

TAC Attack

MARCH 1992



ANGLE OF ATTACK



March is here and the first day of spring is just around the corner. We've made it through the two worst months of winter. However, January and February were not without incident.

In the flight arena, through a five-year mishap analysis, January was identified as a high mishap potential month in TAC. In response, TAC conducted a Safety Day with special emphasis on operator factor mishaps. Unfortunately, our analysis may have been too accurate and our prevention efforts less than adequate. TAC and TAC-gained units had five Class A mishaps in January resulting in five destroyed aircraft and one death. From 11-15 January, the Air Force lost five airplanes in Class A mishaps, four of which were TAC/TAC-gained. Four Class A mishaps in five days! Are there any common trends in the mishaps? You bet. Three of the five involved operator factors. As predicted, operator factors continue to be the leading cause of mishaps.

In February we had a private motor vehicle mishap which resulted in the death of one of our TAC people and an injury to another. A young man was operating his car at speeds estimated in excess of 100 MPH when the car departed the road, struck a culvert and went airborne for approximately 200 feet. The passenger was killed when his seat belt broke and he was ejected from the car. Alcohol was a factor in the mishap. Once again, we've proven that alcohol and speed are a deadly combination, even when seat belts are worn properly.

In February, in the weapons area, we had two dropped AIM-7 mishaps. They occurred at two different units, in two days and both caused broken radomes. Each was caused by inattention of

personnel to the operation being performed and could have been avoided -- operator factor!

What is the problem? Have we become complacent or are our priorities misplaced? Could it be a combination of both? We all know that emphasis tends to fade with time while the potential for complacency increases. **Don't let it!** Be aware of what is going on around you and stay in tune with your attitude and in control of your job performance. You've all been well trained and empowered in your areas. Continue to exercise good self-discipline. Awareness is the key to preventing complacency.

Where are **your** priorities? That's an important question you need to keep in focus and think about all the time. It's just like complacency. If you're not consciously aware of what your priorities are, they have probably slipped a bit out of line. Knowing where your priorities are is an important part of being aware.

We'll have some nicer weather now as spring arrives, but don't let the increased sunshine and warmer temperatures lull you into an attitude of complacency or misdirected priorities. Let's work together. There are many challenges and changes on the way for us in the Air Force. These can serve as distractors. Don't let them! Keep a concerned eye on one another and stress teamwork. Despite some setbacks, let's continue to enhance and nurture our culture of safety.

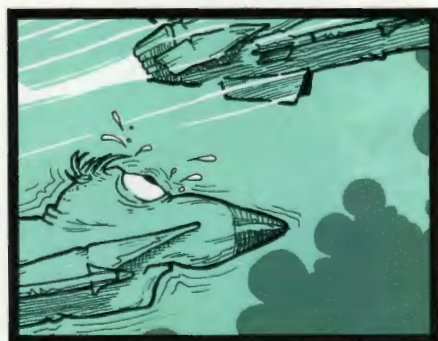
BODIE R. BODENHEIM, Colonel, USAF
Chief of Safety

TAC Attack

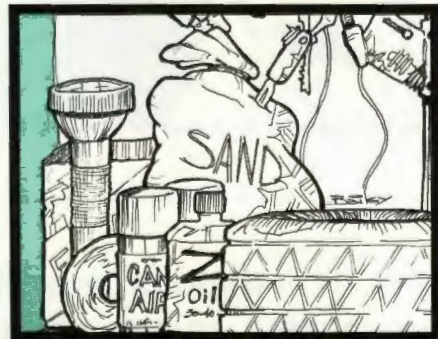
DEPARTMENT OF THE AIR FORCE



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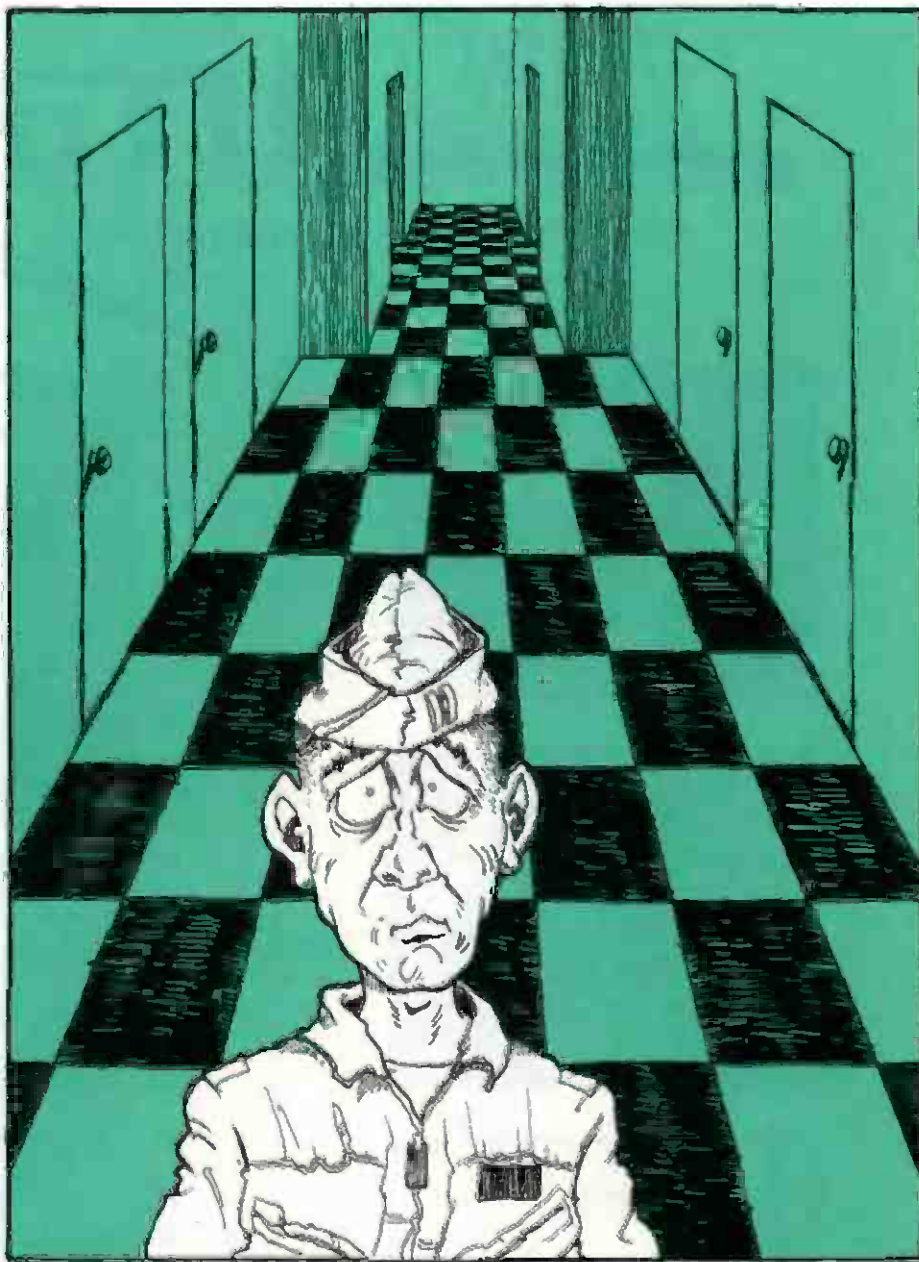
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SA is "a pilot's (or aircrew's) continuous perception of self and aircraft in relation to the dynamic environment of flight, threats, and mission, and the ability to forecast, then execute tasks based on that perception."

