

TAC ATTACK

JUNE 1989



ANGLE OF ATTACK

Holy Smoke! Can you believe what happened on 1 May? The Air Force allowed Lt Cols Bill Byrns and Dan McCabe, the chiefs of safety at Ninth and Twelfth Air Force, respectively, to pin on full colonel. Congratulations, guys. I guess there's hope for all.

This is the time of year when thunderstorms and sudden rains are a fact of life for many of you. Coping with the adverse weather, winds, and lightning airborne is not the end of it. Remember the moisture that's waiting for you on the runway when you return to base. Hydroplaning is a real possibility. We experience numerous cases of it and you need to be aware of what can happen. Lots of you pilots have looked at the end of the runway out of the side of the canopy instead of the front; but due to luck, skill or superstition managed to get the aircraft straightened out before a serious problem resulted. Col Lee Harrell (507 TAIRCW/CV, Shaw AFB, SC) has had the opportunity recently, while serving as a mishap board president, to learn more about the science of hydroplaning than the rest of us will pick up during our entire careers. He has put what he learned into an excellent article for this issue.

One of the critical elements of operating in our present high-G flight environment is personal physical conditioning. I know all of you are working programs in this area. One outstanding program I'd like to recommend for your consideration is at the 405 TTW (Luke AFB, AZ). Contact them and see how they're doing it there.



By the time you read this, we'll be well into the "101 Critical Days of Summer." We've already talked about our TAC folks being on the roads due to PCS, TDY or leave during this period. With June, everybody else is also getting on the roads with us as well. The "crazies" are also getting out on the boat docks and other recreational areas. Watch out for yourself and your family. Don't let someone else ruin your summer.

We'd like to say goodbye to the guy that's been responsible for making *TAC Attack* a quality publication for the past four years, Major Don Rightmyer. He has brought this magazine to a high level of excellence, making it more readable and providing more useful information than in the past. Best wishes to you and your family during your next assignment. You are a great pardner.

Jack Gawelko
JACK GAWELKO, Colonel, USAF
Chief of Safety

TAC ATTACK

DEPARTMENT OF THE AIR FORCE



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TAC ATTACK

JUNE 1989



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THE AIR FORCE

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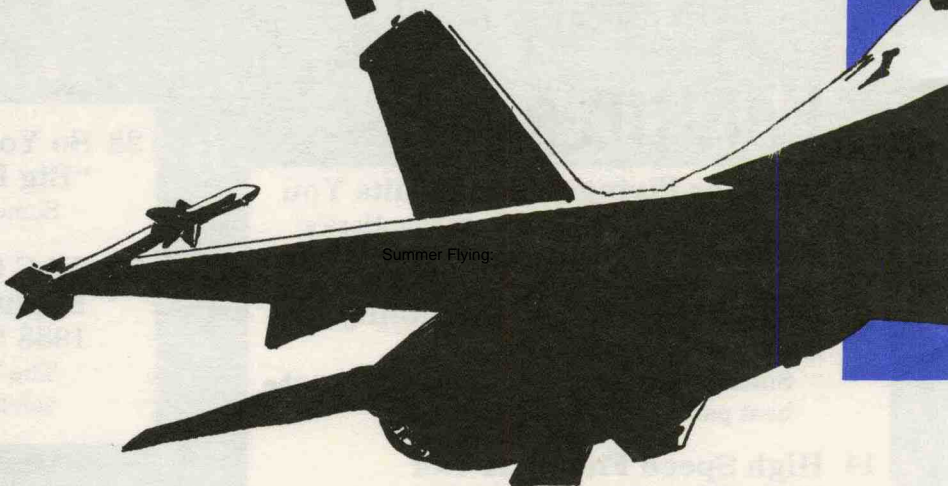
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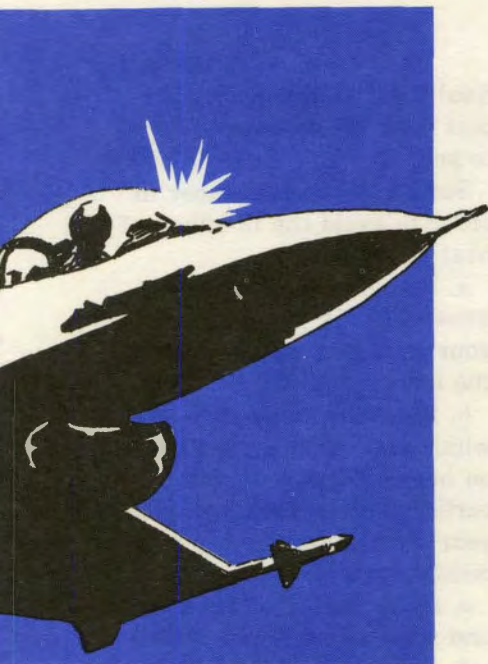
SUMMER FLYING:



Col Terry Markle
HQ TAC/SEP
Langley AFB, VA

The summer season is now here. Along with warmer temperatures and longer days, it brings some unique conditions that seriously affect how we need to go about our business of flying airplanes. Historically, the summer months are not the worst for aircraft mishaps. Our TAC average is about two aircraft losses per month during June, July, and August. While this is slightly better than average, the summer hazards are still real and demand attention from our TAC aircrews. In this article I will specifically focus on three areas of summer hazards: summer disruptions, weather, and heat.

WHAT AWAITS YOU



SUMMER DISRUPTIONS

The smoothest and safest flying schedule a unit can have is one that experiences a great deal of continuity in terms of people and mission. In other words - everything "flows" well. Disruptions to this smoother flow occur all the time, but it is the summer months where these disruptions are the greatest in magnitude and last the longest.

The summer is our biggest PCS period. Our old heads are leaving and new guys are showing up. Everyone is trying to cram as much leave/vacation time in as possible. The deployment and inspection schedule heats up. Long days and long weekends beg us to get out and enjoy nice weather. In other words, our TAC aircrews are

expected to perform their same mission, but with fewer and less experienced people as well as more outside distractions.

This presents a unique challenge for flyers and supervisors alike. Schedules have to be prepared that reflect and accommodate summer disruptions. Missions have to be conducted with a close eye on the current capabilities of all flight members. And, individual aircrews need to be constantly aware of their own ability.

We are suggesting nothing new about how to manage summer flying. It's the same application of good leadership and common sense that should always apply. But the unique problems presented by this personnel turmoil need particular attention during the summer months. Mission complexity may have to be reduced, and more emphasis placed on the basics of our business.

WEATHER

The summer flying weather is generally more favorable than the colder months. However, there are several weather phenomena that are particularly pesky during summer months, namely air mass thunderstorms, increased density altitude, and thermal turbulence. Of these, thunderstorms are undoubtedly our worst hazard, due to the turbulence, hail, icing, lightning, heavy precipitation, and low-level wind shear associated with them. Your base weather

forecaster is the best person to get you smart on these hazards. He can give you a run-down on what's common to your area, and some clues on overall trends for how the storms develop and move through your local flying areas.

There are a lot of techniques for avoiding these storms, starting with mission planning. Specific attention should be paid to where thunderstorms are located or likely to occur. A satellite photo or other graphic portrayal helps a lot here. Also, pay particular attention to the freezing level and then try to avoid it. While airborne, we all know not to penetrate a thunderstorm, but equally important is your proximity to a storm; so exercise extreme caution when you try to takeoff, land, or even fly around with a storm in the immediate area. Also, keep in mind that thick cirrus clouds from decaying thunderstorms can also be one of the most likely places for a lightning strike to occur.

Don't rely on air traffic control centers to keep you out of harm's way. Centers only have a limited capability to detect weather. Use your MOD I eyeballs and airborne radar (if your aircraft is so equipped) to see and, therefore, plan ahead to avoid the storms. Remember, there's nothing magic about the corridor boundaries on a low-level route or the black line drawn on a cross-country chart. If a thunderstorm decides to share



SUMMER FLYING

Everybody has a different tolerance to heat stress due to differences in age, level of physical condition, personal habits, etc; so the heat stress on aircrews at Luke will be different from that on the aircrews at Langley.

the airspace you had planned to use, deviate from your planned route and let the air traffic control folks know as soon as possible and, remember, all this "weather avoidance navigating" does not come free — it will cost you fuel. So bump up your bingos, and keep all your options open.

HEAT

The summer is full of long, hot, humid days that can exact a toll from aircrews and ground personnel alike. The result of this environment is heat stress from which we will all suffer in varying degrees this summer. Experts have determined there are four variables that determine an individual's heat stress:

- a. air temperature
- b. humidity
- c. air movement
- d. surface-reflected heat

Everybody has a different tolerance to heat stress due to differences in age, level of physical conditioning, personal habits, etc; so the heat stress on aircrews at Luke will be different from that on the aircrews at Langley. The point is: aircrews must be aware that heat stress can affect what we do in the cockpit. For example, if you've spent an hour on a 110-degree ramp ground aborting a couple of jets before you

finally get airborne, do not expect your G tolerance to be up to par.

Some rules to remember in order to avoid the ill-effects of heat stress are:

a. Recognize physiological limitations (in yourself and your squadron mates, especially the new guys).

b. Minimize those stresses which you can (e.g., don't put on heavy flight equipment earlier than necessary or close your aircraft canopy before you must).

c. Drink plenty of water — and then drink more.

d. Consult your local flight surgeon's office for expert advice on assessing the risks of significant heat stress in your operations and on the best means of prevention.

One aspect of flight safety is to combat *complacency* through aircrew *awareness*. That is what this article is about — attacking the complacency of summer flying by increasing your awareness of a few of the hazards you'll face during the next few months. Our recommended solutions are nothing new - they are just the time-honored common sense approach to doing things smart in the cockpit. Keep an eye on yourself, your wingman, and your squadron this summer. If it does not make sense to be doing it - then don't do it. Fly safe, and have a good summer.



