestment using the emergency gear extension checklist.

Capt Schladenhauffen's flight lead executed a flawless ILS to runway 22, and the flight exchanged the lead with the runway finally in sight at approximately 500 feet and one mile from touchdown. Capt Schladenhauffen continued the approach while his flight lead called out airspeeds

and altitudes for him. Capt Schladenhauffen landed his F-15 on the wet runway 200 feet past the approach end and made a textbook approach-end barrier arrestment.

Capt Schladenhauffen's outstanding knowledge of aircraft systems and superb flying skills resulted in the recovery of a valuable combat resource and have earned him a **Fleagle Salute**. 

While deployed to Ramstein AB, Germany, for an exercise, **Senior Airman James Hager**, **Airman First Class William Metera**, and **Airman First Class Lisa Beck** were performing a defuel operation with power on inside a hardened aircraft shelter in the 86 TFW southeast area. At the completion of the defuel operation, Amn Hager disconnected the defuel receptacle from the F-16. The aircraft's single point refueling valve broke and began pouring fuel on Amn Hager and the floor of the shelter. Airmen Hager, Metera, and Beck immediately shut down all power to avert potential fire. Airmen Hager and Metera began the first of several attempts to reconnect the receptacle to stop the flow of fuel from

the aircraft. Airman Beck assisted them by giving directions to line up the receptacle since both men had their eyes closed to keep the fuel from further irritating them. Finally, the trio was able to reconnect the receptacle. Airman Beck immediately rendered first aid, led the two crew chiefs from the shelter and, subsequently, flushed their eyes with water while they awaited transportation to the hospital. The quick thinking and actions of all three individuals evaded what could have been catastrophic loss of life and equipment. Airmen Hager, Metera, and Beck have earned a **Fleagle Salute** for a job well done. 

On 11 August 1989, **First Lieutenant Karen L. Groth**, 522d Tactical Fighter Squadron, 27th Tactical Fighter Wing, Cannon AFB, NM, was driving back to Clovis from El Paso. She was approximately 30 miles south of Clovis when a second vehicle passed her, traveling at a high rate of speed, with several people in the car. Soon after the car passed her, it dropped a wheel off the right side of the shoulder, then abruptly veered across the road and impacted the guardrail head on, coming to rest on the right side of the road. Lt Groth noticed the engine smoking, so she began pulling people out onto the shoulder of the road away from the car.

There were six people inside the car, all of them were injured, and she noticed that only the driver was wearing a seatbelt. After all passengers were out, she saw another car approaching. She hailed the car, told them what had happened and asked them to call the police and an ambulance. While waiting for help to arrive, she initiated first aid. When others arrived she explained to them what to do to avoid further injury to the victims. Lt Groth's quick action and use of buddy care helped to prevent a minor mishap from turning into a more serious one and have earned her a **Fleagle Salute**. 



TAC DISTINGUISHED FLIGHT SAFETY AWARD

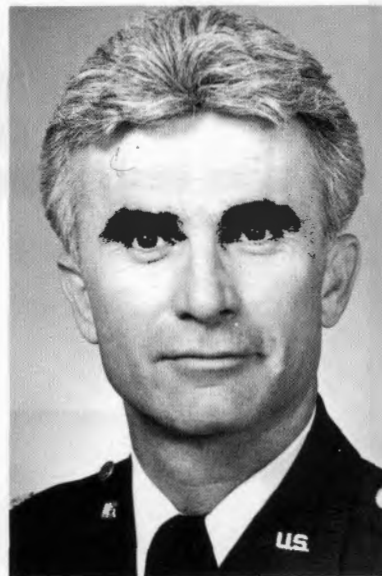
This award honors a person who has made significant contributions to an established unit, intermediate headquarters, TAC or USAF Flight Safety Program.



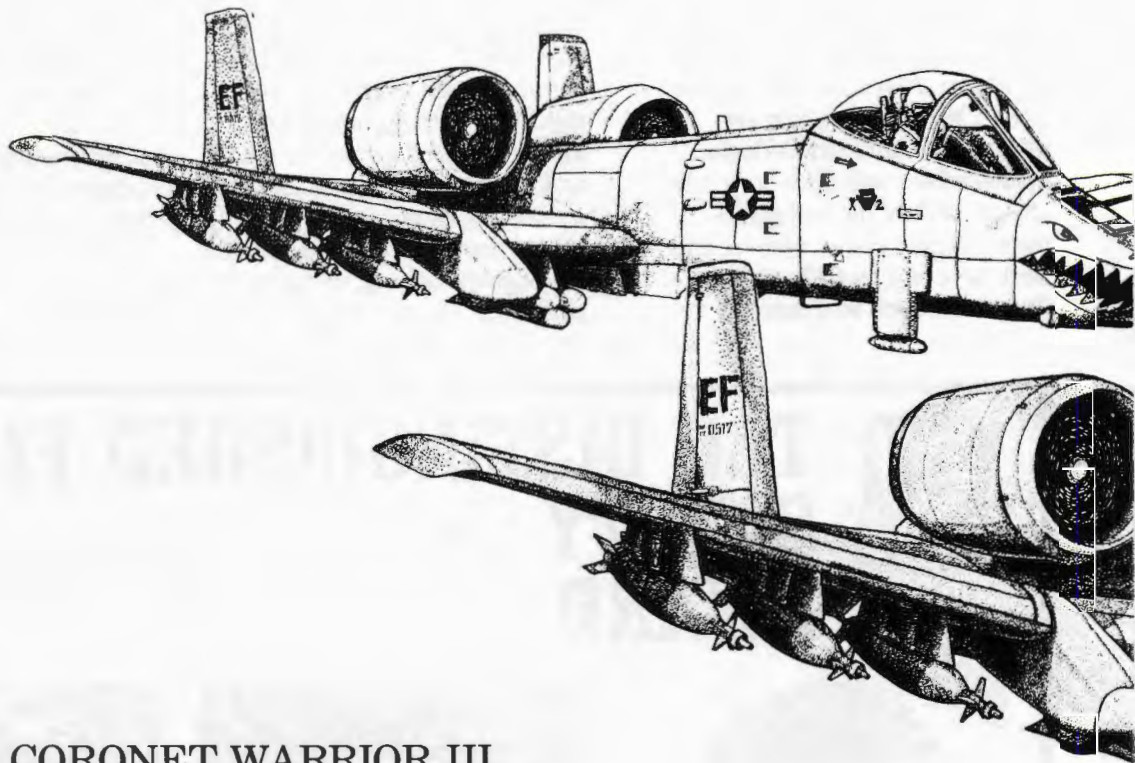
TSgt Dave S. Sturkie
507 TAIRCW/SEF
Shaw AFB, South Carolina