DESPERATELY SEEKING SA

Lt Col Lynn A. Carroll
HQ USAF/XOOTW
WASH DC

“NO TALLY! NO VISUAL! NO CLUE!”

doesn't necessarily indicate a total loss of situational awareness (SA). However, it does represent a less than desirable level of SA relative to mission accomplishment and margin of safety. Loss of situational awareness continues to contribute to the spectrum of aviator experience from hair brained war stories to tragic loss of life and aircraft. Whether loss of SA is identified during the post mortem of a mission gone bad or an accident investigation, SA has remained elusive even when it is the focus of scientific studies, safety investigations, or training programs.

Recently, an Air Staff process action team was created to address the questions, “Just what do we mean by situational awareness? Can it be measured objectively? Can SA be learned? Can we select for it? If it can be measured, when in the flying training process should we take measurements?” A cursory

review of studies has shown widespread interest in SA, but provided no conclusive results that might acceptably define SA and answer these and other questions. The Advisory Group for Aerospace Research and Development (AGARD) has sponsored conferences and has published a collection of studies concerning SA. Various MAJCOM training programs contain SA oriented segments, but are not focused on SA. What we do have are various programs such as Cockpit Attention Task Management (CATM), Aircrew Attention Awareness Management Program (AAAMP), Cockpit Resource Management (CRM), Mission Oriented Simulator Training (MOST) and Aircrew Coordination Training (ACT) dealing with specific areas of human factors which impact flying airplanes. However, no one has an “SA Training Program” per se. Emphasis has been placed on spatial orientation task management, “G” induced loss of

consciousness (GLOC) and attention awareness, with SA appearing more as a collateral issue than a goal. But, these factors alone or together are not SA; yet SA cannot exist without them. We are indeed desperately seeking SA.

The search for SA has been approached from many directions resulting in disparate views from operators and technicians alike. The slice and dice method of determining what SA is and does has not enlightened the average aircrew in pursuit of the Holy Grail of perfect SA. One reason is an apparent lack of a consistent operations perspective and direction in addressing SA. Another reason is an inherent tendency to treat SA as a separate entity in the overall cosmic approach to aviation. The search for SA obviously could use an operational focus to provide direction and guidance for research and training alike.

Let me propose that SA should be the umbrella under

DESPERATELY SEEKING SA

which applicable human factors research and training are pursued. SA applies to every individual on every type of mission in a universal sense. Human factors should be ordered into a supporting role under SA to support mission accomplishment. Each of the human factors, coupled with an individual's experience and capabilities, combine to support building and maintaining a given level of SA. The level of SA will be affected by the complexity of the mission, the intensity of the threat and the amount of attendant distractions in and out of the cockpit.

The following is an operationally oriented, composite definition of SA derived by the Air Staff group from numerous independent studies and training programs. SA is "a pilot's (or aircrew's) continuous perception of self and aircraft in relation to the dynamic environment of flight, threats, and mission, and the ability to forecast, then execute tasks based on that perception." It is problem solving in a three-dimensional spatial relationship complicated by the fourth dimension of time compression where there are too few givens and too many variables. It encompasses the individual's experience and capabilities which affect the ability to forecast, decide and then

execute. SA represents the cumulative effects of everything an individual is and does as applied to mission accomplishment. It's what allows you to successfully complete the mission, or to recognize the need to abort. It keeps you out of the dirt and out of someone else's space.

Operator accidents or incidents are due to a critical breakdown in one or more of

the myriad of human factors which results in the loss of SA. However, inadequate SA, in a relative sense, routinely affects successful mission accomplishment and the desired margin of safety. Satisfactory ordering of the involved human factors will not create SA, but is necessary to create the environment in which to achieve some relative level of SA. Thus, SA is the driver in safe and successful mission accomplishment.

Taking the positive approach, it may be to our advantage to consider spatial orientation, task management, GLOC avoidance and attention awareness as building blocks in creating and maintaining a favorable environment that allows pilots and aircrews to successfully complete the mission. What has been lacking is an operationally oriented approach to the study and training of SA. Since the mission of the Air Force is not to "maintain spatial orientation," but "to fly, fight and win," we need to establish an overall direction to that end. Focusing on SA should help accomplish that. Using SA as the framework and goal for research and training, it will be up to the human factors scientists, training specialists and the operators on how best to define, measure, select for and train human factors and SA. ➤

Operator accidents or incidents are due to a critical breakdown in one or more of the myriad of human factors which results in the loss of SA. However, inadequate SA, in a relative sense, routinely affects successful mission accomplishment and the desired margin of safety.

Aircrew of Distinction Award

On 14 Nov 91, Captain Mark E. Kennedy, 72d Fighter Squadron, 56th Fighter Wing, MacDill AFB FL, was the instructor pilot in the rear seat of an F-16D during an afterburner takeoff for a transition syllabus sortie. On the turn out of traffic, at 400 ft AGL and 300 knots, the student pilot, on his third flight in the F-16, deselected afterburner. This was soon followed by a loud bang and a noticeable reduction in thrust. Capt Kennedy immediately took control of the aircraft and continued the right hand turn toward a low key position for a possible flameout landing. With illuminated engine warning lights, decreasing RPM and both cockpits filled with smoke, Capt Kennedy quickly evaluated his seriously deteriorating situation. Cognizant of his position over the highly populated base, Capt Kennedy elected not to jettison his full external fuel tank. Realizing that a flameout landing on the runway was impossible, he began converting what little excess airspeed he



Capt Mark E. Kennedy
72 FS, 56 FW
MacDill AFB FL

possessed into maneuvering altitude. A quick assessment of the airfield revealed an unoccupied taxiway as a possible landing surface. As he continued his turn, Capt Kennedy radioed the tower with his situation and landing intentions. Despite smoke in the cockpit and visibility restrictions from the back seat, Capt Kennedy was able to maneuver his completely powerless jet to a flawless rear seat flameout landing on the taxiway. Using aerodynamic and wheel braking, Capt Kennedy stopped the aircraft and both pilots safely ground egressed. Total time from takeoff to touchdown was less than 1 minute.