AIRCREW OF DISTINCTION

Maj Edward Schantz was leading a four-ship F-15 air-to-air mission on a partially moonlit night with no discernible horizon due to light cirrus clouds from FL220 to FL380. Ground lights could be seen as well as the stars and the overall atmospheric effect was that of a "milk bowl." As the flight entered the working area at FL370, Maj Schantz checked the flight's navigation aids and cleared numbers three and four to their prebriefed point. While Maj Schantz navigated to his point, he cleared his wingman from route to a 3-5 NM trail position.

As his wingman moved back to approximately 2 NM trail, Maj Schantz observed the aircraft's nose pitch up and then roll rapidly to the left. At this point, he made a directive call to his wingman to recover. As Maj Schantz continued to monitor his wingman, he saw the aircraft roll inverted and the nose began to fall through the horizon. Convinced that his wingman was unaware of his aircraft attitude, Maj Schantz made an immediate hard left descending turn to keep sight and rejoin with him. As number two was entering his second barrel roll, the distance between the two aircraft began to increase. Because it was difficult to fly his own aircraft and also keep his wingman in

sight, Maj Schantz used his aircraft radar to maintain awareness of where his wingman was and the altitude of the aircraft. Maj Schantz then calmly directed his wingman to "get on his instruments," roll wings level, and recover. Still there was no response. Maj Schantz queried him on his attitude, airspeed and altitude. At this time, the wingman started responding to questions and stated that he was severely disoriented and that in his recovery attempt he had stagnated an engine. By now both aircraft had lost approximately 14,000 feet.

Maj Schantz, convinced that his wingman was back in control of his aircraft, assisted him with the airstart of the stagnated engine, directed a heading and channel change, and declared an emergency for spatial disorientation and engine malfunction. He then rejoined to a chase position and coordinated a nonstandard recovery back to Holloman.

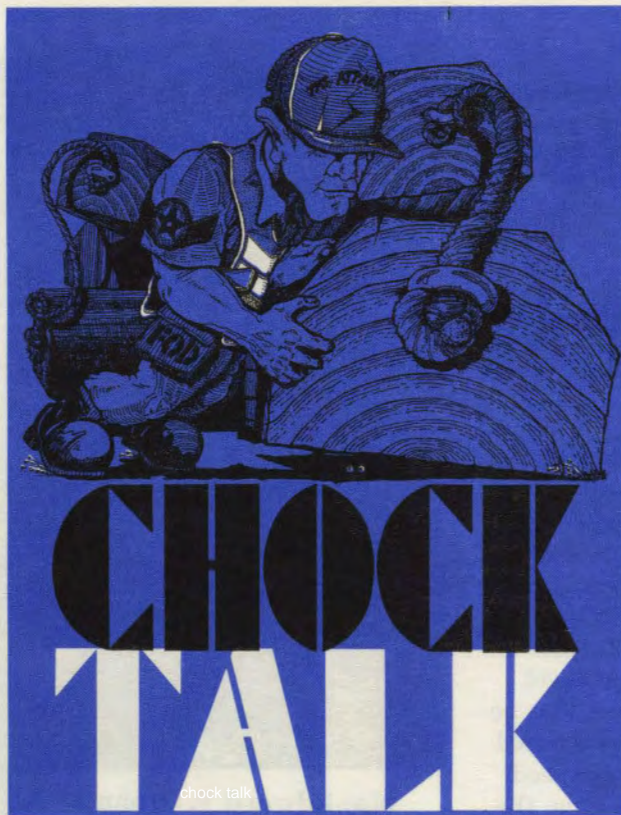
While on the recovery, the wingman informed his lead that whenever he attempted to look outside the aircraft he became severely disoriented. Maj Schantz continued to talk to him and called out flight parameters to help reassure him that his aircraft was performing properly. By continuing to convince number



Maj Edward T. Schantz
8 TFS, 49 TFW
Holloman AFB, NM

two that he would be OK, Maj Schantz was able to guide him through an ILS approach to a successful full-stop landing. After landing, the mishap wingman stated that the spatial disorientation was so severe it was almost impossible to trust his instruments and he was seriously considering ejection. He went on to say that when he heard Maj Schantz's calm, reassuring voice, he began working as hard as he could to recover his aircraft.

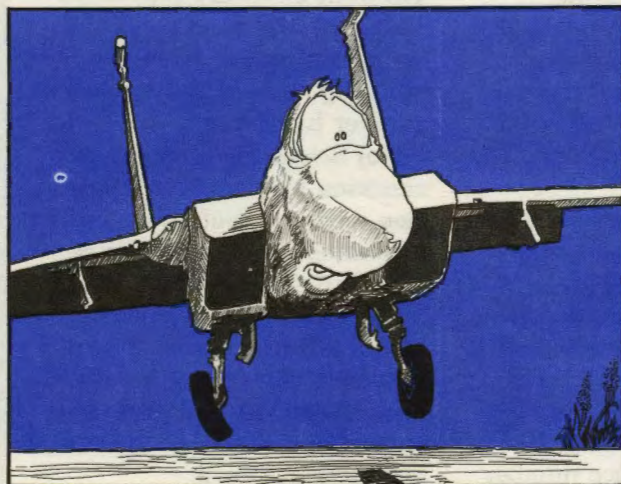
Maj Schantz's diligence in checking his wingman's position during a routine change in formation position, his quick thinking, extraordinary flying ability, and precise actions under extreme pressure prevented the loss of a valuable combat aircraft and pilot and earned him the TAC Aircrew of Distinction Award.



Dropped or not ? You tell me

When an F-15 Eagle returned from a night intercept mission, a hinge pin on door 112 was missing that had been there before the sortie. The pin was a small item, but it became a **dropped object** just the same.

This pin fell out due to wear, which allowed it to finally vibrate out and be lost while airborne. Could it have been prevented? Probably, by all the



folks who worked on or inspected the jet looking closely for wear and looseness. That's the only way we can prevent dropped objects—by everyone who looks at the aircraft, operators and maintainers alike, ensuring that everything is tightly fastened and going to stay that way during the next flight, and several after that.

Check it—first

Recently at one TAC base, an aircraft was in the fuel barn with an open fuselage fuel cell undergoing cure. Structural repair workers were dispatched to the fuel barn to repair a spoiler mount bracket which required drilling into the left trailing spar adjacent to the wing fuel tank. En route to their assigned work area, the structural repair workers failed to report to the fuel shop supervisor as required by the unit's maintenance operating instruction (MOI). The CRS fuel shop supervisor also failed to ascertain the exact nature of the work to be performed or to provide a safety briefing or have a fuel system specialist accompany the structural repair workers.

The structural repair workers began their job without purging the wing fuel tank according to the technical order. The structural repair worker began chain drilling a 3-inch by 6-inch hole into the trailing wing spar and complained to a passing fuels technician of excessive fuel vapors. The fuels technician attached a purge duct to the wing tank, but removed it at the request of the repair worker because metal shavings were being drawn into the wing. While the fuels technician did warn the structural repair workers that the wing tank was not properly purged, he failed to stop the work or inform his supervisor of the T.O. violation. The structural repair workers ignored the verbal warning and continued working in the unpurged fuel tank. As one of them attempted to remove a rivet inside the fuel tank with a punch and hammer, a spark resulted which ignited fuel vapors in the tank. The resulting flash fire and explosion damaged the wing beyond local repair capability (\$47,000) and caused second and third degree

burns to the left hand and arm of the structural repair worker.

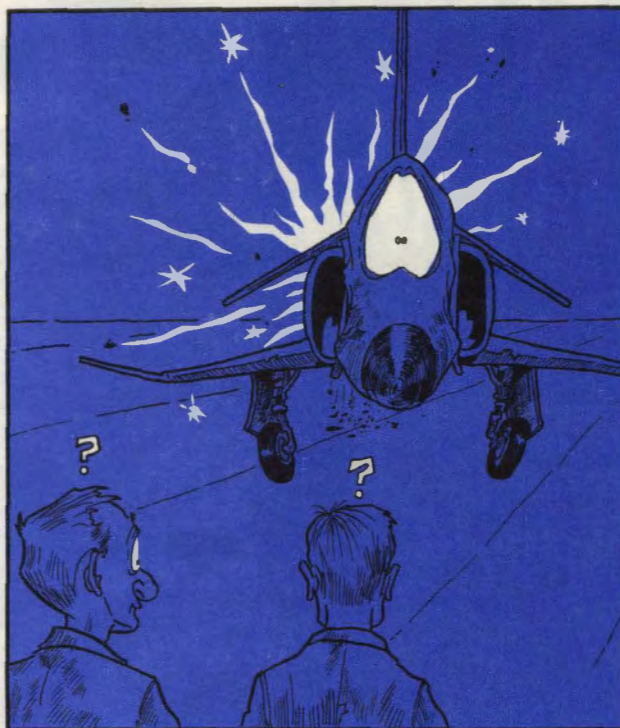
Does this point up any possible problem areas in your own maintenance operations? Don't confine your emphasis to only off-equipment and hangar maintenance. Think of all those occasions when technicians reported to an aircraft on the flight line and started work without checking in with the expeditor or production supervisor. A thorough review of your current method of operation to ensure proper emphasis is given will help prevent a similar mishap at your base.

Not qualified—and other things

A seven-level supervisor in an F-4 unit asked two workers, both five skill levels, if they had experience in the removal and replacement of a constant speed drive (CSD) and generator assembly. The pair was not task certified to do the job, but they didn't tell the supervisor that important fact. Both workers had performed the task twice before and felt that they could do the job. The supervisor didn't ask about their certification and was not familiar with their progress in upgrade training.

When the supervisor and workers went out to the aircraft, the required IGV plugs weren't on hand; so the supervisor went to get them while the two men began working. Worker #1 removed everything except the CSD/generator, then he crawled out of the intake and the second worker crawled in to remove the CSD/generator. The supervisor was present during part of this phase, but left the work site for about an hour to perform maintenance on another aircraft. All hardware was placed in a FOD bag and the bag placed in the toolbox while the CSD/generator was taken to the shop.

