TAC ATTACK

MAY 1986

ANGLE OF ATTACK

Springtime not only brings warm and delightful weather, it also stimulates our desire for outdoor activities. It's the time of year for nice family drives in the country or a squadron picnic on the beach that everyone's been looking forward to for so long. One thing's for certain, there's plenty to do outside and, sometimes, more than enough sunshine.

This spring, let's play smart and not let beautiful weather lull us into doing things that could lead to injury or death. It only takes one dumb decision--based on a dare, too much to drink or clowning around—to ruin not just a day but, in some cases, an entire lifetime. If we play smart, safety will take care of itself.

Apart from the beautiful weather, spring offers little joy for the operators. Why? Historically, May has been our worst month for flight mishaps. Our losses during the month of May over the last five years have cost us about a squadron of jets. That's right--a whole squadron.

Another spring event is migration. Deployment planning, preparation and execution take many manhours and drain the best of us. We must also realize that the deployed operation is one of our highest threat areas for flying. Over 50 percent of our ops factor mishaps occur away from home. And there's more.

If you look at who has the mishaps away from home, you find our experienced aircrews leading the pack. The most disturbing fact is that they were almost always in a routine phase of the mission when the mishap occurred. It involved the basic elements of airmanship.

Don't waste time shaking your head and gnashing your teeth--when it involves airmanship, it involves discipline— and that means we need to start using the creative 2x4s available in every unit. You know the ones--they're stamped "Awareness; Fly Smart; Self-Discipline; Tactically Unsound; Our Mission-Nothing Else; I am the Leader, You're #2, Be There; #4-RTB Now; Fly the Jet." These are but a few examples.

Those creative 2x4s have always been within our reach, but some of us chose not to use them for one reason or another. My thoughts are, if you can't take the sting of a well-placed creative 2x4 in peacetime, swung by a flight or squadron member interested in helping you improve your airmanship, you might as well look for another job. The sting of AAA is much more painful and permanent.

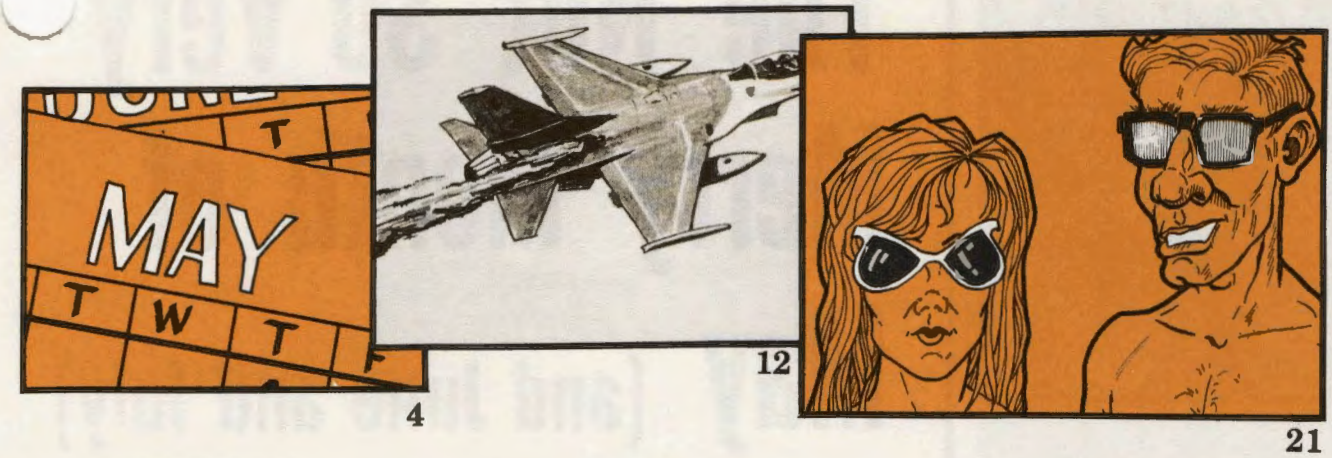
In combat, we won't have time to be polite and ask for performance--it's expected. To have the teamwork so essential in combat, we all need to pick up a creative 2x4 now and then. Let's make this May our turning point. Start swinging.

Edsel J. DeVille

EDSEL J. DE VILLE, Colonel, USAF
Chief of Safety

TAC ATTACK

DEPARTMENT OF THE AIR FORCE



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FEATURES

DEPARTMENTS

TACRP 127-1

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The Not So Very Merry Month of May (and June and July)

With our 7-year history of consistent improvement in mind, 10 Class A mishaps in the first quarter of 1986 is certainly an attention getter. But, if you believe in statistics, the worst could be just around the corner. Recent his-

tory singles out May as the worst month for aircraft mishaps. And there's no slack after that. June and July have consistently been the other "high threat" months remaining in the year. History shows that an average of 10 TAC aircraft bite the dust during these 3 months. The combat capability we lose makes Ivan smile every time we crash a jet; for it's just one less he'll have to face if the balloon goes up.

That's the bad news. Is there any good news to balance it? Sure, statistics don't make themselves. They don't drive what we do. We, the operators, maintainers and supporters, make the statistics—good or bad. This year we need to consider the history of May, June and July, and do e things to see that it doesn't at. Read on and let's look at some reasons for our traditionally high number of spring and summer mishaps, and a few ideas on what we can do to cut down the number of crashes this year.

Four factors stand out in the statistics as prime accident makers. On the mechanical side of things, control malfunctions and engine failures or fires are the heavy hitters. The reasons vary, but consider what deployments, summer heat, sortie surges and supervisory lapses from new people or vacationing regulars could do to your maintenance and equipment.

On the ops side, loss of control and controlled flight into the terrain are the two big nemeses. Two things stand out in loss of control mishaps. The pilots are ically highly experienced, but nishap maneuver is not tactically sound. The "new guy" is not immune, but our "old heads" need to be more attentive to the ROE and mission objectives if we are to control this trend.

Controlled flight into the terrain (CFIT) is more than just collision with the ground. In these cases, our crews have been so involved with accomplishing a normal mission task that they forgot to fly the airplane. The accident potential here is high for anyone with a few hundred hours in his jet and the comfortable feeling that comes with familiarity. The worst of this problem is its insidious nature—you'll never feel the hair on your neck rising like it does when you're disoriented. You must work now to identify those "normal" things in your daily operation which can lead to trouble—range work, defensive LOWAT and instrument flying have all led to recent situations where the crew prioritized a mission task above ground avoidance.