MSgt Michael E. Hall
4 TFW/SEF
Seymour Johnson AFB,
North Carolina



Major Stephen Vandergrift
12 AF/SEF
Bergstrom AFB, Texas



CORONET WARRIOR III

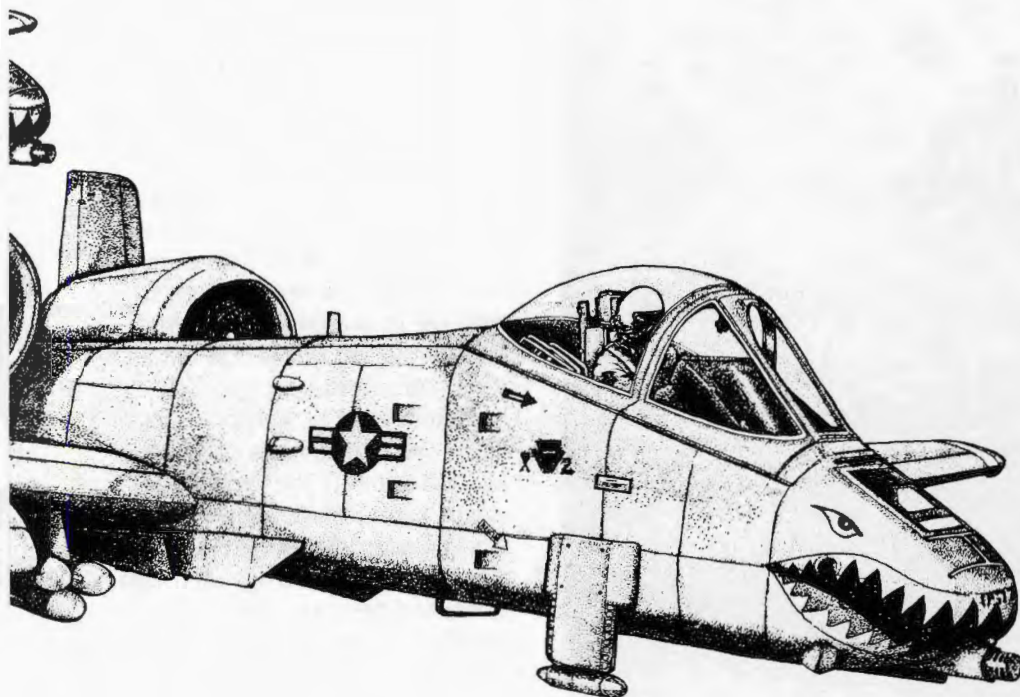
MAR - APR 1989

The most extensive munitions exercise conducted in TAC since Vietnam.



A-10A THUNDERBOLT II

23rd Tactical Fighter Wing,
England AFB, La.



know Your limits

MSgt Peter M. Stover
113 RMS/LGSF
Andrews AFB MD

With one month of winter remaining, I would like to take a moment to reflect on a bad mistake I made last winter. I decided to swallow my pride and share my experience with you and **TAC ATTACK** on the hope that it will save someone else from a potential catastrophe.

The flu bug was attacking everyone. As I moved from plane to plane, I could hear the crew chiefs coughing and sniffing in two-part harmony while they were servicing their jets. The temperature was in the teens and combined with the wind-chill factor made it near zero. The operational tempo had not let up even with the increased absenteeism. Those of us left on the line felt as if we had to tough it out, even though most of us were also sick. There were those of us still working that felt only the wimps stayed home in bed and ate their chicken soup. Better to take a couple of aspirins and a dose of cough syrup and press on. Still this cough was shaking me right down to my bones, and I could tell that I was developing a fever.

I made it through the day and headed for home. I noticed I was about out of gas, so I pulled into the gas station. I put the nozzle in the tank and turned on the pump, but nothing happened. I went to the cashier where they informed me they had just run out of gas. Oh boy, what else could go wrong I wondered. As I headed back to my car, an uncontrollable coughing attack struck me and was followed by severe dizziness.

I sat on the gas island for a few minutes, trying to gather myself. I decided that tomorrow I'd call the



As I moved from plane to plane, I could hear the crew chiefs coughing and sniffing in two-part harmony while they were servicing their jets.