When the workers returned to the jet with a new CSD/generator, a third noncertified worker was at the aircraft; and he installed a critical seal and mounted the generator with the three mount bolts requiring safety wire. Before he left the area, he



informed the other two workers that one of the 12-point mount bolts was missing. The workers did a search of the toolbox and the ground around the aircraft, but never found the bolt. The second worker obtained a new one from bench stock and returned to the aircraft. He installed the remaining bolts and checked the intake for the missing bolt. At this point, the task supervisor returned. Since no forms entries had been made, the supervisor entered the Red X CSD/generator removal, conducted the locally required in-progress inspection and signed off the forms. Neither of the workers informed the supervisor of the missing bolt or entered that fact on the aircraft forms.

Worker #1 finished the task and the aircraft was towed to the Hush House where a dual engine run was started. The number one engine was accelerated and a possible stall encountered. The engine was brought back to idle and slowly accelerated, then sparks started to come out of the exhaust. After engine cool-down, an inspection revealed extensive damage to the 1st through 17th stages of the engine. The FOD imprints matched the 12-point generator mount bolt.

How many errors in judgement and professional maintenance procedures can you find that led to this \$30,000 FOD incident? What would you have done to prevent it from ever occurring? At what point would you have called a halt to this disastrous sequence of events?

HEAT STRESS



Maj Doug Wilcox
Flight Surgeon, 94 TFS
Langley AFB, VA

The outside air temperature was 95 degrees and the humidity was 90 percent. At 70 knots on takeoff roll, the ECS light illuminated and 150-degree air entered the F-15 cockpit through the air condition duct. The pilot aborted takeoff and opened the canopy as he returned to the chocks. As he climbed down the ladder, the pilot felt weak and dizzy. The crew chief noticed that the pilot looked pale and an ambulance

was called. Upon examination by a flight surgeon, it was determined that the pilot was suffering from heat exhaustion.

During an ORI, a pilot passed through the entry control point for an exercise. Before he was able to get to the squadron, the airfield came under attack. Entering a bunker, he donned his CW gear. Forty-five minutes later, Condition Black was declared and the pilot entered the squadron. A mass brief lasting one and a half hours was held, during which CW gear was worn. An exercise evaluator noticed that the pilot was in distress and instructed him to

remove his CW gear. Upon doing so, the pilot was found to be pale, sweating profusely, shaking, and having difficulty in concentrating. He was diagnosed as having heat exhaustion and was treated with hydration and rest.

In both of these instances, each pilot was in excellent physical condition. Each had obtained adequate crew rest the night before, eaten a proper diet, and was physically and mentally prepared for his mission. Both pilots suffered from heat stress. Personal safety, mission safety, and mission completion had been compromised.

Heat stress occurs when the body core temperature gets high

a risk of summer operation

enough to impair physical and mental functions and human performance. Specific results of heat stress include heat cramps, heat exhaustion, and heat stroke. Heat cramps are painful muscle cramps due to loss of salt from the body. Treatment is replacement of salt and fluids. Gatorade and fruit juices are good replacement liquids. Heat exhaustion is a result of water and salt loss from the body. Symptoms include profuse sweating, skin pallor, and low blood pressure. Treatment includes removing the patient to a cool place, rest, and use of oral or intravenous water and salt solution.

Heat stroke occurs when there is a failure of the body's heat regulating mechanism. Body temperature is above 106 degrees, the skin is red and dry, there is no sweating, and there is loss of consciousness. Treatment consists of keeping the

patient as cool as possible and immediate transport to a hospital. Heat stroke is often fatal.

The degree of heat stress and the body's ability to counteract the effects are a function of both physical and environmental factors on the individual. When a person becomes dehydrated, he is more susceptible to heat stress. Dehydration symptoms include thirst, a shallow rapid pulse, low urine output, and discolored urine. The best treatment for dehydration is prevention. Maintain an above normal fluid intake and remember that caffeinated beverages and alcohol cause the body to lose fluids. Important physical factors associated with prevention of heat stress include acclimatization, sweat rate, clothing, and physical conditioning. Acclimatization is one of the ways to prevent heat stress. This can be accomplished by

moderate exercise for short periods several times a day in the same heat to which you want to acclimatize. Evaporative heat loss is a major mechanism the body uses to remove heat. Maintaining a well-hydrated state and wearing proper clothing are important. Light-colored, lightweight, loose-fitting permeable clothing helps evaporation. When humidity rises, evaporation decreases. Air movements, such as the wind or a fan, will increase evaporation from the skin. Aerobic conditioning enables the body to acclimatize more quickly and show less physiological strain while working in hot climates. Adequate rest and proper nutrition are also important.

The Air Force must operate in all types of environment. Just as machines can break down due to excessive heat, so can people. Be smart and don't let it happen to you. ➤



TAC Personnel Who Have Made Noteworthy Accomplishments To Unit Effectiveness

Lt Col Sammy S. Todd
Maj Donald E. Link
Capt Michael J. Ruiz
MSgt Richard A. Palmer
TSgt Moira Grant
552 AWACW, 28 AD
Tinker AFB, OK

MSgt Bruce J. Smith
868 TMTG, 836 AD
Davis-Monthan AFB, AZ

TSgt Bobby L. Burns II
823 RHCES
Hurlburt Field, FL

SSgt Joseph Barnes
27 EMS, 27 TFW
Cannon AFB, NM

SSgt Richard B. Burroughs
33 AGS, 33 TFW
Eglin AFB, FL

SSgt Anthony R. Murrell
602 TACCS, 836 AD
Bergstrom AFB, TX

A1C John C. Pomilia
363 EMS, 363 TFW
Shaw AFB, SC

TAC tips

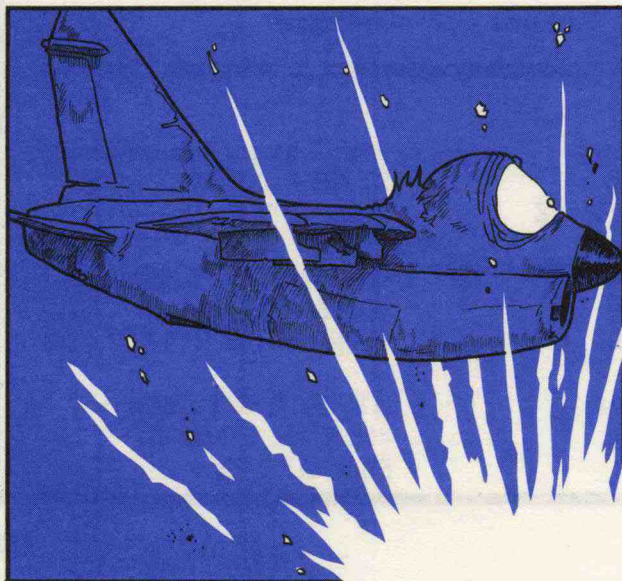
INTERESTING ITEMS, MISHAPS WITH MORALS, FOR THE TAC AIRCREWMAN

How important is switchology ?

An A-7 pilot was part of a three-ship weapons delivery mission. The aircraft was properly loaded and configured for the high drag delivery of two MK-82 500-pound bombs with a BSU-49 fin assembly and an M904 nose fuse.

The Corsair II pilot accomplished a 400-knot level delivery at 200 feet with a 4G in 2 seconds escape maneuver. Everything was not as planned, however, because the pilot had erroneously selected "Nose" fuse on his armament panel which should release the bomb slick and unarmed. Upon impact, the bombs exploded, causing fragmentation damage to the jet.

I don't know about you, but this incident will certainly make me pay even closer attention to weapons delivery parameters and proper switchology. Sure, this mission was planned for safe escape distance, but those bombs weren't supposed to go off. You never know when something that is not supposed to happen will, so make double sure your switches are set - correctly.



Weather observer limitations

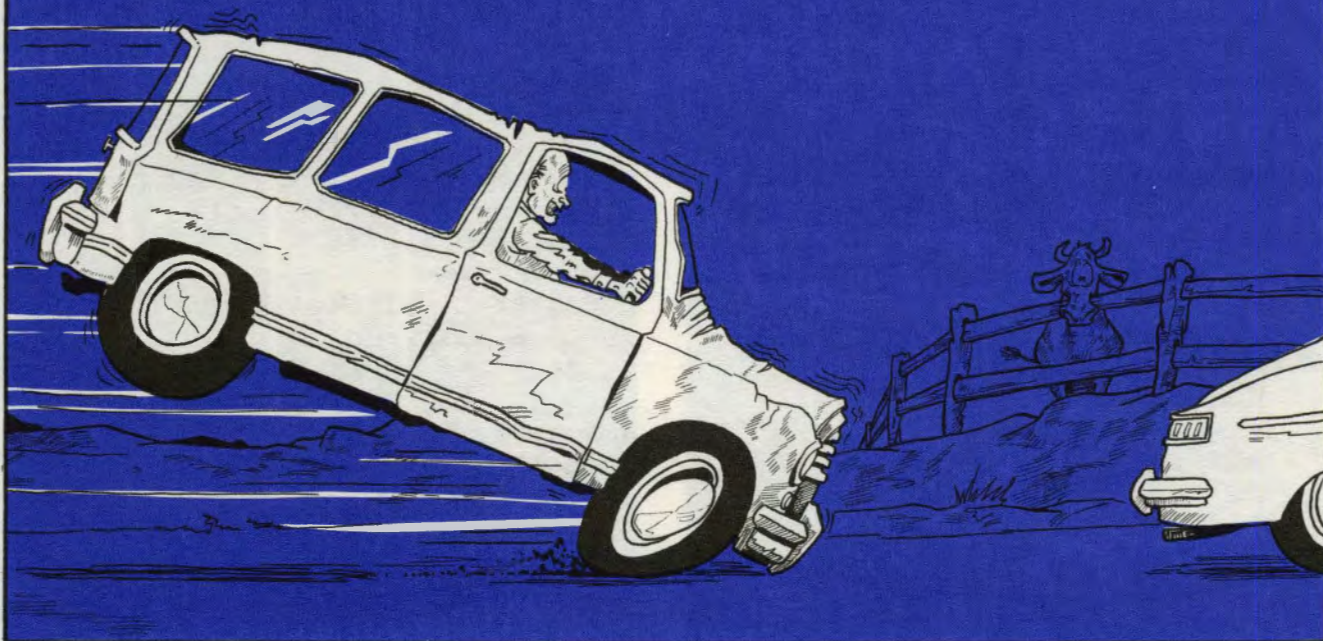
High quality observations are provided to military aircrews by Air Weather Service observers. However, sixty-five Air Force and Army airfields throughout the world have conditions which restrict the weather observer from seeing one or both ends of a runway when taking an observation. How can weather observations still be so good? Answer: Because of the close cooperation with Air Traffic Control (ATC), supervisors of flying (SOFs), and aircrew personnel. Their inputs are necessary for consistent, accurate weather observations. The next time you are cleared cross-country, or are landing at an alternate which is one of the bases listed below, be aware that the official observation may not include weather at the approach end. Contact with ATC or the SOF can often provide other relevant weather data. (Note: This information has also been forwarded for possible inclusion in FLIP.)