Summertime means deployments—long deployments, short deployments and back-to-back deployments. They consume about 20 percent of our flying time in TAC, but unfortunately result in a disproportionate share of all operator mishaps. Last year half of TAC's 12 pilot factor mishaps occurred during deployed operations. So, when someone mentions deployment, the caution light in your mind should go off. Deployments (including cross-countries) require more, not less, supervision. Too often we find a tendency to ease up on supervision when we get away from the home drome, especially on "just a mini" deployment; these are where most of the deployed crashes occurred. We need the same quality of planning and supervision for each deployment, regardless of size. The three-ship CAS or dissimilar training weekends need the same attention as the "flags." Convince your people that the KIS (Keep It Simple) principle is just as sound today as it ever was. Make sure that "get-home-itis" (in other words, misplaced priorities) during cross-countries and deployments isn't allowed to supersede good judgment.

Convince your people that the KIS (Keep It Simple) principle is just as sound today as it ever was.

With summer also comes the big turnover in people. This means additional time required to supervise and train the new guys, and a corresponding increase in work load. You'll not only find more inexperienced people coming into your unit during the summer, but also a lot of folks that have been around the Air Force awhile and are new to your unit and operation. The track record shows that while we have done well at leading and teaching the young, inexperienced folks, we need to at least consider the cumulative effects of heavy tasking on our more experienced old heads, too.

Summer brings longer days and an opportunity to stretch the work day to its limits. Hot temperatures combined with longer work days increase the

THE NOT SO VERY MERRY MONTH OF MAY

fatigue problem. Add to this a few weekends of work preparing for and deploying your aircraft—and the fact that, during the summer months, the longer days open up the daylight flying window considerably—and you can begin to appreciate the true hazard potential you face. Longer days also mean starting and ending night flying much later than in winter months. Combine all these factors and "cumulative fatigue," or "burnout," among your maintainers and aircrews can become a problem, especially among the mid-level supervisors who are expected to do it, lead it and teach it. This kind of fatigue can't be cured by one night's sleep. It requires more, maybe a few days of leave or a 3-day weekend.

Supervisors should help their people feel comfortable with backing off when the pace approaches "loss of control." They also need to be alert for signs of fatigue. Look for changes in personality: the normally happy guy who's not talking much; the conservative flight lead stepping to the aircraft for his third flight of the day with a worn-out wingman still discussing the detailed, super cosmic scenario they're about to fly; the wingman who seems to repeatedly make small uncharacteristic mistakes; or the dependable crew chief with a wrench in his hand who's staring off into the distance for no apparent reason. Make sure your people drink sufficient water and get adequate rest during the surges of the summer months; and above all, don't be afraid to call time out.

Leadership by example is particularly effective as a means of showing the troops that it's OK to call a knock-it-off on the ground or in the air. Just as importantly, remember that supervisors are people too, and thus subject to the same or greater stresses and fatigue than the worker bees. Statistics from the last years show that old head supervisors (pilots with 900+ hours in the aircraft) have caused a disproportionate share of our mishaps. As a supervisor, you can't afford to have double standards whether it concerns crew rest or pressing on the range. The young guys will do the same things they see you do.

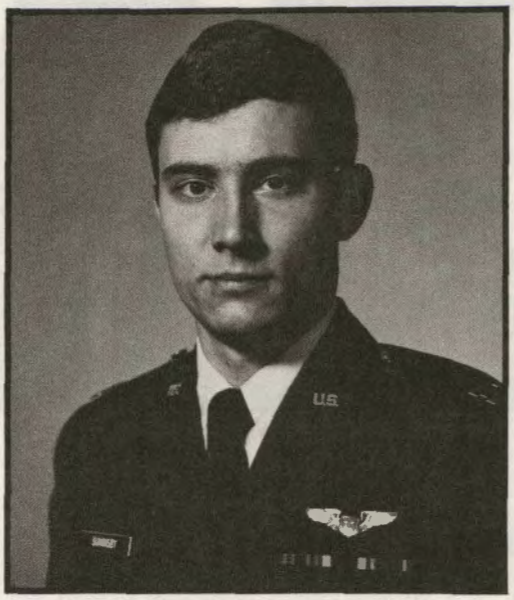
We wish we could tell you that summer mishaps follow more specific trends, but they don't. The fact is, the increase is spread among *all types of pilots*, flying *all types of aircraft*, doing *all types of missions*. No one is immune.

The next three months hold much promise for increasing our combat capability through well-planned, disciplined training scenarios. But we've got our work cut out for us if we are to turn recent history around. Don't increase the risk unnecessarily. In peacetime, pilots without combat experience often equate added risk to realistic training. In truth, you avoid all unnecessary risks in combat—a midair over enemy territory can earn you a tour in a POW camp. Moreover, an aircraft or crew lost in peacetime denies our nation the men and shooting iron needed in wartime. So, while we may not achieve perfection in readiness training on any one mission flown at a lower level of risk, we must never forget that all training stops; all experience is lost when we lose a crew.

Plan smart, work smart, fly smart.

AIRCREW OF DISTINCTION

Capt Van P. Bentley
522 TFS , 27 TFW
Cannon AFB, New Mexico



Capt Robert E. Suminsby, Jr.
522 TFS , 27 TFW
Cannon AFB, New Mexico

Captains Van P. Bentley and Robert E. Suminsby, Jr., were flying a high-speed, low-level mission in their F-111D on 20 December 1985 when a red-tailed hawk struck the nose of their aircraft. The impact shattered the fiberglass radome, allowing the pitot boom to snap back and crack the right canopy while pieces of the radome went into both engines. Forward visibility for both crewmembers was totally obscured by bird remains and a large section of upturned radome.

Captain Bentley immediately began a climb and maintained aircraft control despite severe vibrations, a constant stall warning horn and pedal shaker inputs and loss of all primary and secondary pitot-static instruments. The aircraft also had a strong tendency to roll left. Captain Bentley turned the dampers off, but the left roll could only be countered with significant stick and rudder deflection. As airspeed was decreased, the uncommanded rolling subsided.

Captain Bentley set a safe power setting and wing sweep combination and headed for Cannon. While waiting for another airborne F-111 to join them as a chase aircraft, the left engine compressor stalled and could not be recovered above idle power.