The temperature was in the teens and combined with the wind-chill factor made it near zero.



shop and tell them that I was going to see a doctor first. I thought if I feel half this bad tomorrow, I wouldn't be any good to anyone, especially myself. Other cars were pulling up, so I decided it was time to go. I got back into my car, buckled up, and in a still dizzy state, began to drive off. **KAA-CHUNG!** Ooops, one small problem. That's right, I had left the nozzle in the filler pipe to my car's gas tank and had just ripped the hose right off the pump. What a mess. Fortunately, there were no sparks or fire when the gasoline hose and its couplings were forced to go their separate ways and the metal nozzle impacted the concrete. When I think of the potential disaster — the fire or explosion — I consider myself very fortunate. The replacement gas pump cost my insurance company a little over than \$3,000, and ended up costing me higher premiums for the next few years.

I got back into my car, buckled up, and in a still dizzy state, began to drive off.

KAA-CHUNG! Ooops, one small problem.

That's right, I had left the nozzle in the filler pipe to my car's gas tank and had just ripped the hose right off the pump.

What a mess.

But what if the coughing spell had hit me while I was driving a fuel truck or handling LOX (liquid oxygen)? What if there was a mishap, caused by my physical condition at that time, which resulted in possibly a loss of life or damaged equipment. The flight line is not a place for us to show others how macho we are. You should also remember that many over-the-counter medications can have serious side effects to include reduced depth perception, drowsiness, upset stomach, and reduced reaction times or reflexes. There is just too much at stake in the millions of dollars worth of aircraft and equipment, and, most of all, in your life and the lives of those around you. If you are sick, see a doctor; let him determine whether you're fit to work or not. If you are sick, stay home and get the proper rest and medication, and don't put everyone else at risk.



TAC WEAPONS SAFETY AWARD OF THE QUARTER

Staff Sergeant Bruce Lawrence, 426th Combat Armament Support Team (CAST), 405th Equipment Maintenance Squadron, Luke AFB, Arizona, is totally dedicated to the 405 EMS Armament Systems Branch weapons safety program. He thoroughly indoctrinates newly assigned branch personnel to identify and correct weapons system discrepancies on explosive items maintained by the Armament Shop and flight line. Sgt Lawrence's extensive overhaul of the on-the-job training provides comprehensive training throughout the Armament Systems Branch and increases assigned personnel's familiarity with the armament systems of the F-15A/B/C/E aircraft. The program also highlights the differences between these models and eliminates any confusion weapons personnel may have. Sgt Lawrence is an exceptional noncommissioned officer whose managerial talent and technical expertise mold the 426 CAST into the best in the 832d Air Division. By using keen and aggressive leadership techniques, he ensures that each task is accomplished accurately and safely. Among his initiatives is a weekly safety meeting with his coworkers for brainstorming and identifying safety hazards in the work area. Two outcomes of these meetings are a new composite tool

kit (CTK) shadow layout and the rearrangement of the CAST work area. Although CTK's in the maintenance area were standardized, they were not arranged in any kind of logical sequence, creating the potential hazard of overlooking a lost tool during inventory of the CTKs. He corrected this problem by arranging all tools of similar use in each drawer and redoing all of the CTK's with new shadow foam. This seemingly simple act improves maintenance turnaround time substantially and virtually eliminates the possibility of shop tools causing foreign object damage (FOD) either in the shop or on the flight line. After identifying a safety hazard concerning an excessive use of electrical drop cords, he redesigned the CAST area which increased work space for his personnel and eliminated the need for drop cords. He also achieved a 100 percent pass rate on all of his quality assurance inspections this quarter. Four of the seven were error free. He safely and successfully cleared an aircraft gun system of a live 20mm round which was still chambered in the firing position after it jammed during a gunnery mission. He directed the maintenance of over 500 explosive equipment items and achieved a 99.7 percent equipment in-



SSgt Bruce Lawrence
405 EMS, 405 TTW
Luke AFB AZ

commission rate exceeding the TAC standard of 95 percent. Based on his knowledge and initiative, Sgt Lawrence was selected to indoctrinate the BRU 46/47 bomb rack contractor retrofit team upon their arrival in the Armament Systems Branch. He oriented all contractor personnel on potential safety hazards as well as the safety precautions necessary while in the branch and on the F-15 ramp. Sgt Lawrence's outstanding performance has earned him the TAC Weapons Safety Award of the Quarter.

TAC TRAFFIC SAFETY AWARD, CAT I

This award honors units with effective traffic safety programs for operators of privately owned vehicles, Air Force motor vehicles and special purpose vehicles.

1 TFW
Langley AFB, Virginia



TAC DISTINGUISHED WEAPONS SAFETY ACHIEVEMENT AWARD

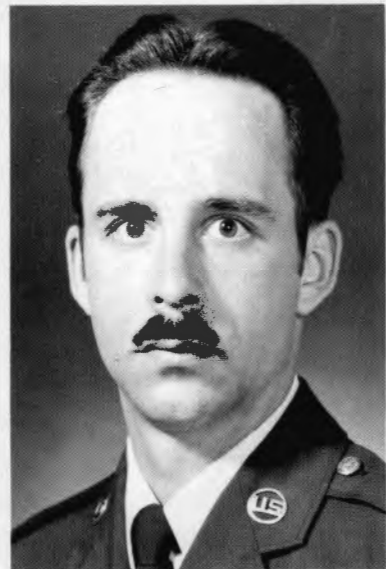
This award honors a ground safety member who has made a significant contribution to an established unit, intermediate headquarters, TAC or USAF Ground Safety Program.