Location	Primary Runway	Alternate Runway	Cross-runway
Andersen AFB			
Guam	06		
Kastner AAF	20		
Bad Toelz GE	03		
Katterbach GE		08	
Grafenwoehr			
GE	14		
Coleman GE	05		
Finthen GE		26	
Wiesbaden AB	26		
RAF Green-			
ham Com-		11	
mon UK			

Location	Primary Runway	Alternate Runway	Cross-runway
RAF Alconbury UK	30		
Spangdahlem AB	23		
Hahn AB	21	03	
Zaragoza AB	30L		
Rhein-Main AB			18
Castle AFB CA	32		
March AFB CA	15/33		
Beale AFB CA	33		
Dyess AFB TX	34		
Ellsworth AFB SD	14		
Minot AFB ND	11/29		
Shemya AFB AK	28		
Ft Richardson AK	34/16		
Ft Wainwright AK	24/06		
Randolph AFB TX		32L/14IR	
Maxwell AFB AL	33	36	
Sheppard AFB TX	23L/15R	33R/ 15L, 17	
Keesler AFB MS	03/21		
Grand Forks AFB ND	17/35		
Wurtsmith AFB MI	06/24		
McConnell AFB KS	19L	19R	
KI Sawyer AFB MI	19		
Grissom AFB IN	23		
Peterson AFB CO	35	30	
Patrick AFB FL	Shuttle Strip		
Edwards AFB CA	Lake Bed		
Howard AFB PN	36		
Seymour Johnson AFB NC	08/26		

Location	Primary Runway	Alternate Runway	Cross-runway
Myrtle Beach SC	35		
Langley AFB VA	08		
Ft Drum NY	15		
Ft Leonard Wood MO	32	14	
Ft Benning GA	32	14	20
Ft Hood TX	33		
Bergstrom AFB TX	35	17	
Cannon AFB NM	04/22	13	
George AFB CA	21	03	
Davis-Monthan AFB AZ	30		
Holloman AFB NM	16	04/22 07/25	
Luke AFB AZ	03		
Nellis AFB NV		03L/03R	
Dover AFB DE	01		14/32
Westover AFB MA			33
McGuire AFB NJ	06/24		18/36
Selfridge ANGB MI	01		10
Robins AFB GA	32		
Lajes AB Azores	16	11/29	
Pope AFB NC	23		
Dobbins AFB GA	11		
Tinker AFB OK			30
Travis AFB CA	21L		
Hill AFB UT		32	
McClellan AFB CA		34	
McChord AFB WA	34		
Little Rock AFB AR		07	
Buckley ANGB CO			26

HIGH SPEED FIASCO



**Mr. Cal Faile
TAC/SEG**

I had just completed the last day of a hunting trip and was heading home. Traffic on the interstate highway was fairly heavy, but vehicles were spaced sufficiently to allow me to set the cruise control at the legal speed limit. I sat back, relaxed and took in all the beautiful fall scenery this state has to offer.

My thoughts were not completely directed at the driving task at hand, but at the big buck that had gotten away.

My thoughts were not completely directed at the driving task at hand, but at the big buck that had gotten away. It had been a frustrating thrill to see a hefty eight-pointer just yards away from me, but not being able to get a clear shot due to heavy brush. *Well, I thought, maybe he will be around next year.* Suddenly the brake lights of cars in front of me seized my attention. They had slowed abruptly to avoid a disabled car on the side of the highway. I applied my brakes, but they had little effect in slowing my vehicle. I immediately knew something was wrong, but what? The rear of the cars ahead of me were getting closer and I couldn't stop. My pucker factor had just about peaked out and I was looking for a way around the impending

I was so close to the car in front of me that I could read clearly the bumper sticker.

disaster. The shoulder was blocked by the disabled vehicle, and I found myself facing a guard rail on the opposite side.

By this time, I was panic braking, but my 4 × 4 appeared to have a mind of its own. I was sooo close to the car in front of me that I could read clearly the bumper sticker which said, "If you can read this, you're too d---close. BACK OFF!!!"

Suddenly, as I moved my left foot to assist the right one in ap-

plying more force to the brake pedal, the power reduced, and after a short skid, I regained control of my runaway beast. At this point, traffic had cleared the disabled vehicle and guardrail, allowing sufficient room to pull off onto the shoulder of the roadway. I suddenly realized what a dangerous situation I had experienced since my hands were jerking uncontrollably, but I wasn't scared. The truth is, I was petrified.

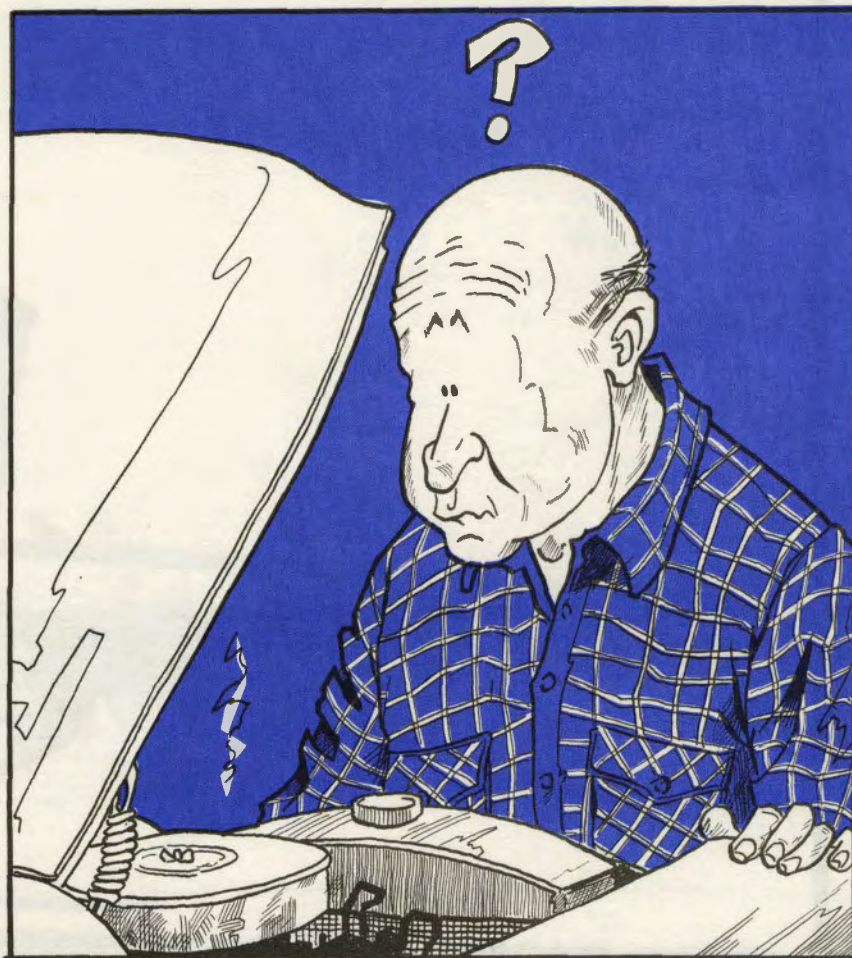
I got out of my vehicle and, after what seemed like an eternity, I shakily opened the hood. I checked the throttle linkage and found that it moved freely. Being a new vehicle did not make the fault analysis any easier. As I opened the door and looked down, the cause of my near-miss hit me right between the eyes. Previously, when I had arrived at the hunting cabin, it had been raining and, in an effort to keep the floor mats from getting soiled, I had turned them over so that the rubber backing was facing up. Apparently while repositioning my big size 12's during the drive home, I had unintentionally jammed the accelerator in the down position. Sure enough, when I placed the accelerator down and moved the mat over, it overlapped the pedal. The shape and stiffness of the mat caused it to remain in place, restricting the accelerator's movement. When I returned the mat to its original position and started the engine, everything worked fine.