With no forward visibility and no usable airspeed or angle-of-attack indications, the crew decided that the only safe way to recover the aircraft was with a wing approach and formation landing. Although formation landings are not practiced by USAF F-111 crews, it was considered necessary under these extreme circumstances. Following completion of emergency checklist procedures, coordination with the SOF and a controllability check, the crew began a single-engine approach. Due to the idled left engine and reduced thrust on the right one due to FOD, afterburner was required several times during the approach. Both aircraft made a flawless formation landing, after which the leader went around. The mishap aircraft safely rolled to a stop on the runway centerline.

The superior airmanship and outstanding crew coordination demonstrated by Captains Bentley and Suminsby prevented possible loss of life and a valuable combat aircraft.

TAC tips

INTERESTING ITEM

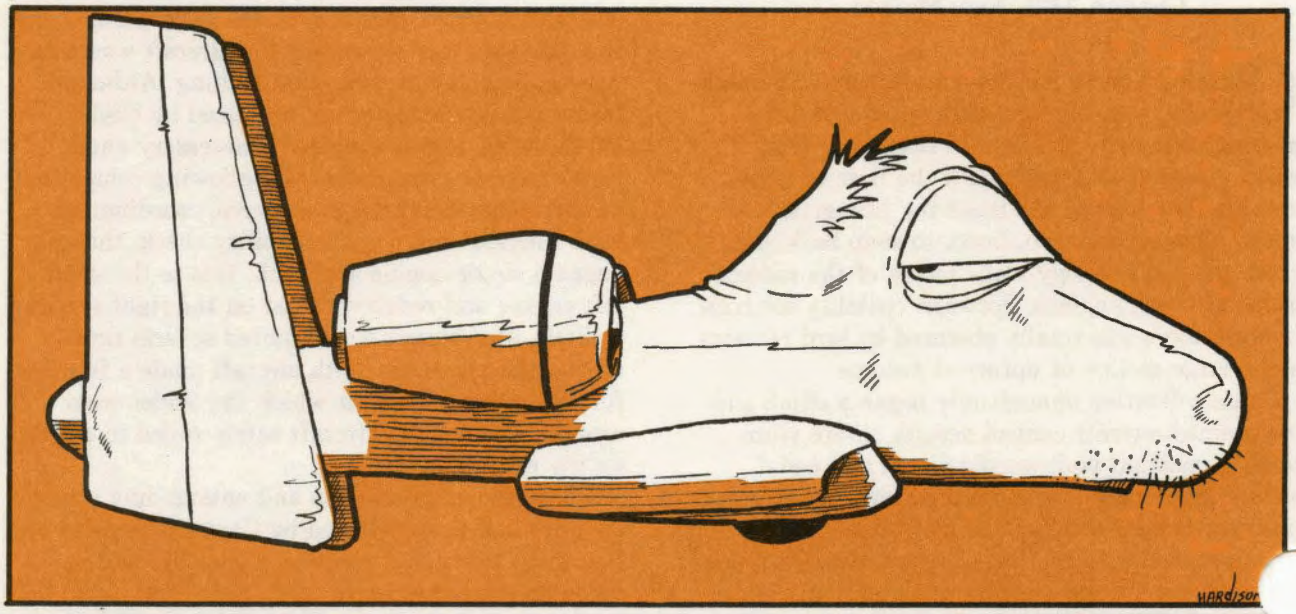
Just a tad off

An A-10 was loaded with wall-to-wall BDUs on TERs and LAU-68 rocket launchers. The first bombing passes on the range went fine, but the first attempt to fire a rocket brought different results. On his armament panel, the pilot had selected station 9, release mode-singles, nose/tail fuzing and the master arm on.

The A-10 pilot rolled in for the rocket pass and pressed the pickle button, but he didn't see the expected smoke and fire from a rocket. When he checked the selected station, he noticed an empty light and, for the first time, saw that "LDGP" was showing in the thumbwheel display instead of the expected "RKT." The other station carrying a rocket launcher was also improperly set.

Both the maintenance specialists and the pilot erred in allowing the LAU-68 to be jettisoned like a bomb. The store display thumbwheels hadn't been set properly according to the A-10 TO, and the pilot didn't follow his Dash 34 preflight or inflight procedures to make sure that the systems were set up properly.

It's an old cliché, but "attention to detail" shou never be taken lightly. There's no question that aircraft and on-board armament systems are complex. That's all the more reason to make sure your ordnance is hooked up right, that the armament system is thoroughly checked out and your switchology is correct the first time to get the ordnance on target.



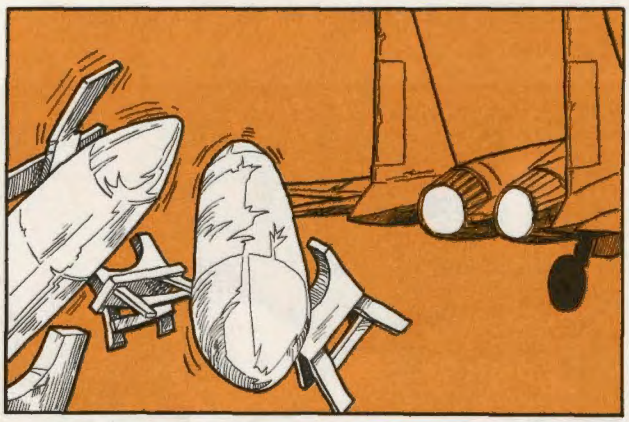
Watch what you're doing

You've noticed several TAC Tips in recent months about what to do with your jet's exhaust. But the message apparently still bears repeating. Two of the main things to be concerned about with your aircraft are where you put it and where your exhaust is going. Running into or over things with an aircraft seems to be a pretty obvious hazard because you can see where you're going or what's obstructing your path.

What you do with your aircraft's exhaust shouldn't be a matter of "out of sight, out of mind" just because you can't see what's back there. It's what you don't see that can cause problems. One way to make sure there isn't something you didn't see is to give the area around your aircraft a good visual check when you first arrive at the jet. Look for anything lying around loose or improperly secured that you're likely to blow away when you pull out of the chocks.