MSgt Daniel R. McCormick
33 TFW/SEG
Eglin AFB, Florida

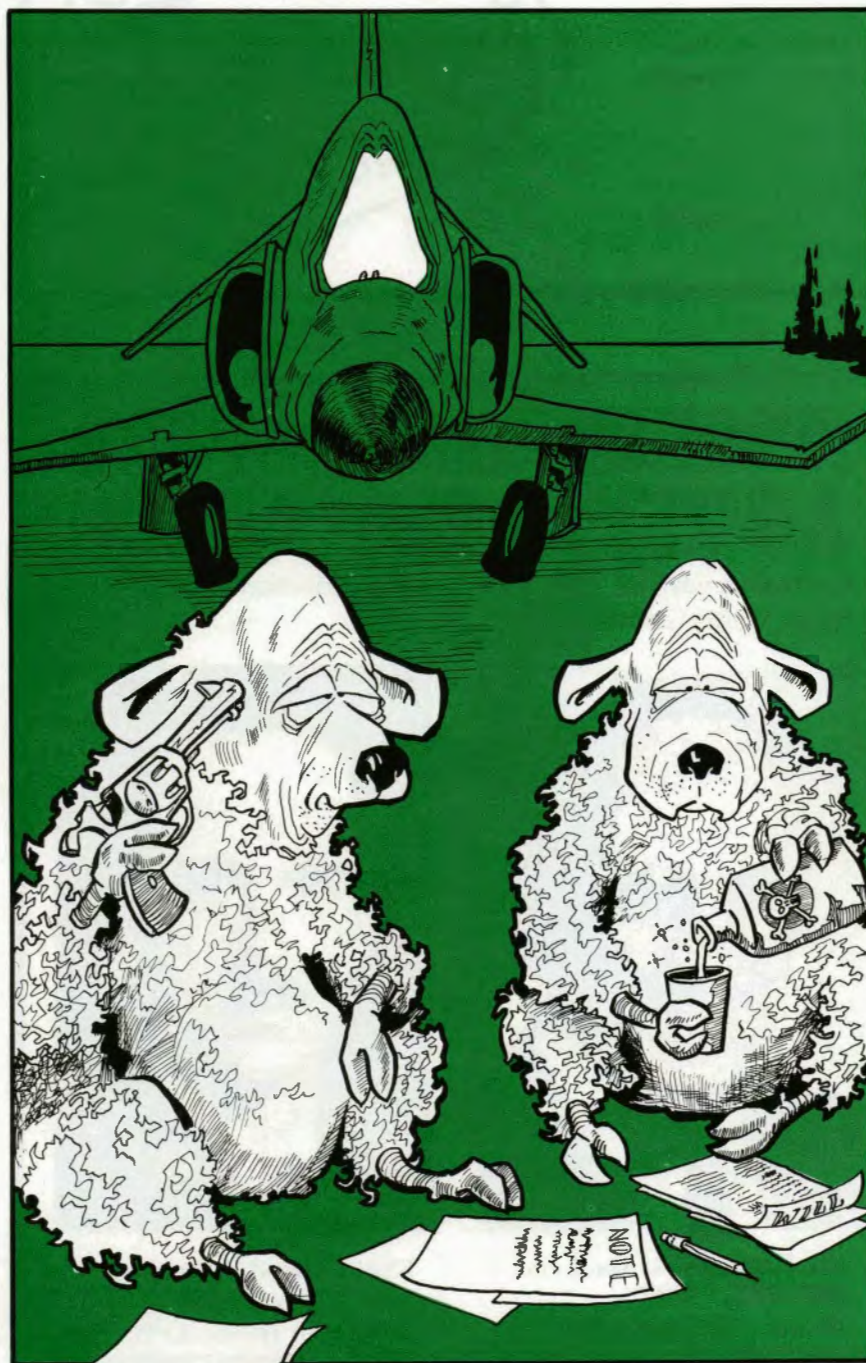


Mr. Kenneth G. MacLeod
347 TFW/SEG
Moody AFB, Georgia



SSgt Clifford D. Tebbe
366 TFW/SE
Mountain Home AFB, Idaho

ON AIRPLANES-AND SHEEP AND THE DECISION TO EJECT



Lt Col James O. Rayner
116 TASG/SE (ANG)
Battle Creek MI

Many years ago, a veteran sheep farmer lamented to me that "The problem with sheep is that they have this bad trait of deciding that they want to die. And once a sheep decides to die, there is just not much you can do about it." It occurred to me recently that perhaps our TAC fighter aircraft share this same trait. Frequently, this death wish manifests itself in a departure from controlled flight. Other recent symptoms include low altitude loss of thrust and structural failure. In so many of these situations, the aircraft, like that sheep, has decided to die; and there is not much anyone can do about it.

There are, however, two major differences between aircraft and sheep in the way death comes about. The first is the time involved. The sheep is in no hurry. It may take hours or even days to die. But the aircraft is much fast-

er. Once it has decided, it usually dies very quickly — mostly in a matter of seconds — and often not very many of them. The other big difference is owner participation. Rarely does the farmer die with the sheep! Unfortunately, the aircrew community cannot make that same claim.

Just as the shepherd knows and cares for his sheep, we aircrew love our airplanes and really hate to “let one go.” We work hard at learning all there is to know about these magnificent machines and mastering all their tremendous capabilities. We just refuse to believe that they could let us down at a time like this — How dare they! The old sages of the flying business have known this for a long time. The rule about “immediate bailout if out of control below 10,000 feet” has been around for a long time. It has been proven and reproved, yet we still seem compelled to challenge it. The aircraft, like the sheep, does not just come out and loudly proclaim “It’s time to die.” But rather, like the sheep, it gives out

Just as the shepherd knows and cares for his sheep, we aircrew love our airplanes and really hate to “let one go.”

hints. These hints are usually well described in our Dash-1. We generally know them well, but like the farmer with his prize sheep, we don’t want to admit that the time is up. The farmer has time to try one more cure or just wait and see. But to us, time is so extremely limited. Sometimes there are only a few seconds to say “Oh,” raise the handles and go! Another circumstance may offer the pilot 30 seconds, but if he uses 31 seconds, he dies.