In retrospect, when I turned

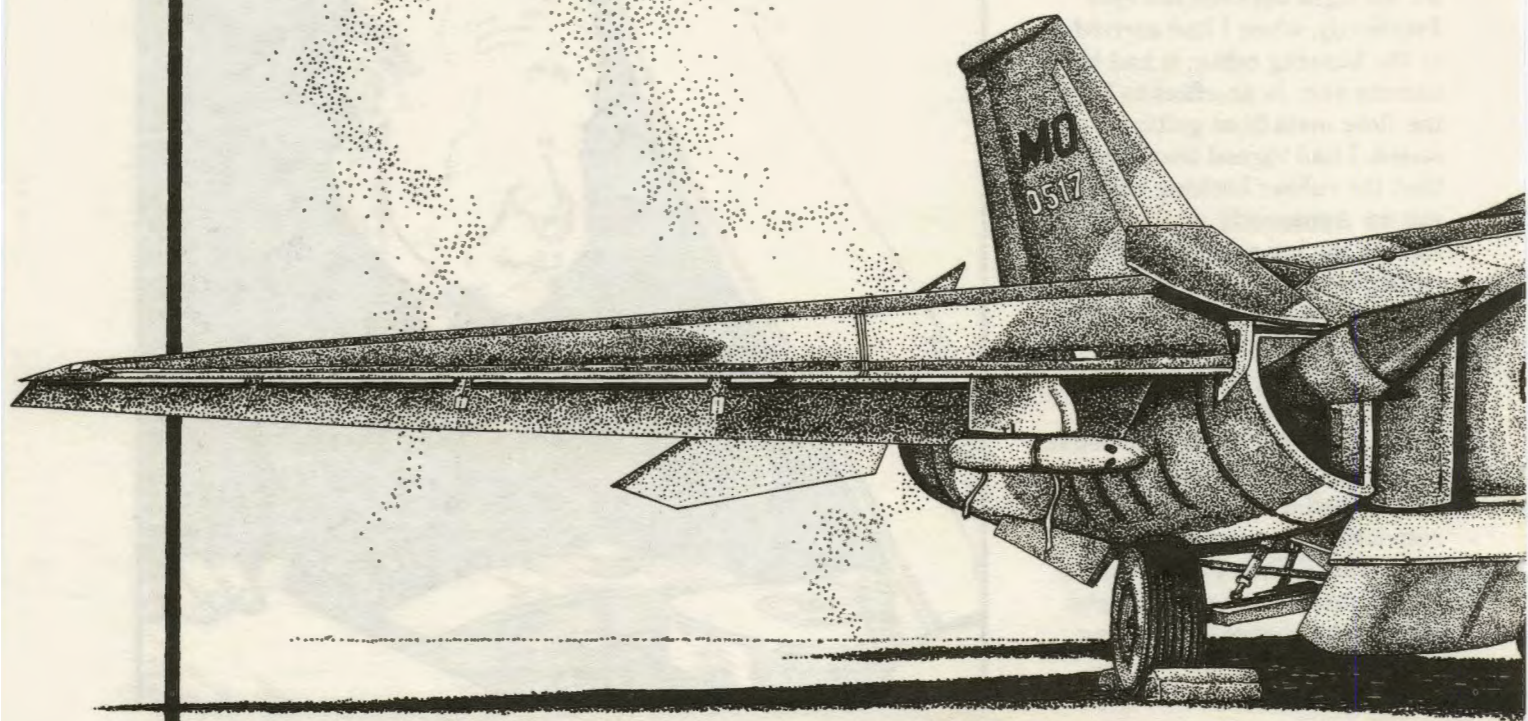
over the mat, I should have ensured that it did not interfere with the accelerator's free movement. Task and/or change analysis, forethought, attention to detail, etc. are familiar terms to all of us. Sometimes we just forget to include them in our everyday activities. They don't just belong in our work environment. If we could only remember to ask ourselves, "What happens if . . . ?" This simple question, if answered properly, can save lives and reduce our losses. Before you

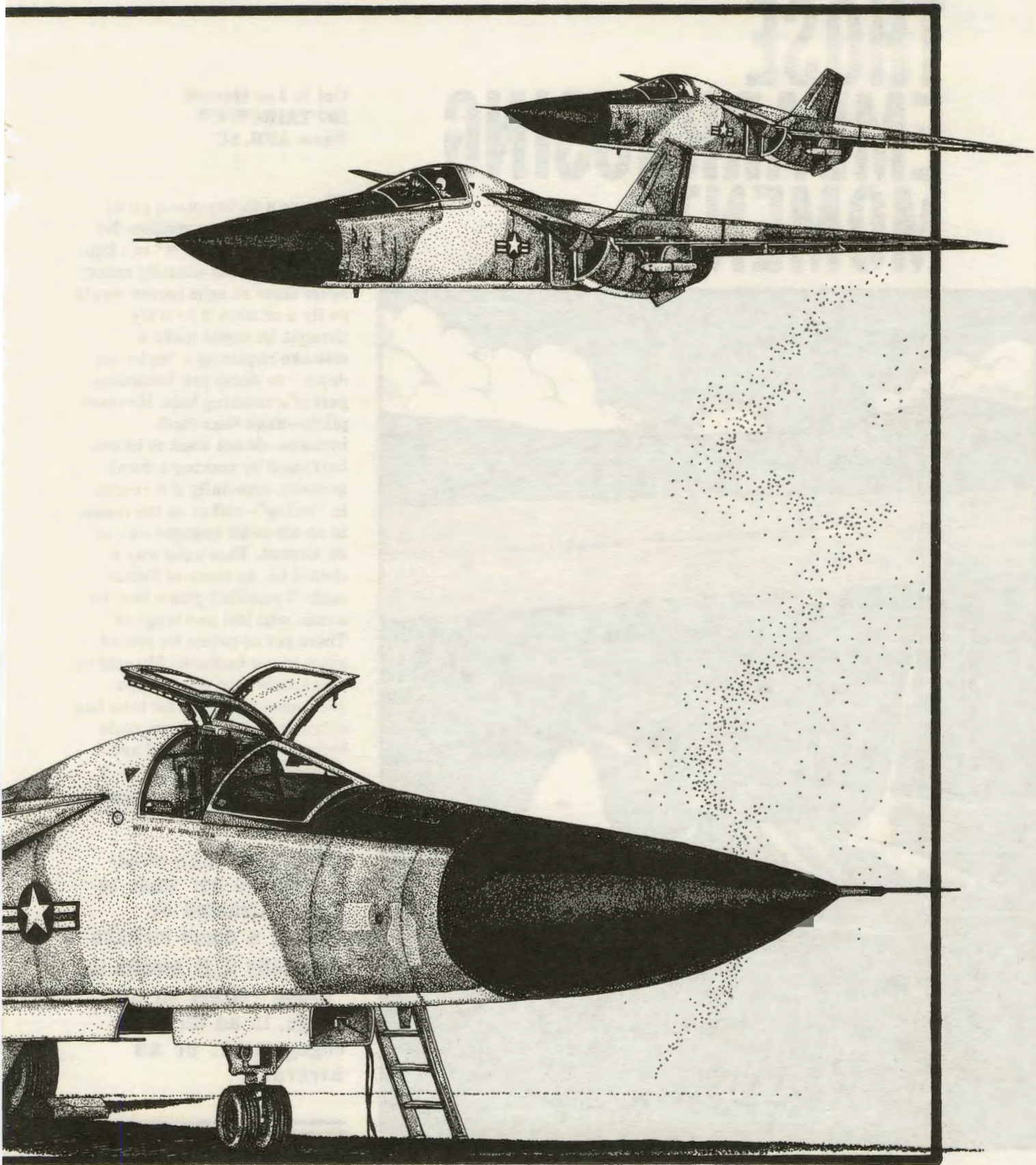
If we could only remember to ask ourselves, "What happens if ... ?"

place yourself in a questionable situation, stop and ask yourself what could go wrong from the actions you've taken or some changes you've made to your normal routine. ➤



F-111 AARDVARK





THOSE EMBARRASSING MOMENTS

Col A. Lee Harrell
507 TAIRCW/CV
Shaw AFB, SC

I have a theory about pilots and mishap prevention. No pilot truly believes "it" can happen to him. That actually makes sense since no sane person would go fly a mission if he truly thought he would make a mistake requiring a "nylon let down," or worse yet, becoming part of a smoking hole. However, pilots—more than most humans—do not want to be embarrassed by making a dumb mistake, especially if it results in "losing"—either on the range, in an air-to-air engagement, or an aircraft. That's the way it should be. As General Patton said: "I wouldn't give a hoot for a man who lost and laughed." There are no points for second place in our business. My goal in this article is to provide you with some more info for your bag of tricks so that you can avoid being embarrassed—and avoid damaging or destroying one of

Pilots—more than most humans—do not want to be embarrassed by making a dumb mistake, especially if it results in "losing"—either on the range, in an air-to-air engagement, or an aircraft.



our too-few aircraft.

This article is not about dramatic, life-threatening mishaps—but it is about mishaps which have destroyed and damaged far too many fighter aircraft throughout the TAF. The subject is hydroplaning—not the well-known, high-speed, dynamic hydroplaning, but the lesser known varieties: viscous and reverted rubber hydroplaning.

A recent Class A landing mishap destroyed one of our aircraft—at a speed that was lower than the posted speed limit on many of our bases! How could that happen? The only rain was a light drizzle with no standing water on the runway. The runway was grooved, the aircraft was in perfect condition, and the pilot was not a novice; he had over 1500 hours of flying time.

One of the reasons it happened is that we have not done a very good job of teaching our pilots about the hazards of all three kinds of hydroplaning. Almost all of our instruction has been limited to dynamic hydroplaning; yet, we have tended to use the generic term “hydroplaning” when we mean dynamic hydroplaning. This may sound academic until you read the F-16 Dash One which states that “although possible, hydroplaning is not expected below 125 knots.” That may be true about dynamic hydroplaning, but viscous and reverted rubber hydroplaning are possible at one-tenth that speed. Therefore, today’s tutorial:

There are three kinds of hydroplaning. Dynamic

hydroplaning is the most familiar. It is a relatively high-speed phenomenon and requires measurable water on the runway. Viscous hydroplaning normally occurs at slower speeds, characteristically in the last 1500 feet of the runway as the pilot attempts to turn off the runway. This 1500 feet is also the touchdown zone for the op-

As the tire skids on the pavement, the heat buildup cause a pocket of steam to be formed under the tire.

posite runway and will have rubber deposits, white paint, and contaminates such as JP-4 on it. *Very little water* is required to support viscous hydroplaning. A mist similar to the morning dew (1/1000-inch) is adequate! Reverted rubber hydroplaning often follows one of the other types of hydroplaning since it requires the tire to be completely stopped. As the tire skids on the pavement, the heat buildup causes a pocket of steam to be formed under the tire. This in turn heats the cured rubber of the tire to the point where it “reverts” back to its natural, uncured state. Uncured rubber is very soft and quickly forms rubber beads similar to ball bearings. The combination of the reverted rubber and the pocket

of steam will support hydroplaning down to 10 knots. If both your tires enter reverted rubber hydroplaning, it is very unlikely that you can do anything to re-establish effective braking; you are a passenger. So how do you not become a passenger? Read on.