Take a careful glance not only at the area immediately behind your jet but also where your exhaust will point as you taxi out. By doing that, you can prevent incidents such as the F-15 making its initial turn out of parking which blew over two, 600-gallon fuel tanks in an adjacent shelter. Both tanks suffered damage and required repair. On another occasion, a jet pulled out of a parking spot to taxi around for an integrated combat turnaround. The jet's exhaust blew some air-to-air missiles off a trailer sitting adjacent to the parking spot. If there's something in your way—front, back or side—have it moved or secured where there won't be a problem.

Another area for caution with your exhaust is



any run-up for oil purge, bleed air checks or quick check in EOR. Whenever you need to bring an engine up beyond idle power, clear your tail to ensure that a person or vehicle hasn't moved in behind you unannounced.

Finally, manage your power wisely by using a sufficient amount of thrust to start your aircraft rolling and to keep it at the desired taxi speed. Be in idle before you make any turns. There's no need to "gun" the power and then chop your throttles back to idle. That initial blast of raw exhaust is likely to blow rocks and other loose objects around in your wake.

Your exhaust is like the old haircream commercial—"A little dab'll do ya' "—so only use what you really need and use that with care.

A stitch in time

A two-ship of F-16s had planned to return nonstop to their home drome from an exercise site with one inflight refueling en route. When one of the jets ground aborted during the initial rede-

ployment operations, their backup plan required a two-hop trip home instead.

After refueling at the stopover base, the pair of F-16s taxied out for a formation takeoff. Starting their roll in front of a raised BAK-9 barrier, the nosewheel hit the cable at about 60 knots, apparently causing the cable to bounce up and damage an ECM pod mounted on the aircraft centerline.

The main cause of this incident was a lack of thorough flight planning. With the known potential for problems between F-16 centerline stores and engagement barriers, the pilots needed to make special note of any possible trouble areas at their intended landing base.

We put a lot of effort into actual details for navigation and fuel requirements during the flight portion of a mission, but the sortie isn't over until the aircraft is safely back on the ground—chocked—and the engines shut down.

When you've thoroughly planned a mission and then the plan suddenly gets changed, that's the time to look for trouble. When the rhythm of your mission has been broken, extra caution is essential to make sure that Plan Bravo is as thoroughly planned as your first.

A last note: Just because you've been to an offstation operating area or base before doesn't mean you shouldn't check the current procedures the next time you're headed that way. A quick check of the IFR Sup, NOTAMs and other flight planning tools for current information will ensure that you're working with the latest data.

Isn't this good enough?

The main body and computer control group (CCG) of a GBU-12 bomb had been uploaded on an F-111 during a local exercise. The load crew chief prepared to string the bomb arming wire while the number two man fastened the fins to the bomb. Because of a shortage of normal safety pins, the previous load crew had used a piece of arming wire to safe the battery firing device (BFD). That works fine when the safety wire is put in the proper hole.

On this incident, the safety wire had been incorrectly installed in the bottom hole of the BFD where the arming wire was supposed to go. When the load crew chief prepared to route the arming wire, he first removed the substitute safing wire from the BFD without a safety device in the upper hole. What happened? The battery device fired just as advertised.

This was the second load crew that worked on the munition since it had been removed from storage. The bomb had already been loaded and unloaded once that day due to a frag change. Because of that, at least two separate crews had the opportunity to notice the discrepancy and correct it before a serious problem occurred.

Working together as a team should be a relationship based on trust, but it also requires that we look out for each other and insure that someone else's mistake doesn't sneak up and bite us. When you accept a job from someone else, give the area a good once-over to make sure something obvious hasn't slipped through the crack. The question isn't "Who made the mistake?" but "How can I make sure that this job is done correctly in the future?" Make sure you're part of the answer, not the problem.

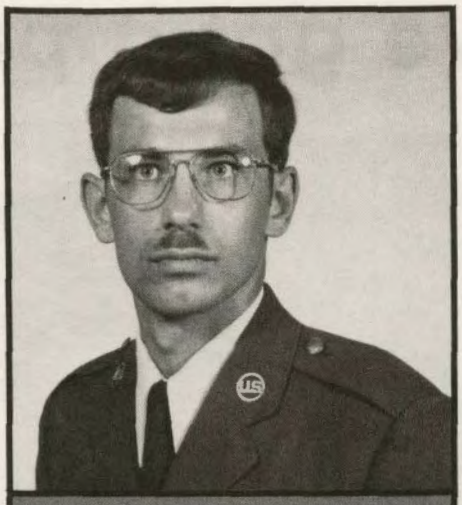
TAC SAFETY AWARDS

CREW CHIEF SAFETY AWARD

While working on his aircraft, Staff Sergeant Jeffrey A. Moening noticed smoke coming from the number one engine of an adjacent aircraft; so he immediately went to assist the other crew chief. When he got to the aircraft, Sergeant Moening noticed that fuel wasn't dumped after the engine was shut down, which created an internal fire hazard. Sergeant Moening told the crew chief to call the fire department.

Sergeant Moening then advised the student pilot to motor the engine in an effort to blow out any fire and dissipate fuel fumes. The pilot then exited the aircraft, but flames began to appear in the tail pipe. Sergeant Moening climbed into the cockpit and extinguished the fire by again motoring the engine.

The fire was out by the time the fire department arrived. Sergeant Moening's knowledge, experience and quick action kept a valuable aircraft from being seriously damaged.