In my brief two years in the safety business, I have read final mishap reports where the aircrew waited longer than they should have before ejecting, but yet still survived. Some others delayed their decision and did not survive. Many of these delayed ejections involved out-of-control aircraft and futile attempts to regain control. Perhaps there is something in our aircrew psyche which compels us to try everything before giving up. This trait serves us well in many situations, but can be fatal in the ejection decision process.

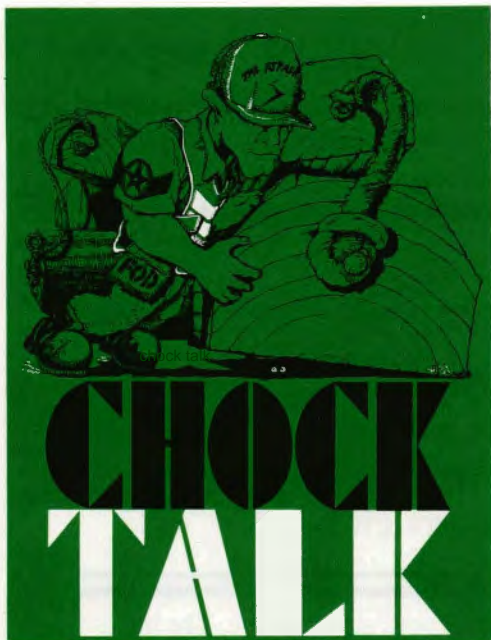
Like the last breath of the sheep, the fireball of an aircraft is anticlimactic. An A-37 with no thrust is dead below 2,000 feet AGL. The out-of-control aircraft is really dead when it falls through 10,000 feet AGL. They have only to await the inevitable fireball. Likewise, the aircrew is really dead when the capabilities of the ejection system are no longer adequate to save them. The altitude, of course, varies with type of ejection

Perhaps there is something in our aircrew psyche which compels us to try everything before giving up.

tion seat, sink rate, etc. The big point I’m leading up to is that the aircraft is nearly always “dead” well before the aircrew is, even if they both end up in the same smoking hole. This precious time between the two is when we can save our hides. But, we often waste some or all of it. There can be no reasonable use of this time other than to eject. So give some serious thought to how your aircraft will tell you “It’s time for me to die” and what you will do if it does.

I have been a member of one Safety Investigation Board (SIB) and hope to never be needed for another. That investigation was both more difficult and more depressing because the pilot was not there to testify. He was about two seconds late in initiating ejection. When the sheep dies, it’s over. When an aircraft dies, there is an investigation. My fondest hope is that I will quickly recognize the hints if my aircraft starts saying “Ba, Ba, Ba,” and I will take the appropriate action. The SIB will meet and do their job with or without me. The least I can do is be there to tell my side of the story!

➤



Switches: In Position or Out?

While rearranging the office, the following story was found behind a file cabinet. It has some valuable lessons for all of us.

When an F-14 Tomcat went into a Navy A-7 base for a stopover, the crew could not get the canopy to lower after they had parked the jet. A plane captain (read **crew chief**) was leaning over the can-

opy rail to see if the seat was pinned while two other maintenance folks down in the nose wheel well serviced the open canopy with nitrogen. As a result, the canopy closed on the plane captain's back, pinning him to the canopy rail. The specialist in the wheel well heard him yell and started to dump the charge while the other specialist attempted to push the canopy up from the trapped plane captain's back. The plane captain finally pulled himself free, but fell to the ramp, suffering a sprained ankle, bruised knee and strained back. Meanwhile, the canopy continued to close and trapped the rescuing specialist's right hand and arm. He was finally able to free his arm, suffering only minor bruises, as the canopy charge bled down.

Could a similar incident happen to us in the Air Force? You bet, and it has. Failure to ensure that cockpit switches are properly positioned during servicing may well result in the unexpected movement of aircraft parts. The failure to keep the canopy area clear of personnel during this incident could have resulted in death or serious injury due to inadvertent closure. These cautions are worth practicing at any time, but they are particularly significant when you're working on unfamiliar aircraft.

F-16 vs Crew Bus

In another command, an F-16 pilot stepped for a routine night flight. In this particular case, he drove himself out to the hardened aircraft shelter (HAS) where his jet was located. He had a flight line driver's license and parked the flight line authorized crew bus on the edge of the apron near the HAS. The preflight, taxi out, and mission were uneventful.

When taxiing back, the pilot followed the appropriate taxi markings back to his assigned parking space in front of the HAS. As he approached the HAS, he switched off the taxi light in order not to blind the crew chief. As he continued forward with the nose wheel on the taxi line, the aircraft's right wing pulled the aircraft to the right as it reshaped the side of the crew van. The missile launcher, leading edge flap, pilot's reputation, and crew chief's reputation all "took a hit."

Morale: Never assume there is wingtip clearance — rather, always verify that there is adequate clearance. Never assume the driver parked the appropriate distance from the taxi line; he may not have read this article yet!

PASS IT ALONG...