We, TAC, have got to provide you, the pilot, with good, safe runways. And if we have one/some that are marginal, you need to know about it. The Air Force Engineering and Services Center at Tyndall AFB, Florida, does in-depth analysis of the stopping ability (coefficient of friction, M_u) of our runways. Their survey of the mishap runway showed that, while the runway was not unsafe, its surface had been smoothed by 3 years of wear to the point where they recommended warning pilots to “expect viscous hydroplaning” when the runway was damp. This warning was placed in the FLIP IFR Enroute Supplement. Like many pilots, I must admit that I didn’t read the Enroute Supplement for my home base. I do now.

Let’s look at the effect of runway grooving on hydroplaning.

Grooving tends to reduce the likelihood and mitigate the severity of all three types of hydroplaning.



THOSE EMBARRASSING MOMENTS

Grooving tends to reduce the likelihood and mitigate the severity of all three types of hydroplaning, not just dynamic hydroplaning. The FAA has elected to groove the entire length of all its instrument runways. Unfortunately you will be flying off runways that have not been grooved. Many of our runways are asphalt with ungrooved concrete touchdown zones! Some of our concrete runways are fully grooved—except for the touchdown zones. (This is a holdover from a previous belief that grooving touchdown zones would damage aircraft tires.)

This article, along with changes to UPT and RTU academics, Dash One changes, and changes to the Instrument Refresher Course (IRC), should help our pilots understand the potential hazards of hydroplaning. That's what the "system" can do for you. Now, what can you do for yourself?

First: Preparation. Remember that both viscous and reverted rubber hydroplaning can occur in no more than a misty condition. Know the condition of your landing runway. Has there been any precipitation? Is the runway grooved? The entire length? How bad are the rubber deposits?

Stan/Eval: Have you highlighted local hazards in a document that all pilots must read? **Pilots:** Do you *really* know what your anti-skid will and will not do for you? If you have one, take a look at your ground speed indicator at some safe point

towards the end of your landing roll; how fast are you really going?

Second: Recognition. If there is *any* moisture present, change mental gears from your day VMC techniques to your slippery runway techniques. **SLOW DOWN EARLY**—before you get to that last 1500 feet. Don't let a misplaced concern for the pilot behind you—or complacency—trap you into approaching the turnoff above taxi speed. Don't give away concrete by clearing to the cold side too soon. If you have a hook, don't let false pride send you off the runway; put it down well before the last cable goes under your nose at mega-knots.

Third: Get the word out. There are numerous unreported near misses, close calls where pilots became hydroplaning passengers, but, due solely to luck (or a sturdy aircraft), no damage was done and the incident was not reportable. Very few pilots know about these near misses. If you slipped and slid, someone else is likely to and, if they aren't as lucky as you, we could lose another valuable combat aircraft. There is no penalty for honest mistakes or near misses. Don't let your ego prevent you from "fessing up." You may save the next guy or an aircraft.

Let's quit making it so easy for the enemy by needlessly destroying our aircraft: **SLOW DOWN** when it's (even a little) wet. Aim high. ➤

If you have a hook, don't let false pride send you off the runway; put it down well before the last cable goes under your nose at mega-knots.

TAC

GROUND SAFETY AWARD OF THE QUARTER

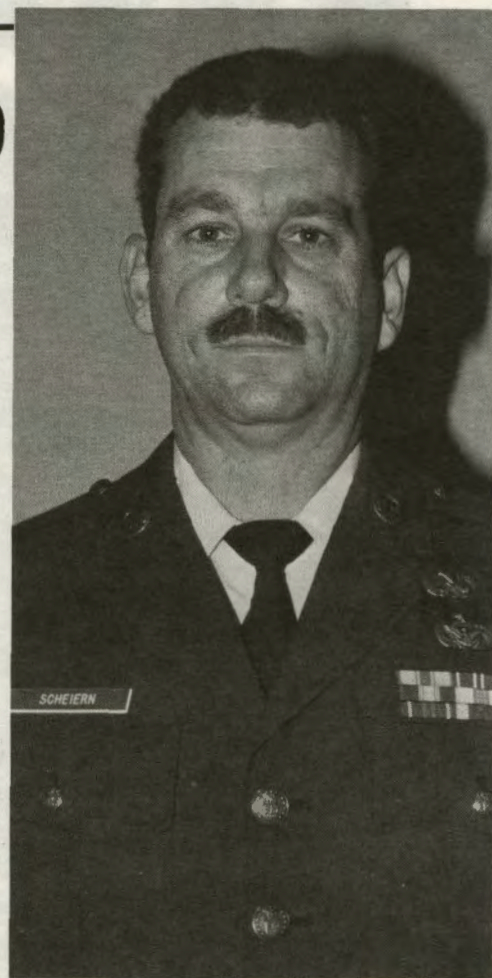


Sgt Terry L. Scheiern's sustained superior performance as the 33 CRS Collateral Duty Safety Representative has reflected his outstanding professionalism and technical skills. He established an aggressive mishap prevention program through numerous self-initiated programs. For example, he was instrumental in developing a TDY/leave travel kit for use in the case of an emergency. The kits included emergency road markers, flashlight, first aid kit, blanket, and emergency phone numbers. He also promoted the "We Care About You" program by identifying volunteers from each functional area to serve as designated drivers during squadron social events. This was later expanded to a Call-a-Ride program which is used on a continuous basis.

Sgt Scheiern has used his artistic abilities to create many eye-catching and interesting

visual aids to help promote mishap prevention within the squadron. The use of these visual aids and a weekly flyer, developed by Sgt Scheiern, have made a definite impact on unit safety awareness. During periods of high mishap potential, he conducted and organized mishap prevention and safety briefings for all assigned personnel, with their family members also invited to attend. Sgt Scheiern arranged for guest speakers from the local area to discuss topics such as home safety, poison control and defensive driving. As the safety representative, he has undertaken the task of scheduling and monitoring safety-related personnel appointments including hearing protection and fire extinguisher training, resulting in a zero no-show rate.

With the recent requirement to establish a supervisor safety folder, Sgt Scheiern organized



SSgt Terry L. Scheiern
33 CRS, 33 TFW
Eglin AFB, FL

the shop-level safety management books and included the safety folder. His branch and shop-level management books are models for the wing.

Sgt Scheiern's dedication and ingenuity have made a valuable contribution to the mishap prevention program within the 33 CRS and the 33 TFW. His outstanding dedication and unrelenting safety efforts have earned him the TAC Ground Safety Award of the Quarter.



Sgt John R. McGinnis
833 AD/SEG
Holloman AFB, NM

“What happened to me? Where am I?” Bill asked himself as he woke up lying in a room with unfamiliar surroundings. The night before he had been sitting around a campfire,

playing the guitar, and having a few laughs with some friends. Now he was in the intensive care unit with various tubes attached to his body and miles of bandage wrapping his head, face and neck.

What happened to Bill? Let's go back a few hours to the day before. He and his friends had gone hunting without much success. Then, shortly before returning to the campsite, Fred had an idea. *If each one of us carried one*

of the rocks from the creek, we'd have a really good fire area at camp. With that plan in mind, each member of the group picked up a large rock and trudged back along the path to the campsite.

Hamburgers, baked beans and something to drink—a typical camping menu—signaled the end of the hunting day. Now it was time for a little music and some tall tales.

“You know,” said Pete, “this is

They had good intentions of making their camping trip a safe and fun one, but something went wrong when one of the large rocks at the campfire blew apart like a bomb.

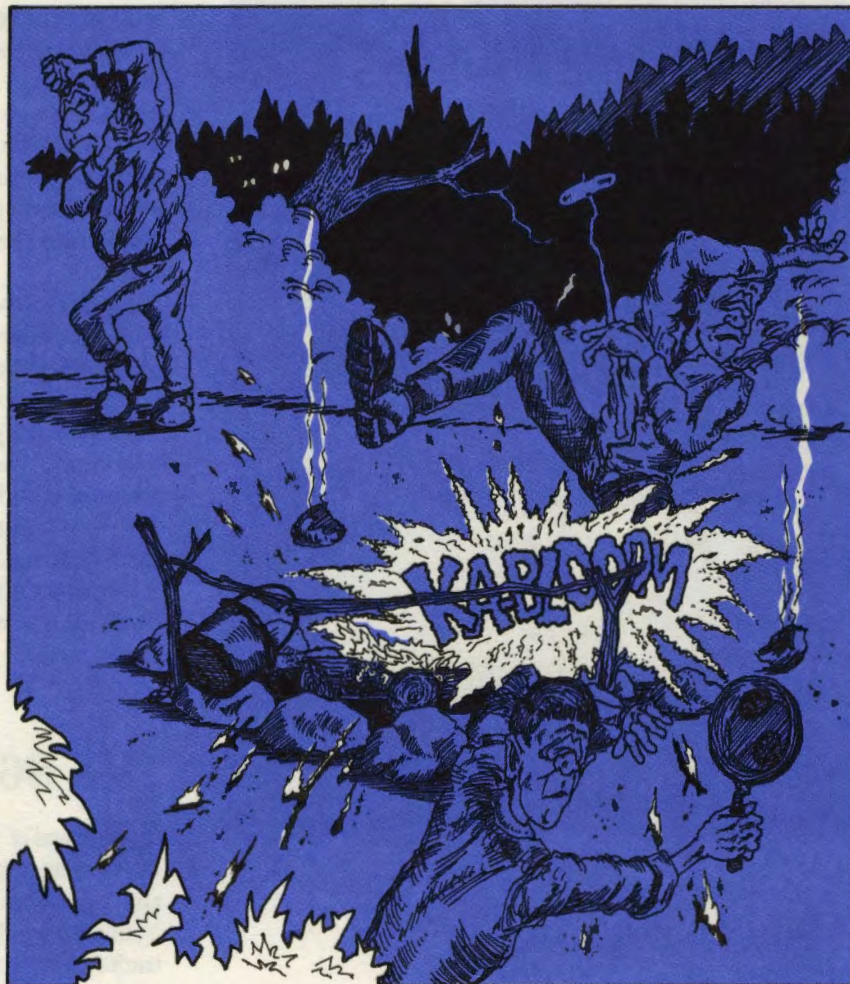
just like the TV commercial. 'It doesn't get any better than this'."