Capt Kennedy's superb airmanship, prompt action, and coolness under pressure allowed him to recover a valuable TAC resource. For his professionalism, quick thinking, and expert handling of the situation, Capt Kennedy earned the TAC Aircrew of Distinction Award.

Crew Chief Safety Award



Sergeant Thomas D. Smith, 95th Fighter Squadron, 325th Fighter Wing, Tyndall AFB FL, launched an F-15 and secured the parking spot. He then decided to remain there and watch that aircraft through takeoff. As the jet lifted off, he saw a panel fall from its underside onto the runway. He immediately notified his line supervisor who informed the Maintenance Operations Center (MOC). The runway was closed and Base Operations searched the runway to locate the object. As soon as the base operations vehicle passed the point where the panel fell off without sighting it, Sgt Smith requested the line supervisor coordinate with MOC for clearance to cross the red line and approach the



Sgt Thomas D. Smith
95 FS, 325 FW
Tyndall AFB FL

runway. With approval, he led two other crew chiefs to the side of the runway. They quickly found the panel (a jet fuel starter panel) just outside the runway edge marker. They also saw and identified to the base operations personnel several other foreign objects on the runway between the centerline and runway edge marker. With the recovered panel, maintenance discovered a **previously unidentified wear problem** on the aircraft. A one-time inspection of all base aircraft turned up several others nearing failure. Sergeant Smith's actions are a testimony of pride and dedication to quality performance. His actions earned him the TAC Crew Chief Safety Award.

Flight Safety Award of the Quarter



Captain Paul A. Madsen, 34th Fighter Squadron, 388th Fighter Wing, Hill AFB UT, receives this award for his sustained performance as Flight Safety Officer (FSO). Both he and the 34 FS Flying Safety Program were rated "Excellent" or outstanding on every inspection, including a 12 AF Staff Assistance Visit. He was the first wing FSO fully qualified in the Low Altitude Navigation and Targeting Infrared for Night (LANTIRN) system. He was instrumental in tracking several incidents with the new system, ensuring the wing's transition was smooth, and ahead of schedule. He doggedly tracked an unknown failure mode through the hazard report system, personally ensuring all suspect parts were recovered for MDR. He worked closely with contractors and safety representatives to ensure this failure mode was investigated and corrected. He worked with the maintenance complex to develop a squadron tracking file to provide pilots with recent aircraft history and

corrective action taken on any write-ups. This helps supervisors identify potential problems and take action before they develop into an IFE. Capt Madsen created a Commander's Safety File that provides weekly



Capt Paul A. Madsen
34 FS, 388 FW
Hill AFB UT

feedback between the commander and the FSO on any concerns or problems identified. It provides the commander a quick look at spot inspections and corrective action as well as maintenance actions after IFEs. Capt Madsen was the wing representative to the F-16 System Safety Group. He presented his findings concerning an operational deficiency in the interface between the LANTIRN system advanced mode switch and the digital flight control system. The problem can cause the loss of terrain clearing fly-up protection during terrain following operations with no warning to the pilot. His action in identifying and proposing solutions to this problem has had a significant impact throughout the F-16 community. All of his mishap investigations are consistently thorough and well reasoned. Capt Madsen earned the TAC Flight Safety Award of the Quarter in recognition of his quest for excellence and outstanding contribution to flight safety.

CHALLENGE

THE SAFETY

Clearly, with a reduced force, it is more important than ever to have a viable safety program that conserves human resources and material assets while preserving combat capability. This concept is so important that it is one of the major goals of Tactical Air Command.

Capt John S. Clark
461 FS/SE
Luke AFB AZ

Since the guns of Desert Storm have been silenced, it has become apparent that the Department of Defense team will face a significant dismantling. Clearly, with a reduced force, it is more important than ever to have a viable safety program that conserves human resources and material assets while preserving combat capability. This concept is so important that it is one of the major goals of Tactical Air

Command. Air Force safety statistics play an important role in measuring the effectiveness of our safety program and maintaining safety awareness. However, these statistics measure mishaps that have occurred and miss a key component of the safety equation, day-to-day operations in the air and on the ground. Therefore, it is at the squadron level where we can truly measure the safety program. How many close calls have there been? How many mishaps have been prevented?

NGE

Personally, I'm aware of two recent incidents in which mere seconds made the difference between a learning experience and a disaster.

In the first incident, a fighter aircraft was on a night intercept mission and had been in and out of the weather throughout the sortie. Near the end of the mission, the aircraft was in the radar pattern, popping in and out of weather on the downwind leg. As the aircraft turned final, the crew maintained VMC and noticed an aircraft light at 2 o'clock that appeared to be on a collision course. Both crew members focused on the aircraft as it remained stationary on the canopy. The backseater glanced inside to crosscheck the instruments and received a surge of adrenalin. They were at 60 degrees of bank, 10 degrees nose low at very low altitude. They rolled and pulled just missing the ground. What about the other aircraft? It was just a light on the desert floor.

The second incident occurred on a surface attack training mission. While in the indirect pop pattern, the lead aircraft flew as briefed. However, the number two aircraft flew a shorter pattern and was wrapped up with crew coordination and providing instruction from the last pass. In fact, the IP in the number two aircraft had taken control briefly on downwind. A "coffin corner" was in the making as both aircraft arrived at the initial point simultaneously. Only the flight lead's visual lookout and immediate action avoided a midair collision at 500 feet AGL. Perhaps the student thought the IP was also visual. The lessons from near mishaps are intense to those involved and to a lesser extent to those who are made aware of close calls.

How often have you heard, "Experience is the best teacher"? Undoubtedly, if you survive the experience, it's a great attention getter, but too

many experiences have resulted in destroyed aircraft and lost lives. Really, the "best" learning occurs when squadron mates communicate their own close calls and concerns. Through these talks, mishaps will be avoided and better ways of conducting business adopted.

The challenge for a squadron today is to examine their operations and search for ways to improve the process. Every flyer has an obligation to improve the training program and insist on discipline and professionalism. Regardless of the budget battles, our mission remains to deliver bombs on target, on time. More importantly, the reduced budget requires a proactive safety program that will ensure we have the aircraft and people necessary to protect America's vital interests.