SSgt Jeffrey A. Moening
355 AGS, 355 TTW
Davis-Monthan AFB, Arizona

INDIVIDUAL SAFETY AWARD

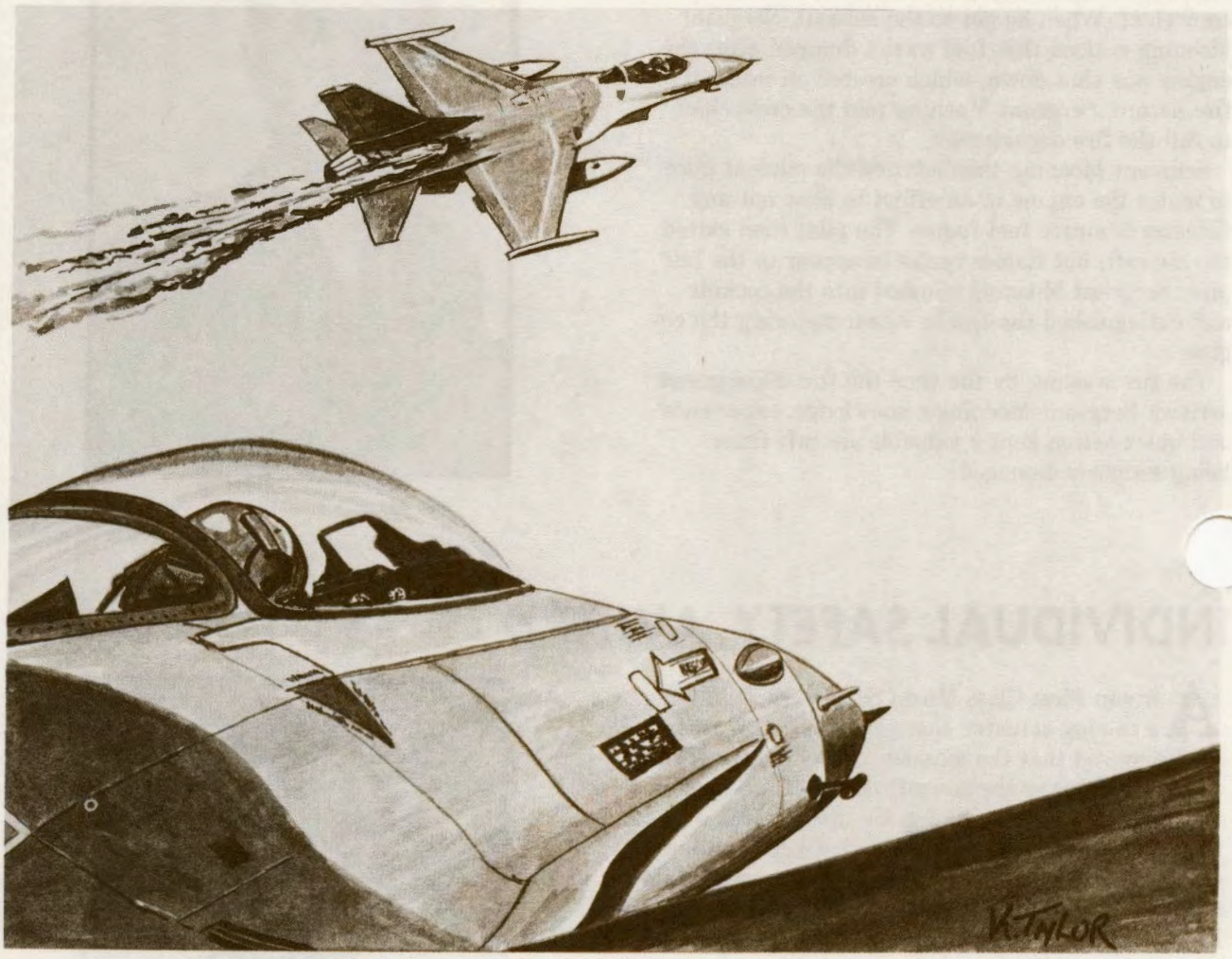
Airman First Class Moses Salas was completing a canopy actuator change on an F-16C when he discovered that the manual control handle used to raise and lower the aircraft canopy from inside the cockpit was not working. He investigated further and found that the engaging key would not enter the keyway, which would prevent a person inside the cockpit from manually opening the canopy. During a ground emergency with the loss of electrical power, a pilot would have to ballistically jettison the canopy as his only method of escape, which would increase the potential for a mishap.

Airman Salas's careful analysis of this defect prompted a one-time inspection of all F-16 C-model aircraft, both at Luke AFB and throughout the fleet. Locally, five aircraft were discovered to have the same deficiency. Several more defective drive units were found on production-line aircraft.

Thanks to Airman Salas's conscientious desire to enhance quality maintenance, production-line in-:tion procedures were established by General Dynamics to ensure the quality of egress system components.

AIC Moses Salas
58 CRS, 58 TTW
Luke AFB, Arizona

"HEAD DANCER–CYCLONE 1, I've got a problem"



Maj Denny Granquist
HQ TAC/DOXD

It's daybreak at approximately 55 degrees north latitude, 30 degrees west longitude. You're at 30,000 feet eastbound in an electric jet on the squadron's European deployment. Master caution light is on steady. What are you going to do? How will you handle the problem? What type of assistance can you depend on?

Hopefully, this scenario is an emergency procedures drill administered by a squadron instructor in the cockpit trainer prior to your deployment. If it's the real thing, you'd better have a plan. This article is designed to assist you, the operator, in preparing for a safe ocean-crossing deployment. I will address two possible malfunctions that will significantly affect your flight and some procedures and techniques to keep in mind.

What happens if you have a slow feeding fuel tank? Your fuel flow is 500 pounds/hour mor[illegible] than the flight profile requi[illegible]

uld you be worried? How h fuel is required to divert to Keflavik? A thorough understanding of the flight profile provided by HQ TAC/DOXD or 2d Aircraft Delivery Group is required. If you listened to the flight briefing without knowing what *your* particular flight plan calls for, you're asking for trouble. The Tactical Air Command Aircraft Profile (TACAP) is an automated means of providing flight plans for deployment tactical fighter aircraft. Aircraft performance information is combined with the applicable climatology or forecast wind data and processed into a flight plan. The result is an ATC approved route for a normal receiver to tanker ratio of 6:1 and includes provisions for air refueling abort bases. The profile closely approximates a Great Circle route adjusted for the abort base proxy and aircraft performance. Although the flight plan is self-explanatory, let's look at the refueling abort base information in detail (see profile excerpt).

(1) *Leg distance* (646 NM) is figured from the missed refueling abort point (5917 N, 4409 W) to the abort base and is Great Circle if greater than 300 miles. (2) *Abort time* (1+35) is the flying time from the missed refueling location to the abort base. (3) *Abort fuel* (5644 lbs) is the fuel used from the missed refueling point to the abort base. (4) *Abort fuel remaining* (2475 lbs) is the fuel on board over the abort base at refueling altitude or cruise altitude as indicated. (5) *Bingo fuel* (6644 lbs) is the amount of fuel on board required to reach a point over the abort base with a minimum of 30 minutes reserve (computed for 10,000 feet at maximum endurance). It is important to note that regardless of your actual flight position (1, 2 . . . or 6), it is the sequence in which you refuel that is critical when considering abort fuel requirements. Any delay in making the divert decision beyond your scheduled missed refueling abort point may also result in insufficient fuel for recovery. Keep a close watch on your fuel schedule to ensure you remain close to the winded flight profile fuel schedule. If your remaining fuel is less than Bingo for a given refueling position, Head Dancer (the airborne mission director for the deployment) will probably decide to abort the mission and divert the tanker and remaining receivers to the abort base to ensure successful recovery of all aircraft. Remember, tank feeding problems can drastically reduce your options and degrade aircraft cruise performance. The bottom line is know your fuel requirements for the planned profile and monitor your fuel flows closely. *Don't delay decisions to abort*—you may not have all the fuel you need to recover safely.