Actually it couldn't have gotten much worse. They had good intentions of making their camping trip a safe and fun one, but something went wrong when one of the large rocks at the campfire blew apart like a bomb. What could have caused it?

When Fred lifted the first rock out of the creek, he had a good idea to make a large fire area much safer, but he'd had no idea that there were water pockets in the rock. As the night went on and the rocks got hotter, the water inside of them began to boil. Without an escape route for the steam that was created, the rock just blew apart.

When you head to the woods, it's good to be prepared and expect the unexpected.

We're not all survival experts when we head to the woods for



an outing. When you head to the woods, it's good to be prepared and expect the unexpected. The following tips could help you have an enjoyable time in the great outdoors and possibly prevent a tragedy.

— Pack a first aid kit in your camping gear. Make it as complete as your budget will allow for the kind of camping that you do.

— Review procedures for treating bites, fractures, scrapes and cuts.

— Know how to identify poisonous snakes and know the simple trailside procedures for temporary treatment.

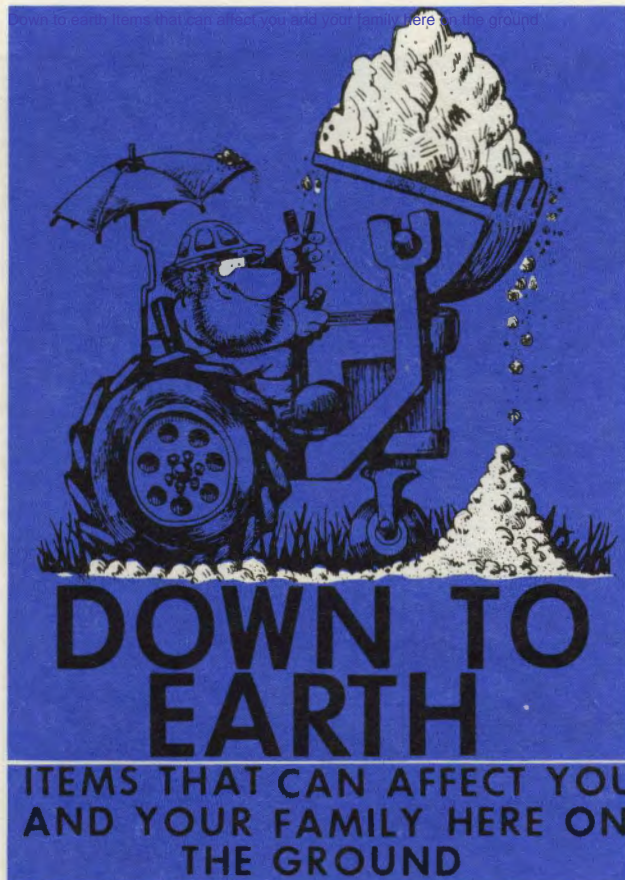
— Learn how to identify poisonous plants.

— Never eat leaves or berries unless you are sure of their identity.

— Always ventilate any enclosed space that you are heating with an open flame.

— Keep off high, open ground and away from lone trees during thunderstorms.

— Consider enrolling in a first aid training course and a compass training course. In an emergency, knowledge is everything. Like the Boy Scout motto, "BE PREPARED." ➤



Model rocketry done wrong

A member of TAC was interested in model rocketry and decided to work on some projects in that area. There was nothing wrong with that, but there were a lot of things wrong with the materials and techniques he used. This



individual decided to pack smokeless gunpowder by hand into an expended .357 Magnum casing which he intended to use as an initiating device for his homemade model rocket. In the process of doing that, the gunpowder was ignited by friction, causing the casing to explode in his hands. He suffered serious injuries to three fingers on both hands and lacerations to both the upper chest and neck.

If you're interested in a hobby like model rocketry, there are companies which produce safe, prepackaged rocket motors that you can use. Don't be deceived into thinking that you can manufacture your own rocket engines down in the basement. There have been countless people in the past who have thought that making their own rocketry materials was a safe way of pursuing their hobby. Unfortunately, they suffered injuries or death as a result. Make sure the first launch you watch is of your model rocket, not you.

The \$6500 oil change

Recently two pilots with plenty of time to spare decided to change the oil in one of their personal vehicles, a Porsche, at the base hobby shop. After lowering the lift to eighteen inches above the floor and adding oil, it was time to pressure check the system and warning indicators by running the engine. As the owner stretched in through the window, he turned the key to the On position with his left hand and with his right hand started to disengage the transmission which was in first gear. Just as he thought to ensure that the transmission was in neutral, his footing slipped, causing his left hand to engage the starter switch. The engine started immediately, causing both the car and the driver to be propelled forward off the lift and across the shop where the car finally stopped when it hit another lift. Fortunately no one was injured, but pride and pocketbook were severely stretched to the limits.

How many of the following unsafe acts did you detect in this scenario?

- Failure to properly park the vehicle on the lift.
- Emergency brake not engaged.
- Reaching through the open window to start the vehicle.
- Failure to ensure proper footing in the work area.

- Individual not inside vehicle when starting the engine.
- Failure to ensure that transmission was not in neutral when starting the engine.

We were extremely fortunate that no one was standing in front of this vehicle and that nothing more serious than the vehicle damage occurred. Working on your automobile or truck with the use of a lift is nothing to be taken lightly. There should be a checklist available for using a vehicle maintenance lift, especially in a base auto hobby shop. When all else fails, use your head.

Inattention hurts

One of our TAC military folks was using the jointer portion of his home woodworking shop system. The system came with written instructions that specifically require the use of eye

protection, hearing protection and push blocks or sticks when using the equipment. Of course, you've got to *read the instructions* first in order to know what they say and then you've got to *follow them* for them to do you any good.

This fellow wasn't using any of those safety items at the time of his mishap. With twenty years of experience, he probably felt all of that stuff was just for beginners. Wrong! Since he didn't feel a push stick was feasible with the piece of wood he was working on, he pushed it through the jointer with his hands. When a tape measure was vibrated off the machine and fell to the floor, the man looked away from his work and lost the first joint of one finger as it came in contact with the cutting blade.

No matter how much experience you've got on power equipment, at home or in your Air Force workplace, *read the instructions* and *follow them*. If you don't, a lost finger or much worse could be the result.



TAC OUTSTANDING ACHIEVEMENT IN SAFETY AWARD

When several users of the MHU-141 munitions handling trailer noted that the brake reservoir intermittently worked itself loose, TSgt James E. Lee studied the problem, identified it to the item manager, and submitted a suggested interim fix which will be adopted by AFLC as a corrective action Air Force-wide.

On another occasion, Sgt Lee realized the possibility of losing 20mm rounds from the ammunition loading module during transport; so he applied a strip of Velcro to the door

edges to seal each compartment and prevent inadvertent opening of the module doors. This simple idea has contributed to the wing FOD program, munitions accountability and ground safety. His actions have encouraged others to initiate suggestions for improvement.

Sgt Lee's positive influence has created a safer and more efficient working environment for the 27th Combat Munitions Unit and earned him a TAC Outstanding Achievement in Safety Award.



TSgt James E. Lee, Jr.
1 EMS, 1 TFW
Langley AFB, VA



Giving them enough room

A load crew chief removed two BDU-33/DB practice bombs from the munitions holding spot inside a hardened shelter and placed them 28 feet outside the shelter so munitions delivery



could pick them up for turn-in. He then entered the driver's door of the weapons flight vehicle, started it and made an immediate turn to the left. Unfortunately, he misjudged the distance between the BDUs and the vehicle's front, running over the BDU tail fin assemblies.

Munitions certainly aren't the only thing that you're liable to drive over around the flight line and munitions storage areas if you're not looking. "See and avoid" applies no matter what you're doing.

Wiring it right

A weapons load crew was tasked to upload an F-4 aircraft with CBU-58 AB munitions using an MK 339 Mod 1 fuze. The preparation and upload of the first dispenser were accomplished without any problems. While the second CBU-58 dispenser was being picked up, the load crew chief detected that the arming wire was routed on the wrong side in order for it to be loaded on the shoulder station of the multiple ejector rack. He removed and improperly routed the arming wire through the lower set of dispenser eyelets directly to the impeller band stud, omitting the primary release pin. The dispenser was then loaded onto the aircraft. Crew member two then performed the fuzing procedures for a prefuzed dispenser by removing the slack and cutting the excess arming wire. He then pulled the safety pin as required by the T. O. When he did, he heard the primary timing mechanism activate. All personnel were immediately evacuated from the area, and the explosive ordnance disposal (EOD) folks were notified.

EOD discovered that the arming wire was not installed through the primary timer pin hole as required to prevent the timer from functioning when the safety pin was removed. The fuze was subsequently safed and the dispenser removed for return to the storage area.