Ground Safety Award of the Quarter



The distinctive efforts of Sergeant Melanie R. Proctor of the 363d Medical Group, Shaw AFB SC, earned her the TAC Ground Safety Award of the Quarter. She contributed significantly to the Hospital Safety Program becoming a "model for the Air Force." Her enthusiastic approach and "can-do" attitude culminated in an "Excellent" rating on the Annual Wing Safety Inspection for the second consecutive year, a "best seen to date" during a recent survey by the Joint Commission on Accreditation of Healthcare Organizations and a dual rating of "Excellent/Outstanding" on a recent Health Services Management Inspection. She developed a functional safety inspection program and checklists used by 34 departments that have resulted in timely reporting and corrective action of hazards. She created a system for ensuring all newly assigned personnel have an AF Form 55, Employee Health and Safety Record, prepared and initial training is conducted. The system is now being used by several medical treatment facilities. She has expanded the newcomers' safety training to

include fire prevention/protection, use of fire extinguishers, emergency power systems, ground safety, hospital safety, off-duty safety, family safety, and use of seat belts. She has created several safety bulletins that emphasize safety related to hospital hazards and



Sgt Melanie R. Proctor
363 MG, 363 FW
Shaw AFB SC

holiday safety. She established an effective working relationship with section safety representatives that has resulted in the hospital having a safer environment for patients, visitors, and staff. She was instrumental in establishing and implementing a Hazard Communication Program and Infectious Waste Management Program that was rated as a "model for the Air Force" on a recent Environmental Compliance Assessment and Management Program Inspection (ECAMP). She implemented a computer program that tracks hazardous materials from the "cradle to the grave," with a reporting capability. She organized an annual training program that resulted in 96 percent of hospital personnel being trained, including all civilian personnel. Sergeant Proctor has demonstrated a high degree of administrative and technical knowledge in hospital safety that is rarely found even in personnel more senior in rank. Her record of "excellent" and "outstanding" ratings in hospital safety at all levels of review is the best evidence of this junior NCO's truly quality performance.

SAFETY PROGRAM COMPLIANCE

MSgt Gary R. Reniker
442 TFW/SE
Richards-Gebaur AFB MO

Do you know what areas of your safety program need improvement? I can give you an educated guess without even seeing your work area.

During my 16 years with the safety office, I have seen quite a diverse collection of violations. However, I have noted that three problem areas keep popping up, regardless of the work activity: violations of the hazard communication standard, inadequate use of guards, and lack of safety training. Here's a rundown of each:

1. HazCom. The hazard communication standard has four major requirements. You must have a written hazard communication program and an MSDS for each chemical on site. You must also train your workers and label containers.

2. Guarding. All tools and machinery must be properly guarded. This includes blades, belts, pulleys, etc. Basically, if it moves, creates sparks or flying objects, or if it's sharp, it must be guarded.

3. Training. Training is essential to protect workers from accidents and illnesses. You cannot have a safe working area unless all personnel know how to work safely. For this reason, more than 100 OSHA standards require training. For example, personal protective equipment requirements, fire protection standards, and material handling rules all contain training requirements.

To comply with all these regulations, simply ask yourself, "Do my workers know how to do this safely?" or "Can this problem be solved, in part or in whole, by training?" If you answer "no" to the first question or "yes" to the second, you need to train your people.

I must stress that safety is not out to "get" you. Our goal is to ensure you provide a safe and healthy workplace. Each safety office is ready and willing to assist you in interpreting and applying standards to your work area. Just ask. There's no reason for an unsafe working environment.

It's March 1992 ... *Do we know where you are?*

Six months have gone by since we last asked that question and many of you responded with a variety of updates. The number of magazine shipments returned as "undeliverable" has been reduced, but I suspect that much of the mail listing database contains erroneous or unnecessary information. **READ ON!** The May issue of *TAC Attack* will be the last one. A new ACC safety magazine will make its debut in June, and the distribution will be based on a merged mailing list with input from both TAC and SAC. Now is the time to get the record straight as far as address and quantity are concerned. For Air

Force units, the old ratio of one copy per 10 persons assigned will still apply. An AF Form 764a will take care of things at your Publications Distribution Office (PDO) if they service your account. If you receive your copies shipped directly from the printer and we maintain the address listing, send the AF Form 764a or a letter to us. Our address can be found on the Table of Contents page. Be sure to include your old address to facilitate finding the proper file in the computer. You can also call us at (804) 764-3658 (DSN 574-3658) between 0700 and 1700 EST. See ya 'round ACC.

DOWN TO EARTH



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

Kitchen Cutup

Bob Balsie
Endicott NY

There I was.... sitting in the waiting room of the Medi-Center (a small emergency-room-type medical facility) waiting to have a doctor examine the laceration on my wife's right hand.

A few hours before, my wife, Jackie, had been washing dishes and talking on the telephone. She picked a glass out of the water and proceeded to try to wash some milk out of the bottom by dropping a sponge into the glass and then forcing her right hand down into the glass to scrub away the spot. At this point, the glass burst and broke into several pieces, almost completely severing a piece of skin about the size of a small almond on the back of her thumb, right on the second knuckle. The wound bled profusely, but she was able to stop the flow and bandage up the cut.

When I came home from work, she showed me what had happened. By this time the wound had turned purple in some places and white in others, so I insisted that we go to the Medi-Center for treatment. After examining the area, the doctor told us that he would try to stitch the damaged flesh back in place and see if it would heal. He prepped Jackie by giving her several injections of anesthetic and then proceeded to apply seven stitches to the wound. Then he bandaged up the entire thumb.

During the course of treatment, Jackie asked the doctor if he thought that the cut would heal alright. He stated that there was about a 70 per cent chance that the skin would reattach itself and heal normally. He went on to say that if the skin didn't reattach, it would probably be necessary to do plastic surgery and a skin graft to prevent the formation of scar tissue which would otherwise restrict the use of her thumb.

I asked the attending nurse if the Medi-Center had to treat wounds like this very often. She told me that this type of injury was probably the most common suffered by homemakers. Usually, the cause was trying to wash difficult stains out of a glass by forcing the hand into the glass.

Jackie was fortunate; the wound healed satisfactorily and there is almost no trace of a scar. Had the cut been positioned more toward the inside of the thumb, she might have cut the

tendon that runs the length of the thumb. This would have required major surgery and probably would have resulted in partial loss of the function of her thumb.

As it was, this accident cost several hundred dollars in medical bills. Jackie couldn't use her hand very well for a week and a half, and she had to take showers with her right hand taped up in a plastic bag until the stitches were removed. All of this because of a dirty glass.