Another problem that will alter your plans is the worst type: a catastrophic failure of a critical aircraft component such as flight controls, engine failure or fire, etc. One thing is for certain, you're going down in the North Atlantic. Now, how will you handle this one?

"No sweat," you say, "The Airborne rescue Duckbutt will be overhead shortly. They'll take care of me." Not so fast, Slick. Don't bet your water wings on a 007-type recovery as seen in the movie "Thunderball." James Bond may have been successfully plucked from the water by a Fulton Recovery System, but the military never employed this procedure for search and rescue (SAR) efforts at sea. Thus, you need to think through a more

Line Number	Label Lat	Long		HDG Drift	Total Dist Leg Dist	GS	Total Time Leg Time	Total Fuel Leg Fuel	Fuel Flow
	AAR 4								
	Abort Point								
	5917N	04409W			2125		04 + 34	8119	
49A	Goose	UYR	98	275	(1) 646	409	(2) 1 + 35	(3) 5644	3576
	5319N	06025W		P O	2771		06 + 09	(4) 2475	
49A	Bingo Fuel	(5) 6644							
49B	Keflavik	KF	49	081	671	460	1 + 28	5245	3597
	6359N	02236W		MO	2796		06 + 02	2874	
49B	Bingo Fuel			6245					

HEAD DANCER

conventional and basic game plan.

In this case, your personal survival plan should include some of the following considerations:

Fix Your Position. This can adequately be done by your inertial navigation system (INS), a wingman's INS or by the escort tanker's plot. In addition, during your ejection, the emergency locator beacon will continuously transmit your position until you turn it off. This is an important electronic signaling device especially since the new SAR satellite (SARSAT) has been commissioned. SARSAT can fix your position to within 6 NM with only a 30-second ELT transmission.

Limit Exposure to the Environment. Retaining your body heat is the most important consideration. Know where your raft is and get into it. Don't swim to your raft—pull it to your position. Anti-exposure suits really help here as Figure 2 below points out.

Figure 2

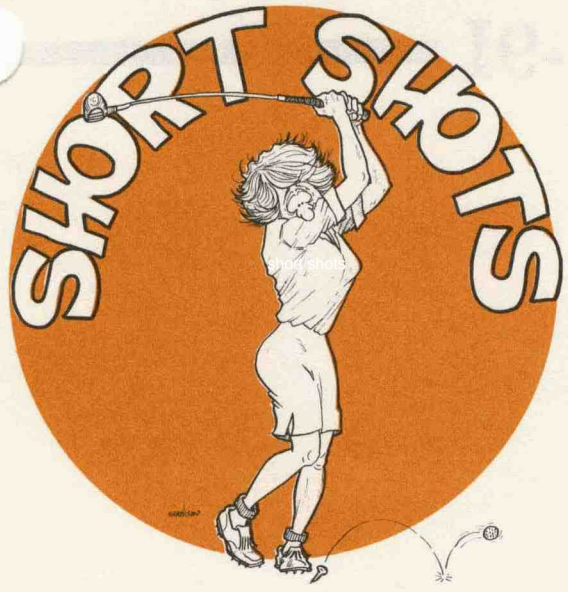
Time of Useful Consciousness in Anti- exposure Suits		
Water Temp	**With Suits**	**Without Suits**
50°F	up to 8 hrs	65 min
40°F	3 hrs, 45 min	30 min
30°F	1hr, 50 min	15 min

As you can see, without suits coupled with possible loss and/or a malfunction of your raft, you can get into trouble fast. (I wonder why some units even consider requesting waivers from wearing these lifesaving suits.) Even if there was a Duckbutt directly overhead as you hit the water, you have to get in your raft to limit exposure. *No one* will be dropped into the water to assist you. Additional rafts and supplies will be dropped as soon as possible. But don't leave that raft. Even if they drop a 20-man raft and you can get to it, remember to keep your one-man raft. By using the smaller raft inside a larger flotation device, you will be better able to insulate yourself from the elements and retain your body heat.

Conserve Survival Equipment. Utilizing your emergency locator beacon and your survival radio, you have up to 18 hours of continuous use. Remember to turn off the emergency beacon before using your survival radio. Conserve drinking water.

Recovery phase will be initiated immediately. Communication on board the escort tanker will enable the tanker crew to alert the controlling air traffic control (ATC) agency and relay the position of the downed aircraft. ATC has the best capability to scramble available SAR assets. In addition ATC can notify the maritime control agencies to divert maritime shipping for your recovery. Pickup by surface vessel is the most likely method of extraction from the water.

You may have heard that pr cautionary airborne search and rescue escort missions (Duckbutt) have ended. That's true. Now, SAR assets will only respond to actual emergency/distress situations. Although you may feel less comfortable because of this recent change, you can see from the above discussion that *your* actions are the key to your survival. In fact, some advantages can be gained because the regional SAR Control Center can focus all available assets and their capabilities on the recovery effort. Although I've got a few ocean crossings on the books myself, I'm not sure I really ever completely considered the consequences of an aircraft malfunction over the North Atlantic. Hopefully, this article gives you some useful information that enhances your personal attitude towards overseas deployments. Have a good one.



Burning **poison ivy** in your fireplace—even old, dried-up poison ivy—can produce smoke that will give the rash to people. Be careful what you burn.