TAC ANNUAL UNIT GROUND SAFETY AWARD, CAT I

This award honors units with an effective mishap prevention program.

67 TRW
Bergstrom AFB, Texas



TAC EXCEPTIONAL PERFORMANCE IN GROUND SAFETY AWARD

This award honors ground safety members who have made meaningful contributions to their unit's mishap prevention program.



MSgt Billy D. Mueller
388 TFW/SEG
Hill AFB, Utah



TSgt Lois H. McAdams
366 TFW/SEG
Mountain Home AFB, Idaho



TSgt Roger D. Wiseman
347 TFW/SEG
Moody AFB, Georgia



SSgt Terry L. Johnson
1 TFW/SEG
Langley AFB, Virginia

Fleagle



I THOUGHT IT WUZ
TH' MIGRATORY
SEASON.



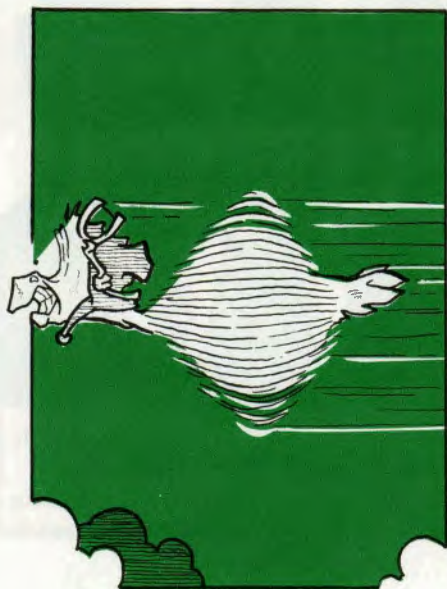
SHOOT, IF THAT'S ALL TH'
TRAFFIC WE GONNA GET
WE AIN'T GOT A BLAME THING
TO WORRY 'BOUT THIS
SEASON.



WHAT TH' HECK
IS THAT?

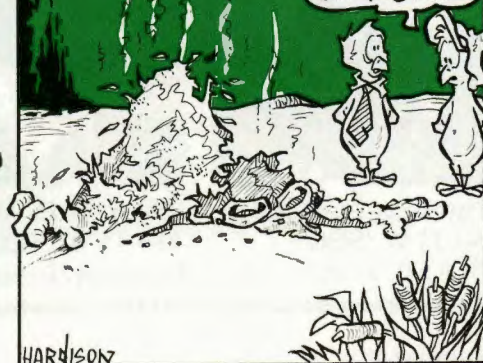


OH NO!



YOU WOULD THINK THAT
AFTER ALL THESE YEARS OF
FLYING HE WOULD KNOW TH'
TERM, PATHFINDER.

GO FIGURE.



HARDISON



TAC FLIGHT SAFETY AWARD OF THE QUARTER

Maj James E. McClain's outstanding contributions to the 388 TFW Flight Safety Program have produced an effective mishap prevention program. He has been the 388 TFW Chief of Flight Safety since Oct 1988. During the past year, he has revamped and streamlined the safety program for results. The new program puts the safety emphasis back in the field where it should be. The flight safety spot-inspection program is continually reevaluated to orient attention toward potential problem areas. Overall result was a significantly reduced reportable mishap rate in each of the last four quarters. Maj McClain also served as an investigating officer on a Class

A mishap. The board president praised his knowledge of the mishap investigation system and his thorough investigation of the Class A mishap. A 12 AF Staff Assistance Visit found several of his programs superior enough to copy and distribute to other wings and awarded an overall rating of excellent. The team indicated the 388 TFW program to protect privileged information was the best they had seen. Maj McClain's dedication, knowledge, and experience in the flight safety arena directly contributed to the successful accomplishment of the 388 TFW's mission and earned him the TAC Flight Safety Award of the Quarter.



Major James E. McClain
388 TFW/SEF
Hill AFB UT

TAC OUTSTANDING ACHIEVEMENT IN SAFETY AWARD

Staff Sergeant Donald S. Mack, 33d Consolidated Repair Shop, 33d Tactical Fighter Wing, Eglin AFB, Florida, is a highly competent, knowledgeable, and dedicated supervisor. This was most evident during the performance of a completed maintenance inspection on an F-100-PW-220 jet engine. Sgt Mack's thoroughness resulted in the detection of a severe chafing problem. He discovered the oil tank scavenge tube was chafing through the engine oil tank. At the time of discovery, the engine oil tank was worn to the point of failure. Sgt Mack realized the implications of such a failure and took immediate measures to correct the problem.

He inspected the remaining spare assets and discovered seven more engines with the same problem. He immediately notified the appropriate authorities and began his own investigation. He isolated the cause of the chafing problem and discovered deficiencies in the technical order (T.O.). Sgt Mack has taken the necessary measures to eliminate the chafing and submitted an AFTO Form 22 for the T.O. His dedication to duty was directly responsible for eliminating a potential fire hazard and loss of an aircraft. Sgt Mack is an NCO of the highest caliber. His leadership and attention to detail are reflected in his outstanding performance as a "maintainer."



SSgt Donald S. Mack
33 CRS, 33 TFW
Eglin AFB FL

His diligence and professionalism have earned him the TAC Outstanding Achievement in Safety Award.