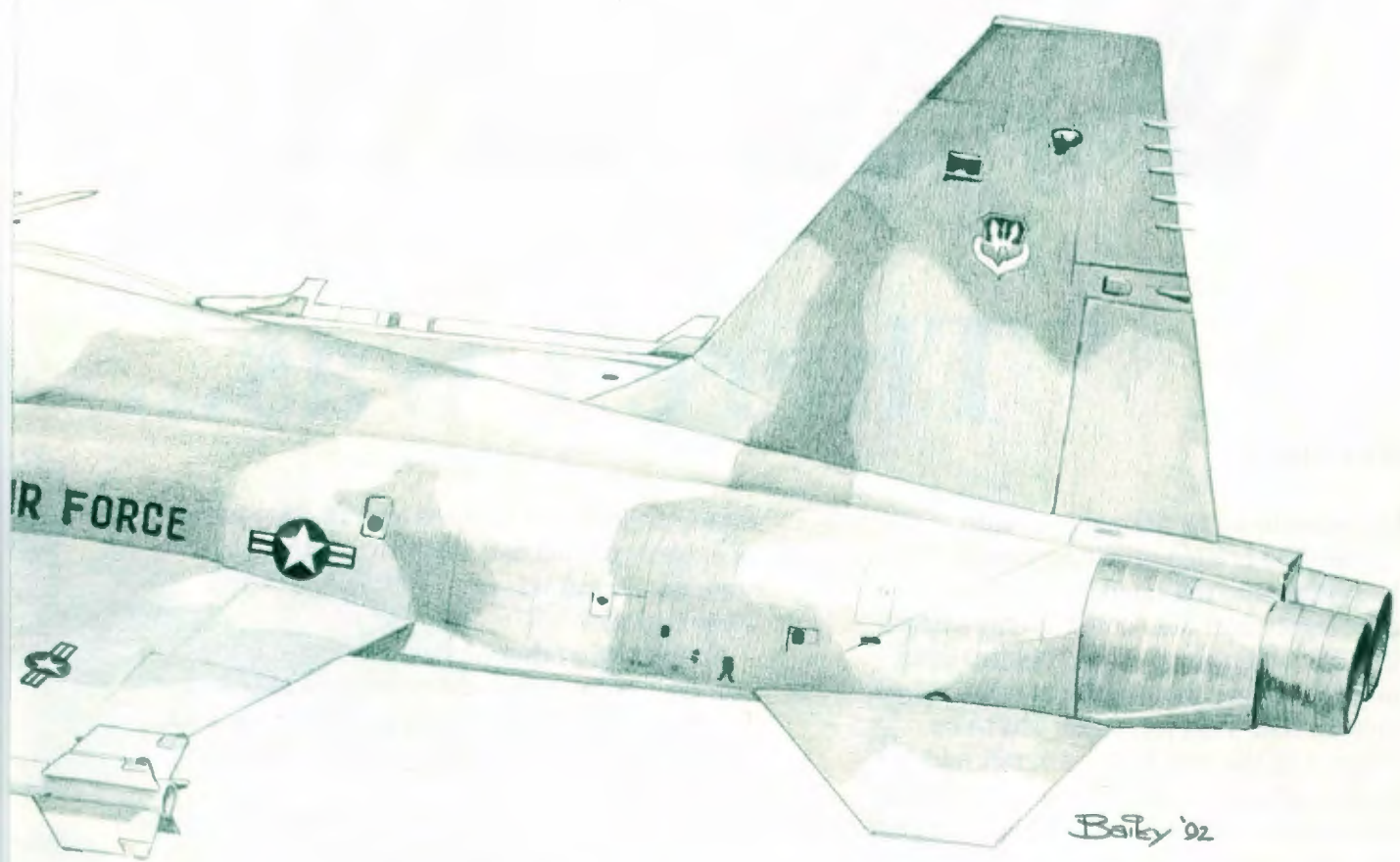
What can you do to prevent this kind of injury? First, and most obvious, is to never insert your hand into a glass when you are washing it. Put the dish cloth or sponge into the glass and use the handle of a wooden spoon or other nonmetallic object to swish it around. Better yet, buy a special utensil to do the job. This tool is made of foam and looks like a small mace. It's designed specifically to wash the insides of containers and it is quite inexpensive. Most grocery stores carry them. For the price of Jackie's medical bills, we could have bought enough of these devices to last the rest of our lives. Also, try using rubber gloves when you are doing dishes. While these are not "cut proof," they may help reduce the severity of a cut. They also have the secondary effect of protecting your hands from the damaging effects of dishwasher detergents.

Second, don't place dishes or pans on top of glasses in your sink. It is possible for a heavy object to crack the glass and cause it to break when you try to wash it, even if you are being careful.

And, of course, never put sharp objects such as knives into the dishwasher. These can cause an equally serious injury.

They say, "A stitch in time saves nine." In Jackie's case, it would have saved seven. After her harrowing experience, my wife has vowed to never again stick her hand into a glass. I hope that her experience will help you and your family members to avoid painful and needless injuries.





CENTER ART **F-5 TIGER**

BEEN THERE DONE THAT

There I was...

ANONYMOUS

The mission was a normal four-ship to the range. The briefed profile consisted of a tactical entry onto the range; tactical attacks on various targets; and then conventional pattern work to fill bombing and strafe requirements.

Range departure was briefed to be elements one mile in trail. That formation was to be maintained all the way home. Aircraft number four called off range and switches safe with no aircraft in sight. A quick call to tell four where to look was answered when he called one aircraft in sight.

One and two had joined close. I was number three, one mile in trail with the element. I felt good since number four had **one** aircraft in sight. When he joined on the **single** aircraft, he would not get in the way of the lead element and everything would be fine.

Unfortunately, the part of the briefing about the formation to fly home from the range had not gotten properly stored in four's data base. My call that the flight was in formation caused

four to believe that all three aircraft were joined in close formation and that what he thought was one aircraft was actually three aircraft close together.

Four decided that he had buffooned things enough for the rejoin and added lots of power to expedite the rejoin. He padlocked on the lead element and tried to make the world's quickest rejoin.

My first indication that things weren't quite right was when an F-16 zoomed right over my canopy. I was shocked and then even more shaken when I saw the speedbrakes go to full open immediately in front of my radome.