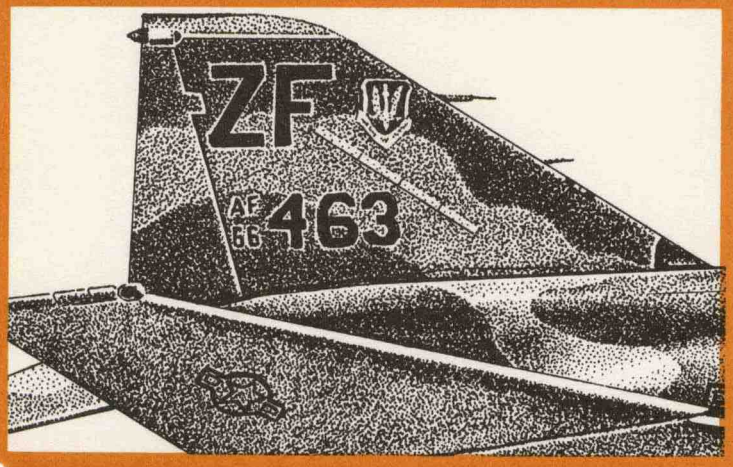
Knowing where your **gas, water and electrical shut-offs** are can be a lifesaver in an emergency (tornado, flood, hurricane). Make sure your family can turn off trouble.

Older baby furniture may not meet today's safety standards. Be cautious when you buy used furniture for your children—make sure it meets safety requirements.

NO DIVING SIGNS. Although infrequent, diving injuries are of a catastrophic nature, often leaving the victim paralyzed. If you see this sign, heed it's warning.

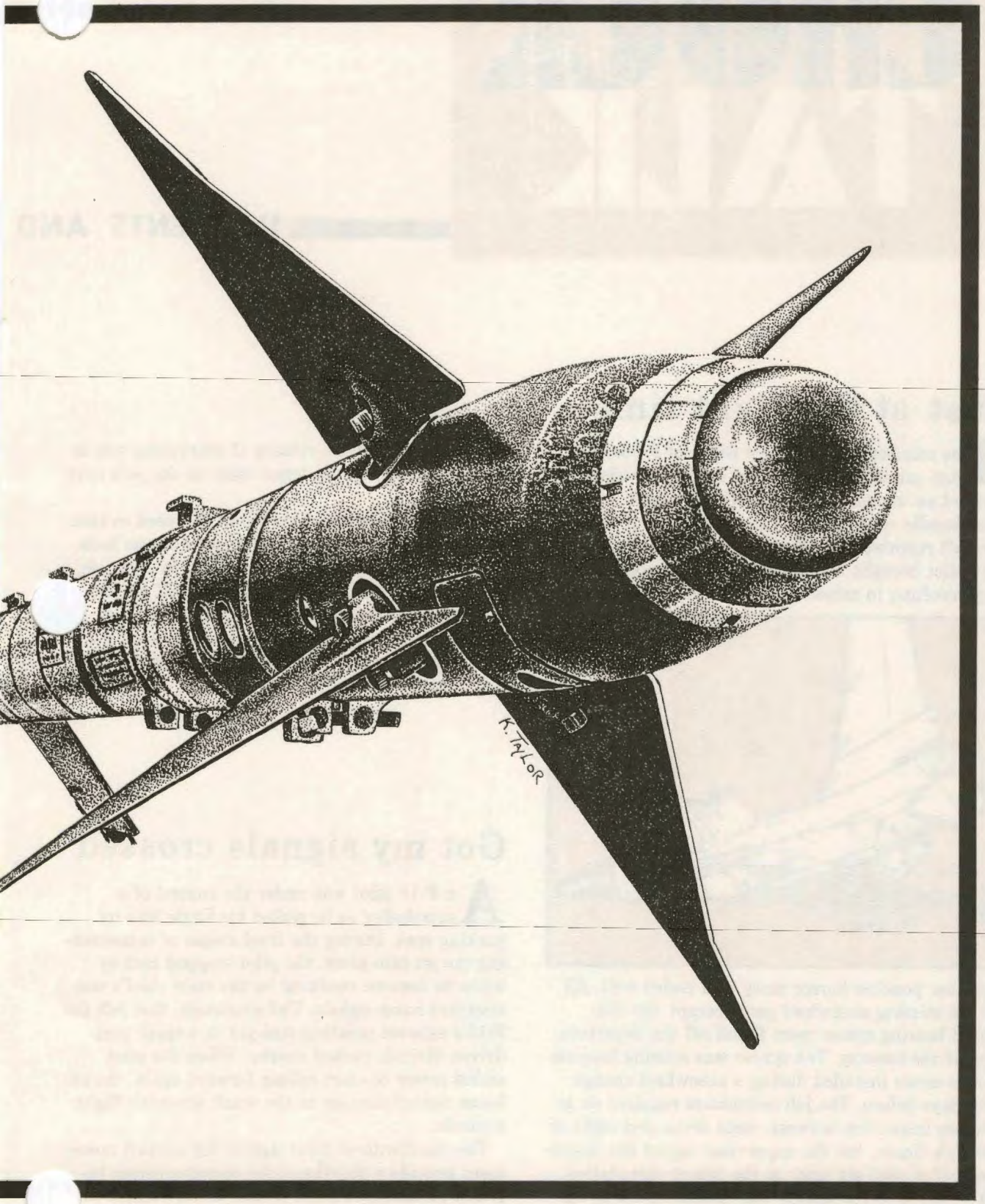
Diving into this pool could cause serious injury, probably resulting in paralysis or death. Striking the floor or sides is dangerous. Dives from the deck into less than 5′ or from a deck-mounted diving board into less than 9′ or from a one-meter board into less than 12′ of water are hazardous, especially steep entries. Learn proper diving techniques including hand position and safe entry angles. Additional diving information is posted and/or available from owner or operator.

HEADS UP



Next month, in the **JUNE** issue of *TAC Attack*, you can look forward to seeing SrA Kelvin Taylor's stipple rendition of an F-4D firing an AIM-7 missile IN THE CENTER.

F-16A/AIM-9L


K. TAYLOR

CHOCK TALK

chock talk incidents and **INCIDENTS AND**

Just at the right time

The number two pilot in a flight of F-16s had just raised his gear handle on takeoff when he noticed an unusual thump. A warning light in the gear handle confirmed a gear problem, and a chase aircraft reported that the nosewheel was missing. The pilot brought his aircraft in for a smooth landing, resulting in minor damage to the nose strut.

Another possible horror story that ended well. All of the missing nosewheel parts except the outboard bearing spacer were found off the departure end of the runway. The spacer was missing because it was never installed during a nosewheel change two days before. The job procedures required an in-process inspection between steps seven and eight of the Job Guide, but the supervisor signed the inspection off at step six prior to the spacer installation. After the wheel assembly was complete, it was impossible to determine visually if everything was in place. The concrete evidence came on the jet's next flight.