TAC AIRCREW OF DISTINCTION AWARD



On 27 Nov 89, Captain Norman W. Reece, Aircraft Commander, and Captain Carl M. Harrison, Weapons System Officer, 334th Tactical Fighter Squadron, 4th Tactical Fighter Wing, Seymour Johnson AFB, North Carolina, were flying their F-4E as lead in a two-ship surface attack mission on Air Force Dare County Range, North Carolina. While performing a maximum range loft weapons delivery maneuver at 1,000 feet AGL and 540 knots, the aircraft pitched down violently, transitioning from a 25-degree climbing attitude to a 10-degree diving attitude. The uncommanded pushover placed the aircraft in a negative two "g" condition, pushing both crew members against the top of the canopy as altitude rapidly decreased. Capt. Reece immediately countered the uncommanded flight control input with aft stick pressure, brought both throttles to idle, and deployed the speedbrakes. Capt. Harrison, realizing that the pilot could not overcome the pitch down force, also applied back stick pressure to help overcome the malfunction. Capt. Reece depressed the emergency quick release lever, but this did not solve the problem. Both crew members continued to apply full aft stick

pressure and recovered to level flight by 300 feet AGL. After climbing to a safe altitude, Capt. Reece declared an emergency and directed his wingman to visually confirm a safe aircraft configuration, then started a recovery to Seymour Johnson AFB. Capt. Reece performed a controllability

check, informed the Supervisor of Flying of the problem, and flew a flawless straight-in approach and landing. The quick actions of Capt. Reece and Capt. Harrison saved a valuable combat aircraft as well as their own lives and earned them the TAC Aircrew of Distinction Award.



Capt Norman W. Reece



Capt Carl M. Harrison

**334 TFS, 4 TFW
Seymour Johnson AFB, NC**



TAC ANNUAL UNIT GROUND SAFETY AWARD CAT II

This award honors units with an effective mishap prevention program.

388 TFW
Hill AFB, Utah



TAC DISTINGUISHED WEAPONS SAFETY ACHIEVEMENT AWARD



This award honors a weapons safety member who has made a significant contribution to

an established unit intermediate headquarters, TAC or USAF weapons Safety program.



Capt David L. Benson
4 TFW/SEW
Seymour Johnson AFB, North Carolina



TSgt Mark A. Latham
27 TFW/SEW
Cannon AFB, New Mexico



TAC TRAFFIC SAFETY AWARD CAT II

This award honors units with effective traffic safety programs for operators of privately owned vehicles, Air Force motor vehicles and special purpose vehicles.

823 CERHS
Hurlburt Field, Florida

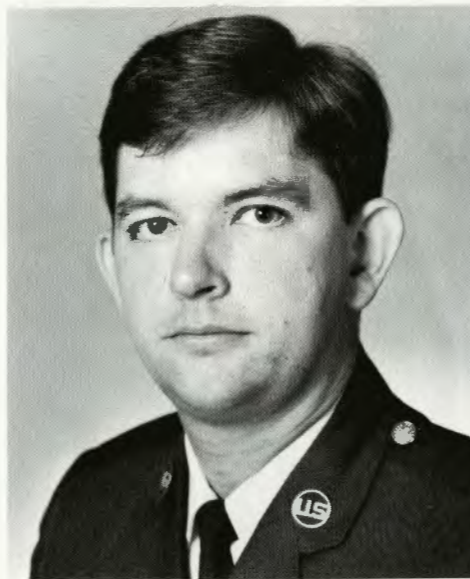


CHIEF MASTER SERGEANT PAUL A. PALOMBO AWARD FOR DISTINGUISHED GROUND SAFETY NEWCOMER

This award honors a ground safety member who is new to the ground safety career field and has demonstrated exceptional performance.



SSgt Judy M. Madison
831 AD/SEG
George AFB, California



SSgt James C. Mullis
347 TFW/SEG
Moody AFB, Georgia



TAC TALLY

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

* (SUCCESSFUL/UNSUCCESSFUL)