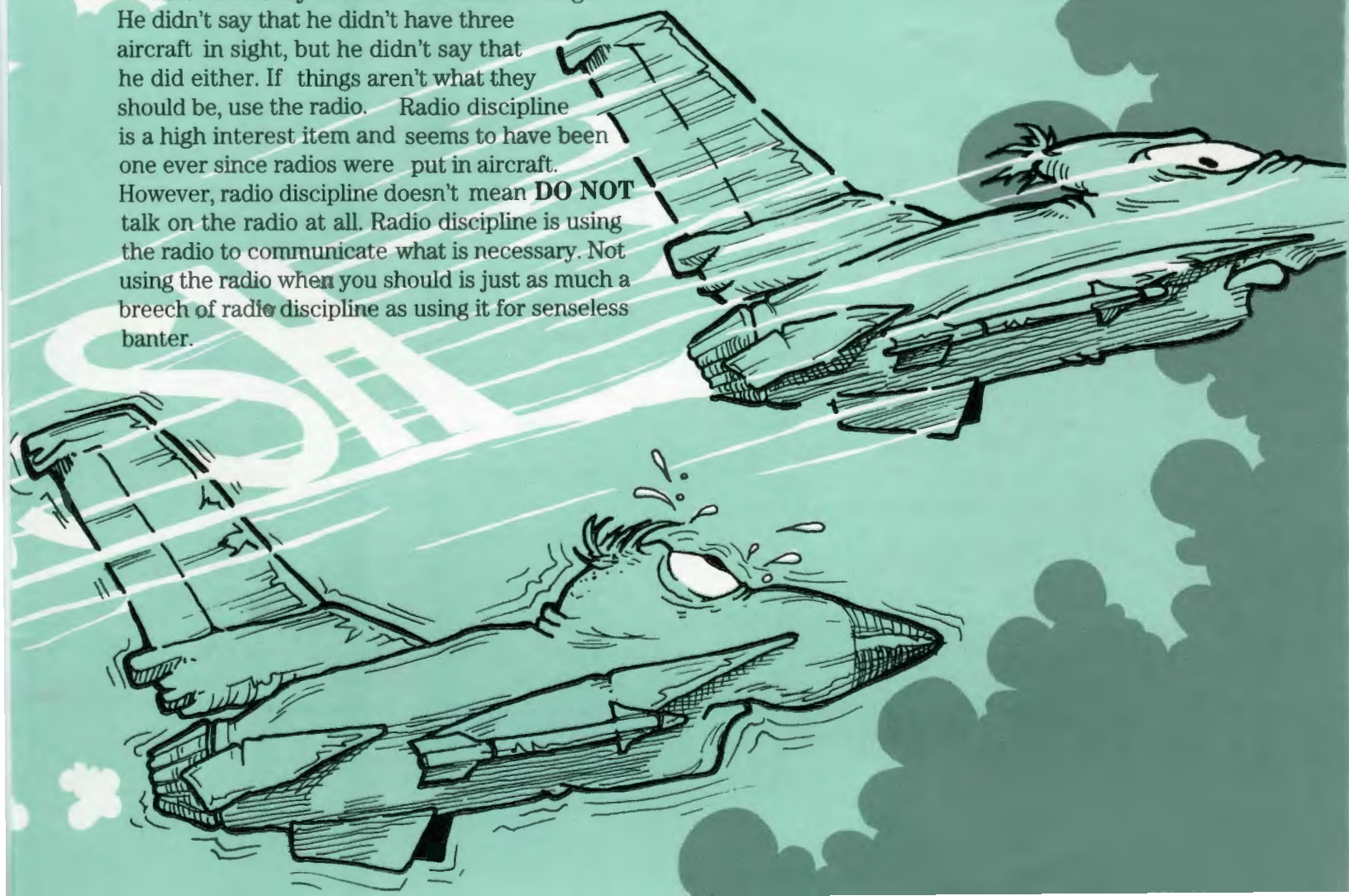
I am now highly perturbed because I believe that my wingman has just dusted me off and is now being really stupid. I quickly grab idle and boards and stomp hard on the brake pedals just in case the brakes might help. In this period of time, I am wishing I hadn't used my bullets on the range because I want to use them on my wingman.

Somewhere between wondering if I am going to ram him and wishing I could shoot him, number four asks for my position. Irate is not the appropriate demeanor to be displayed on the radio, so I call for him to do a couple of 90 degree turns and get him to line abreast where he can get a visual. While he is doing the first 90, I turn around to make certain that all of my vertical tail is still on the aircraft.

We fly home and I make certain that I fly a very loose pattern because every fiber of my being wants to slam 9 Gs in the final turn to burn off some of my anger. I know that won't make anything better; so I go overboard to make it a gentle and basic pattern.

When I calmly explain to four what had occurred, I take a sadistic pleasure in watching the blood drain from his face as he realizes how close he came to being a statistic.

I didn't do all that I could to make certain that he saw me. After I told him that the three aircraft were in formation, I didn't tell him more when he didn't say he had more aircraft in sight. He didn't say that he didn't have three aircraft in sight, but he didn't say that he did either. If things aren't what they should be, use the radio. Radio discipline is a high interest item and seems to have been one ever since radios were put in aircraft. However, radio discipline doesn't mean **DO NOT** talk on the radio at all. Radio discipline is using the radio to communicate what is necessary. Not using the radio when you should is just as much a breach of radio discipline as using it for senseless banter.



Survive a

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You are driving your car when suddenly it stalls. You could be on your way to work, to a meeting—anywhere.

Despite precautions, sometimes cars just won't start or they stall in the middle of a trip. Act calmly and follow these safety procedures to help you through what can be a frightening situation.

GET OUT OF THE WAY

Your first concern is to avoid being hit by other vehicles. Check to see if you've run out of gas. If you cannot start your car at all, put on your emergency hazard lights. Carefully get out of the car if it's safe to do so. If traffic will stop for you and you're strong enough or have help, put your car in neutral and steer it to the far right side of the street.

If it's impossible to move your car, or you are alone in a remote area, leave your flashers on, raise the hood of your car and tie a white handkerchief or flag on the antenna or driver's door.

It is not worth risking your safety to go for help. Many automobile sunscreens have a "send help" message on the back. Put the sign on the rear window of your car.

Place a flare or reflective triangle 15 feet behind the car and another at least 300 feet back (about 120 paces) to alert other drivers.

WHAT MAKES A CAR STALL?

Most stalls occur when your car runs out of gas, has a poorly tuned engine or has been driven through deep water. Other reasons might be a flooded engine, vapor lock or overheating.

If you were able to pull over, try idling your car. If the car still won't start, there's probably a problem with the battery.

Turn on your headlights to check this. If they are dim, your battery is probably too low and might need a jumpstart.

If you try to jumpstart the car yourself, always wear safety goggles. Never smoke or light matches when you work around your car's battery. Read the car's operating manual for specific instructions on how to jump start the battery.

Cars that have on-board computers usually can't be repaired without the help of a professional mechanic.

STAY WARM

During the winter, don't try to walk very far for help. Severe cold can kill within a few hours. Unless you know a phone is not far away, stay in your car until help comes along.

If your car still does not start, your next step is to call whatever emergency number you may have for this situation, such as that of an auto club.



PREVENTION IS THE KEY

Regular maintenance of your car is an important part of preventing breakdowns. Good maintenance includes checking your car's oil and battery. In cold weather keep your gas tank nearly full.

EMERGENCY KITS FOR BREAKDOWNS

An emergency kit stocked with the following items can help you get through a breakdown:

- Flares
- Flashlight
- Chains, kitty litter or sand to use under tires stuck in snow
- A set of heavy-grade jumper cables and safety goggles
- Roll of electrical or duct tape to temporarily fix wires or hoses
- Sandpaper to clean battery terminals
- Pocketknife
- Tire gauge
- A couple of cans of tire inflator/sealant
- Tire jack
- Spare tire
- Quart of engine oil
- Windshield-washer fluid
- Mixture of antifreeze and water
- Food supplies and blankets to keep warm

Do not keep alcohol for drinking in your emergency kit. Although alcohol might make you feel warm, it robs your body of heat and makes you more open to getting frostbite and hypothermia, a condition where your body temperature drops below normal.