The primary cause of this incident was simple failure to follow the tech data. The other cause was a failure on the part of the other team members to pay enough attention to the incorrect wiring on the munition being loaded.

TAC WEAPONS SAFETY AWARD OF THE QUARTER

TSgt Mark A. Davis has been a driving force behind the 27th Aircraft Generation Squadron's effective weapons safety program. With a high degree of dedication and perseverance, he works to combat complacency and maintains his program at a highly effective level that enhances safety awareness and minimizes weapons and ground mishaps.

As the chief weapons academics instructor in the Weapons Standardization Section, Sgt Davis ensures that his classes target the importance of safety in working with both conventional and nuclear weapons, and the recognition of hazards. He developed a visual aid slide presentation on the functions, safing and loading of all munitions loaded in Weapons Load Training, and the potential hazards present from both munitions and aircraft. The result of his instructional efforts is a firm foundation of explosives safety education and knowledge.

Sgt Davis plays an active role in mishap prevention as the 27 TFW additional duty weapons safety NCO. Since his first spot inspection, he has maintained an aggressive inspection pace. This quarter, he performed 26 flight line task evaluations of weapons loaders. Fifty-eight postload inspections on 604 bombs uncovered 11 major safety violations which he corrected on the spot. On a daily basis, he watches for any trends that may be developing in the discrepancies,

but one month each quarter he conducts spot inspections on all duty shifts for that month. This evaluation generates data for analysis of discrepancies on swing shift and detects any negative trends and problem areas. As a result of Sgt Davis' hard work, both during and after duty hours, the 27 AGS can boast a second FY 89 quarter with no reportable weapons mishaps.

Sgt Davis uses every means available to instill an attitude of healthy respect for explosives. He inspects all unit bulletin boards monthly to ensure the

currency of posted weapons safety information "bursts." As editor of the Load Standardization Crew quarterly newsletter, he uses inputs from all safety agencies involved with 27 AGS along with his own comments. This newsletter serves as an excellent medium to provide current, clear guidance and information to all personnel.

Sgt Davis' outstanding leadership, ingenuity and hard work have contributed markedly to the 27 TFW weapons safety program, earning him the TAC Weapons Safety Award of the Quarter.



TSgt Mark A. Davis
27 AGS, 27 TFW
Cannon AFB, NM

SO YOU ALWAYS WANTED
YOUR OWN

"BIG BULLET"



TSgt Rondia White
33 TFW/SEW
Eglin AFB, FL

Ever so often, one of our troops finds it irresistible to carry home a 20mm practice round for a souvenir, conversation piece, or just to impress their friends. But, let's stop for a minute and think about the kind of impression you could make.

That innocent-looking chunk of brass and blue pig iron contains a few nasty surprises for you. First of all, it was *designed* to send an 0.8-inch diameter, 3-inch long projectile weighing a half pound several thousand feet away. The brass casing, if not contained in a gun barrel, will shatter into extremely sharp shrapnel.

Another neat (?) feature of this

"Big Bullet" is that it can easily be detonated by a small electrical charge or even by concussion under the right circumstances. For example, the electricity you generate by walking across a carpet (you know, when you touch the doorknob and watch the sparks fly) can bring one of these 20mm rounds to life. Should I say more? Think about the "large" impression this half pound of high velocity steel will make in, or on, your friends.

So, you still want to own a "Big Bullet"? Stop a moment and think about the accountability of these munitions. Ammunition rounds are controlled items and must be accounted for. Taking an ammunition round for your own personal use will only get you in **BIG TROUBLE**. First of all, the Security Police and the Office of Special Investigations (OSI) will get involved; and what was once intended just for fun could be your ticket to a Federal penitentiary. The bottom line is—that "Big Bullet" could cost your career. . . or your life.

Every year someone is injured or killed playing with explosives. That "Big Bullet" is not a toy. Find something else less dangerous with which to impress your friends. If you possess one of these 20mm rounds or know where one is hiding, do everyone a favor and turn it in. If you need assistance, you can contact your First Sergeant, Security Police, EOD, or your weapons safety representative.

It's up to you. A "Big Bullet" equals "Big Trouble." ➤

TAC

OUTSTANDING ACHIEVEMENT IN SAFETY AWARD

While working on one of the unit's F-16 aircraft, MSgt James R. Morrison and TSgt Paul S. Woodard, Jr., discovered a serious problem with the emergency canopy jet-tison system. During phase and unscheduled maintenance, canopy hook levers were found seized to the bolt and lever support. Although this item is not required to be inspected by the technical data, these egress technicians immediately realized the seriousness of this problem and the implications if it existed in other F-16 aircraft.

Sgts Morrison and Woodard immediately notified the local General Dynamics technical representatives and Quality Assurance personnel to suggest a one-time inspection of unit aircraft. The subsequent inspection revealed nine out of twenty aircraft were affected by this condition. Actions were implemented to repair the defective bolts, bushings, and levers and a crosstell message was sent to all F-16 units and depots with a field service report to General Dynamics. These actions generated a thirty-day safety TCTO requirement to inspect and replace corroded canopy lock bolts on all F-16 A/B aircraft. Several units have since reported the same problem with their jets.

Due to the professionalism of Sgts Morrison and Woodard, a potentially disastrous defect in the emergency escape system



MSgt James R. Morrison



TSgt Paul S. Woodard, Jr.

**187 CAMS, 187 TFG
Montgomery, Alabama**



has been corrected and the safety of all F-16 aircrews increased, earning Sgts



Morrison and Woodard the TAC Outstanding Achievement in Safety Award.



TAC COMMANDER'S AWARD FOR FLIGHT SAFETY

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

the lowest command-controlled Class A and B flight mishap rate of active units in a calendar year. The 1988 award goes to First Air Force.



1988 USAF SAFETY AWARDS



The Air Force Inspection and Safety Center has announced the recipients of the 1988 USAF safety plaques for flight, missile and explosives safety.

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

474 TFW
Nellis AFB NV

58 TFW
Luke AFB AZ

33 TFW
Eglin AFB FL

318 FIS
McChord AFB WA

347 TFW
Moody AFB GA

23 TFW
England AFB LA

35 TFW
George AFB CA

Missile safety plaques are awarded to organizations below MAJCOM level for outstanding achievement and contribution to missile safety. The TAC recipient is:

832 AD
Luke AFB AZ

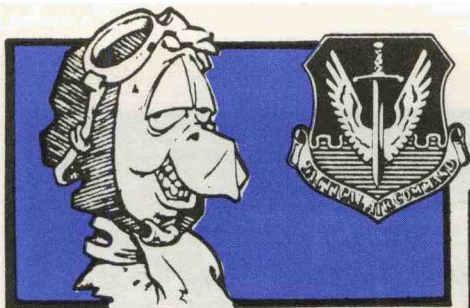
Explosives safety plaques are sent each year to organizations below MAJCOM level for outstanding achievement in, or contribution to, explosives safety. The TAC recipients are:

474 TFW
Nellis AFB NV

347 TFW
Moody AFB GA

Nuclear surety plaques are awarded each year to organizations below MAJCOM level for outstanding achievement in, or contribution to, nuclear surety. The TAC recipient for 1988 is:

347 TFW
Moody AFB GA



TAC TALLY

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

Total			
APR	THRU APR		
	FY 89	FY 88	
2	14	18	
1	4	10	
2/1	11/3	12/0	
0/0	0/0	0/3	

TAC			
APR	THRU APR		
	FY 89	FY 88	
1	9	12	
1	2	7	
1/1	6/1	8/0	
0/0	0/0	0/2	

ANG			
APR	THRU APR		
	FY 89	FY 88	
1	5	4	
0	2	2	
1/0	5/2	4/0	
0/0	0/0	0/1	

AFR			
APR	THRU APR		
	FY 89	FY 88	
0	0	2	
0	0	1	
0/0	0/0	0/0	
0/0	0/0	0/0	

• (SUCCESSFUL/UNSUCCESSFUL)

TAC'S TOP 5 thru APR 1989

1st AF	
CLASS A MISHAP-FREE MONTHS	
104	318 FIS
51	325 TTW
39	57 FIS
18	48 FIS

9th AF	
CLASS A MISHAP-FREE MONTHS	
74	33 TFW
47	507 TAIRCW
22	1 TFW
18	4 TFW
14	347 TFW

12th AF	
CLASS A MISHAP-FREE MONTHS	
43	35 TTW
37	474 TFW
29	37 TFW
25	49 TFW
19	24 COMPW

ANG	
CLASS A MISHAP-FREE MONTHS	
221	110 TASG
196	138 TFG
178	177 FIG
173	114 TFG
137	155 TRG

AFR	
CLASS A MISHAP-FREE MONTHS	
104	482 TFW
94	924 TFG
82	906 TFG
56	507 TFG
43	917 TFW

DRUs	
CLASS A MISHAP-FREE MONTHS	
21	USAFTAWC
13	USAFTFWC
7	28 AD

CLASS A MISHAP COMPARISON RATE

(CUMMULATIVE 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					
	FY 88	6.4	3.4	3.0	2.7	2.6	3.3	3.0	3.1	3.3	3.2	3.0	3.4
ANG	FY 89	0.0	0.0	1.5	2.3	2.9	3.2	3.4					
	FY 88	0.0	0.0	0.0	0.0	0.9	2.2	2.5	2.7	2.9	3.0	3.5	3.2
AFR	FY 89	0.0	0.0	0.0	0.0	0.0	0.0	0.0					
	FY 88	0.0	10.6	7.7	5.9	9.5	7.9	6.7	5.8	7.5	6.8	6.0	5.5
Total	FY 89	1.2	1.8	2.5	2.8	2.5	2.5	2.5					
	FY 88	4.3	2.9	2.4	2.2	2.5	3.2	3.1	3.1	3.4	3.3	3.3	3.5
MONTH		OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP

Fleagle