Total		
JAN	THRU JAN	
	FY 90	FY 89
2	8	9
0	6	2
2/0	4/0	5/1
0/0	1/1	0/0

TAC		
JAN	THRU JAN	
	FY 90	FY 89
2	6	7
0	2	1
2/0	4/0	3/0
0/0	1/1	0/0

ANG		
JAN	THRU JAN	
	FY 90	FY 89
0	1	2
0	2	1
0/0	0/0	2/1
0/0	0/0	0/0

AFR		
JAN	THRU JAN	
	FY 90	FY 89
0	1	0
0	2	0
0/0	0/0	0/0
0/0	0/0	0/0

TAC'S TOP 5 thru JAN 1990

1st AF	
CLASS A MISHAP-FREE MONTHS	
48	57 FIS
27	48 FIS
8	325 TTW

9th AF	
CLASS A MISHAP-FREE MONTHS	
56	507 TAIRCW
27	4 TFW
23	347 TFW
14	354 TFW
13	23 TFW

12th AF	
CLASS A MISHAP-FREE MONTHS	
28	24 COMPW
25	355 TTW
24	366 TFW
22	405 TTW
16	388 TFW

ANG	
CLASS A MISHAP-FREE MONTHS	
2 30	110 TASG
2 05	138 TFG
1 87	177 FIG
1 82	114 TFG
1 46	155 TRG

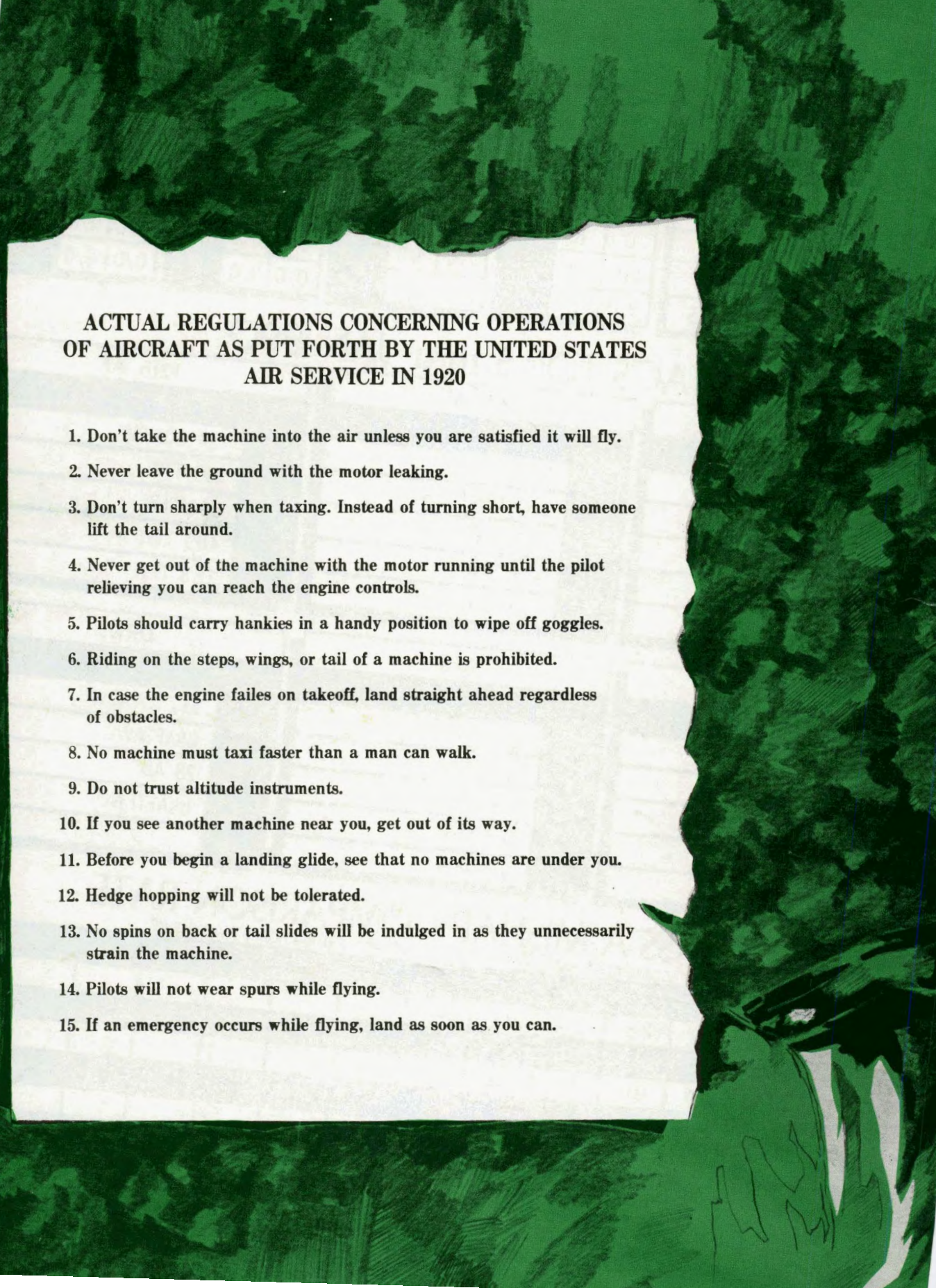
AFR	
CLASS A MISHAP-FREE MONTHS	
113	482 TFW
103	924 TFG
91	906 TFG
65	507 TFG
52	917 TFW

DRUs	
CLASS A MISHAP-FREE MONTHS	
160	552 AWACW
30	USAFTAWC
16	28 AD
2	USAFTFWC

CLASS A MISHAP COMPARISON RATE

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

TAC	FY 89	1.7	2.7	3.0	3.2	2.6	2.4	2.3	2.9	2.6	2.5	2.6	2.4
	FY 90	1.8	2.8	2.7	3.1								
ANG	FY 89	0.0	0.0	1.5	2.3	2.8	3.1	3.2	2.8	3.0	3.6	3.2	3.3
	FY 90	0.0	0.0	1.6	1.2								
AFR	FY 89	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	FY 90	20.4	11.2	8.2	6.1								
Total	FY 89	1.2	1.8	2.5	2.8	2.5	2.5	2.4	2.7	2.5	2.6	2.6	2.5
	FY 90	2.4	2.5	2.7	2.7								
MONTH		OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP



ACTUAL REGULATIONS CONCERNING OPERATIONS OF AIRCRAFT AS PUT FORTH BY THE UNITED STATES AIR SERVICE IN 1920

1. Don't take the machine into the air unless you are satisfied it will fly.
2. Never leave the ground with the motor leaking.
3. Don't turn sharply when taxing. Instead of turning short, have someone lift the tail around.
4. Never get out of the machine with the motor running until the pilot relieving you can reach the engine controls.
5. Pilots should carry hankies in a handy position to wipe off goggles.
6. Riding on the steps, wings, or tail of a machine is prohibited.
7. In case the engine failes on takeoff, land straight ahead regardless of obstacles.
8. No machine must taxi faster than a man can walk.
9. Do not trust altitude instruments.
10. If you see another machine near you, get out of its way.
11. Before you begin a landing glide, see that no machines are under you.
12. Hedge hopping will not be tolerated.
13. No spins on back or tail slides will be indulged in as they unnecessarily strain the machine.
14. Pilots will not wear spurs while flying.
15. If an emergency occurs while flying, land as soon as you can.