Air-to-Air Missile Quantity-Distance (Q-D) Criteria

Lt Col James E. Humphrey
Chief, Air Force Explosives Safety Policy
Directorate of Weapons & Space Safety
Air Force Safety Agency

Air-to-air missiles are complex systems with very directional fragment patterns. This has resulted in some confusion regarding the air-to-air missile Q-D criteria published in AFR 127-100 and in various messages from the Air Force Safety Agency (AFSA). In years past, the application of Q-D criteria was relatively simple since the default minimum distance of 1250 feet was frequently used to separate missiles from inhabited buildings, while intraline and

intermagazine separations were based on the net explosive weight (NEW) of the missile(s), as shown in the AFTO 11A-1-46. AFSA sponsored a series of tests in the early to mid-80s to determine how susceptible various missile warheads (primarily AIM-7/9) were to propagation/mass detonation. The idea was to determine the NEW for the maximum credible event (MCE) of a group of missiles, whether on an aircraft, trailer or in their storage containers.

In general, the test program did show that propagation from missile to missile in the various configurations was limited and resulted in the criteria in AFR 127-100, which addresses the MCE for operational configurations. Additionally, another look was taken at existing data for the AIM-7/9, which were available from arena and hazard classification testing. The net result was a fairly complicated set of criteria covering the AIM-9 and the AIM-7 with either the WAU-10 or WAU-17 warheads.

One problem was that the missiles were hazard classified 1.2 for storage purposes. Not everyone realized that the 1.2 designation applied only to missiles in their all-up-round (AUR) containers and that the hazard classification for missiles in other configurations is subject to the results of testing in that configuration and is frequently different. Additionally, the Department of Defense (DOD) rules for storing 1.2 munitions has changed resulting in a minimum of 200 feet for the intermagazine distance and even greater distances for intraline separations. This made it more difficult to store/maintain/load 1.2 munitions than to store and perform similar operations with 1.1 munitions when the MCE is small. To further complicate matters, the DOD questioned some previously accepted computer analyses used to classify some missiles as 1.2. Rather than conduct additional costly tests, the classification of these items was changed to 1.1. The major difference this time was that the fragment hazard range was included in the 1.1 classification rather than using the default fragment distance of 1,250 feet. The NEW for missiles in storage was determined to be the maximum number of missile warheads that could be expected to simultaneously detonate.

Thus, as of late 1988, the AIM-9 was classed as (04) 1.1, the AIM-7 with WAU-10 or WAU-17 warhead was classed as (07) 1.1 and (04) 1.1 respectively. It is important to remember that these criteria are for missiles in the AUR container and do not represent the MCE applicable to missiles on trailers or aircraft. These rules are based on the separation and

alignment of missile warheads and were designed to keep the NEW of the group of missiles as low as possible with assurances that, should a mishap occur, the number of warheads detonating would be no more than predicted.

The final bit of complication came with the AIM-120 Advanced Medium Range Air-to-Air Missile (AMRAAM). The AMRAAM was assigned an interim hazard classification of Class/Division 1.1 using the default value of 1250 feet for inhabited building separation. This created problems for many units, both active duty and ANG, but the ANG problem was made worse by the fact that their units typically were colocated with civilian airports. Tests were conducted to develop the data necessary to assign a final hazard classification. The results led to a final hazard classification for the AMRAAM of (08) 1.2. However, the missile out of its container was still not characterized for fragmentation hazards, resulting in the requirement to use the default hazard distance of 1,250 feet. Early in 1991, AFSA obtained and analyzed AMRAAM warhead test data to determine the actual hazard zone. The result of that analysis was presented to the DOD Explosives Safety Board which, in turn, approved the AFSA-recommended safety zones. The approved distances for AMRAAM missiles having radially aligned warheads are: one missile, 500 feet; two missiles, 600 feet; three missiles, 650 feet; four missiles, 700 feet; on up to 20 missiles at 1000 feet. While the current situation involving Q-D for the AIM-7/9/120 is rather complicated, it appears to be the only workable solution for operational use of the missiles within the existing explosives safety system. In fact, the criteria presented above are based on hard data balanced by the needs of the users while providing the required level of safety. In addition, efforts are being made to rationalize the Class/Division 1.2 criteria, which will eventually make the hazard classification system more closely reflect the true hazards of missiles and other munitions.



Outstanding Individual Safety Achievement Award

On Friday, 13 Sep 91, an aircraft was armed and cleared through the end-of-runway (EOR) for its mission out to the Barry Goldwater Bombing Range. When the aircraft pulled onto the runway, everything seemed normal. All preflight checks were accomplished, and the pilot pushed the throttles forward for engine run-up before takeoff. Without warning, the right engine caught fire with no indications in the cockpit. The wingman noticed the fire and directed an emergency shutdown and egress of the aircraft. The EOR crew supervisor, TSgt

Curtis B. Franks, noticed the flames from the aircraft and directed his crew, TSgt Edward Hendrickson, Sgt J. R. Hawks, and A1C Shaw A. Boyd, to cease all arming operations and to proceed to the active runway. Running to the aircraft with fire extinguisher in tow, the crew arrived while the engine was still on fire. The crew immediately extinguished the fire; and by the time the fire department arrived, the aircraft

had been safed for maintenance. Following the fire department's arrival, Sgt Franks and his crew remained to assist. If not for the quick and decisive actions of Sgt Franks and his EOR crew, the aircraft would have suffered more extensive damage due to the response time and distance of the fire department. This crew exemplifies the dedication and concern that the personnel of the 355th Fighter Wing show everyday. The team effort of Sgt Franks, Hendrickson, Hawks and Amn Boyd exemplify TAC quality and earned them the TAC Outstanding Individual Safety Achievement Award.



TSgt Curtis B. Franks
355 AGS, 355 FW
Davis-Monthan AFB AZ



TSgt Edward Hendrickson
355 AGS, 355 FW
Davis-Monthan AFB AZ



Sgt J. R. Hawks
355 AGS, 355 FW
Davis-Monthan AFB AZ



A1C Shaw A. Boyd
355 AGS, 355 FW
Davis-Monthan AFB AZ

Fleagle





TAC ANNUAL UNIT GROUND SAFETY AWARD — CAT I

**347 FW
Moody AFB GA**

Recognizes a unit for
administering a quality ground
safety program.

DISTINGUISHED FLIGHT SAFETY AWARD



Capt Ronald R. Deptula
HQ 12 AF
Bergstrom AFB TX

Capt Richard E. Warren
347 FW
Moody AFB GA

MSgt Daniel T. Simpson
56 FW
MacDill AFB FL



Recognizes individuals who made
significant contributions to an
established unit, intermediate
headquarters, TAC or USAF
Flight Safety Program during FY
91.



TAC ANNUAL UNIT WEAPONS SAFETY AWARD — CAT I

**354 FW
Myrtle Beach AFB SC**

Recognizes a unit for
administering a quality weapons
safety program.

TAC ANNUAL UNIT GROUND SAFETY AWARD — CAT II

Recognizes a unit for
administering a quality ground
safety program.

507 ACW
Shaw AFB SC



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

Recognizes a ground safety
member who is new to the ground
safety career field and
demonstrated exceptional
performance during FY 91.



TSgt Keith W. Pryde
56 FW
MacDill AFB FL

SSgt Dominick A. Mongarella
1 FW
Langley AFB VA



TAC ANNUAL UNIT WEAPONS SAFETY AWARD — CAT II

Recognizes a unit for
administering a quality weapons
safety program.

388 FW
Hill AFB UT



GROUND SAFETY LEADERSHIP AWARD



MSgt Edward C. DuPont
507 ACW
Shaw AFB SC

Mr George Foreman
347 FW
Moody AFB GA



Recognizes ground safety professionals who demonstrated superior leadership capability at an established unit, intermediate headquarters, or MAJCOM during FY 91.



EXCEPTIONAL PERFORMANCE IN GROUND SAFETY AWARD

Recognizes ground safety members who made exceptional contributions to their unit's mishap prevention program during FY 91.



SSgt Bradley D. Mills
23 FW
England AFB LA

SSgt David Y. Hudlow
33 FW
Eglin AFB FL



TAC TRAFFIC SAFETY AWARD — CAT II

Recognizes a unit for
administering a quality traffic
safety program for operators of
privately owned vehicles Air
Force motor vehicles and special

purpose vehicles.

33 FW
Eglin AFB FL



DISTINGUISHED WEAPONS SAFETY ACHIEVEMENT AWARD

Recognizes a weapons safety
member who made significant
contributions to the weapons
safety program of an established
unit, intermediate headquarters,
TAC or USAF during FY 91.



Capt David L. Benson
4 WG
Seymour Johnson AFB NC

MSgt Robert M. Widner
388 FW
Hill AFB UT



Congratulations to the Tactical Air Command quality performers selected for the FY 91 annual awards--**WELL DONE!** This is the last of the TAC annual awards and April will close an era for all TAC safety awards. An Air Combat Command Safety Awards Program is now being developed and will be effective 1 Jun 92. Point of contact is Janet Gaines, HQ TAC/SET, Langley AFB VA 23665-5563, DSN 574-3658.

Outstanding Unit Safety Achievement Award

The 8th Fighter Squadron at Holloman AFB NM became operational in the F-15 Eagle in Mar 78; and on 2 Dec 91, the squadron achieved 100,000 hours in the F-15 without a Class A mishap. The "Black Sheep" have flown more than 80,000 sorties while accruing this phenomenal number of Class A mishap-free hours, and it remains the only Air Force F-15A unit without a Class A mishap in its history. Furthermore, the last Class B mishap experienced by the 8th occurred 88 months ago. Over the last 14 years, the squadron has deployed F-15s to Canada as well as overseas locations in Korea, Japan, Germany, Venezuela, and the Netherlands. Furthermore,

the "Black Sheep" have participated in numerous demanding and realistic exercises which include 16 Red Flags and 2 Green Flags.

8 FS
Holloman AFB NM



Nearly 200 pilots have contributed to the "Black Sheep's" outstanding safety record. As host to TAC's western F-15 Aerial Demonstration Team, the 8 FS has performed 47 shows throughout the United States, Columbia, and Venezuela. This year over 2,779,000 spectators watched the Air Force's premier Air Superiority Fighter. The 8th has had an outstanding tenure in the F-15 Eagle, and their record reflects the unit's emphasis on flight safety. The TAC Outstanding Unit Safety Achievement Award is awarded in testimony to the unit's quest for excellence and for their contributions toward fostering TAC's culture of safety.



TAC TALLY

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

* (SUCCESSFUL/UNSUCCESSFUL)

TOTAL			TAC			ANG			AFR		
JAN	THRU JAN		JAN	THRU JAN		JAN	THRU JAN		JAN	THRU JAN	
	FY92	FY91		FY92	FY91		FY92	FY91		FY92	FY91
5	13	8	2	5	4	3	7	4	0	1	0
1	7	4	0	1	1	1	4	3	0	2	0
4/0	7/1	6/1	2/0	4/0	3/0	2/0	3/1	3/1	0/0	0/0	0/0
0/0	0/0	0/2	0/0	0/0	0/0	0/0	0/0	0/2	0/0	0/0	0/0

CLASS A MISHAP COMPARISON RATE

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

TAC	FY 91	0.0	0.0	0.7	1.8	2.2	2.2	2.2	1.9	1.7	1.8	1.8	2.0
	FY 92	4.0	2.2	2.3	2.9								
ANG	FY 91	3.8	2.0	1.3	3.9	3.2	4.0	5.2	5.0	4.9	4.8	4.3	4.3
	FY 92	0.0	6.6	6.2	8.2								
AFR	FY 91	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	FY 92	0.0	9.9	6.6	5.0								
TOTAL	FY 91	1.2	0.6	0.8	2.3	2.4	2.6	2.9	2.7	2.5	2.5	2.4	2.5
	FY 92	2.5	4.1	3.9	4.7								
MONTH		OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP

TAC'S TOP 5 thru JANUARY 1992

1st AF		9th AF		12th AF	
"COMMAND-CONTROLLED CLASS A MISHAP-FREE MONTHS"					
72	57 FIS	55	1 FW	49	355 FW
32	325 FW	34	56 FW	48	366 WING
		26	31 FW	43	27 FW
		25	33 FW	29	49 FW
		19	354 FW	28	37 FW

ANG		AFRES		DRUs	
"COMMAND-CONTROLLED CLASS A MISHAP-FREE MONTHS"					
468	119 FIG	185	301 TFW	184	552 ACW
444	147 FIG	159	482 TFW	75	28 AD
254	110 TFG	126	924 TFG	54	USAFAWC
228	138 TFG	114	906 TFG	3	USAFFWC
201	112 TFG	89	507 TFG		

Ten Little Workers

Submitted by
TSgt Larry Stulz
906 TFG/SEG
Wright-Patterson AFB OH

Ten little workers,
Feeling fit and fine,
One smoked in the solvent room...
Then there were *nine*.

Nine little workers,
Thought they'd be late,
One cut through the railroad yards...
Then there were *eight*.

Eight little workers,
Looking up to heaven,
One fell off a loading ramp...
Then there were *seven*.

Seven little workers,
Putting in hard licks,
One mixed booze with gas,
Then there were *six*.

Six little workers,
Glad to be alive,
One forgot his goggles...
Then there were *five*.

Five little workers,
Standing near the door,
One thought a wire was "dead"...
Then there were *four*.

Four little workers,
One scratched his knee,
Didn't go for First Aid...
Then there were *three*.

Three little workers,
With nothing much to do,
One indulged in horse-play...
Then there were *two*.

Two little workers,
Took stairways on the run,
One missed his footing...
Then there was *one*.

One little worker,
Thought of the other nine,
Began to live safety...
Now he's doing fine.



ten little workers