We are continually reminded of the need to take our jobs seriously and to do our work by the book. There's a lot to be said for leadership by example. If, as a supervisor, you decide to sign off an inspection at other than the prescribed time, you also send a clear message to the troops that it's OK to do things when it's convenient, not when you're supposed to.

Got my signals crossed

An F-15 pilot was under the control of a marshaller as he pulled his Eagle into its parking spot. During the final stages of maneuvering the jet into place, the pilot stopped taxiing when he became confused by the crew chief's nonstandard hand signals. Unfortunately, that left the F-15's exhaust pointing straight at a small prop-driven aircraft parked nearby. When the pilot added power to start rolling forward again, the exhaust caused damage to the small aircraft's flight controls.

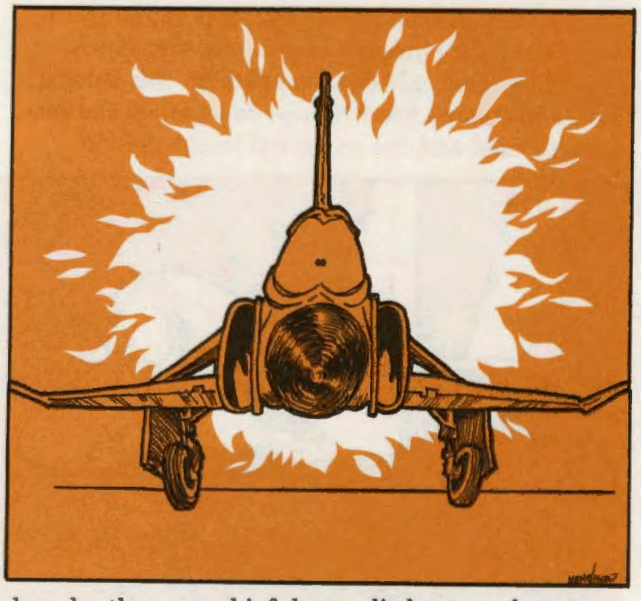
The standardized hand signals for aircraft movement provide a shorthand for communication between ground crews and pilots. When everyone i

volved knows and uses the established signals correctly, the whole process of moving aircraft on busy ramps full of AGE and other aircraft is made much simpler and safer. The time to know those signals is before you hit the flight line, not when you've got the pointy end of a jet coming your way.

A fiery puddle

An F-4 crew had just started the right engine when the crew chief commented that a lot of white vapor was coming out of the tail pipe. The aircraft commander told him that was normal for low smoke engines and continued the start. At 22 percent, the engine lit off with a loud rumble and a fireball appeared in the tail pipe. The crew chief told the crew there was a fire in the tail pipe area, and the crew shut down the engine and egressed after advising the tower of their problem.

The fire was caused by undetected fuel puddling. On the day prior to the incident, the aircraft had been towed into a hangar for scheduled maintenance. The wings had been folded in accordance with a local maintenance operating instruction (MOI) covering hangar entry and departure. During one check, the right throttle was moved forward but never placed back in the off position. When the aircraft left the hangar, the MOI didn't include ecking throttle positions. A power check was



done by the crew chief; he applied external power and air to the number two engine in order to unfold the wings. The TO for starting or motoring the engine does cover throttle positioning, but the crew chief apparently didn't follow it. A power off check wasn't completed prior to crew arrival or the puddled fuel would probably have been discovered.

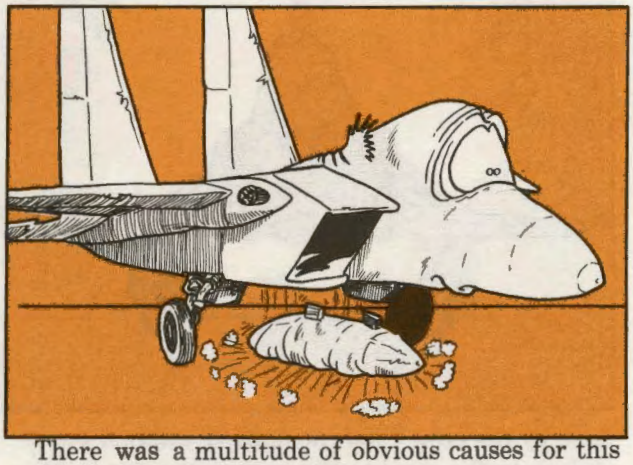
Do you have MOIs or local checklists that could set you up for a problem such as this? This incident wasn't caused by an imperfect checklist. It was caused by not following the established checklists. Fortunately, the aircraft suffered no damage from the fire, but we can't rely on good fortune to minimize the results of our mistakes. Tech data is indispensable. Use it.

CHOCK TALK

A failure to communicate

Two maintenance technicians were installing a centerline pylon on an F-15 after the right engine had been reinstalled. They used the proper checklist, and the job of getting the pylon secured was completed without any problems.

The team chief, seated in the cockpit, operated the cockpit switches while the other technician, on the ground, ran the test equipment. After the jettison check was completed, the other technician started to install impulse cartridges in the pylon breeches before aircraft power was shut down. Both breeches had been installed; he was getting ready to tighten the first one down when the cartridges fired and the pylon fell to the ground.



There was a multitude of obvious causes for this malfunction. The crew member in the cockpit felt he might have accidentally pushed the selective jettison button while he attempted to safe the cockpit switches. The technician on the ground hadn't installed the pylon safety pin fully after the jettison check was completed.

The team chief didn't communicate with the other technician to wait on the cart installation until he had safed the switches, turned the power off and disconnected the power cart from the aircraft.

All of that boils down to one simple fact—they failed to follow their tech data. The result: a costly ordnance pylon jettisoned on the ramp and two decertified maintenance technicians.

These guys also mentioned one very important fact that they allowed to influence their actions in doing the job. It was cold and rainy at the time and this was their last job of the day. When the weather conditions on the flight line aren't what you'd like them to be, that should be a reminder to check your personal attitude and sense of urgency toward the jobs left to do. When the weather is cold and miserable, that's probably the time to slow down and make sure you don't skip or overlook steps in your haste to get back inside. The thunderstorms of spring as well as the heat of summer can make the flight line just as inhospitable as the snow and winds of winter. Don't let adverse weather and time of day box you into a corner where you feel shortcuts are OK. Take your time, do the job right and you'll be glad you did.

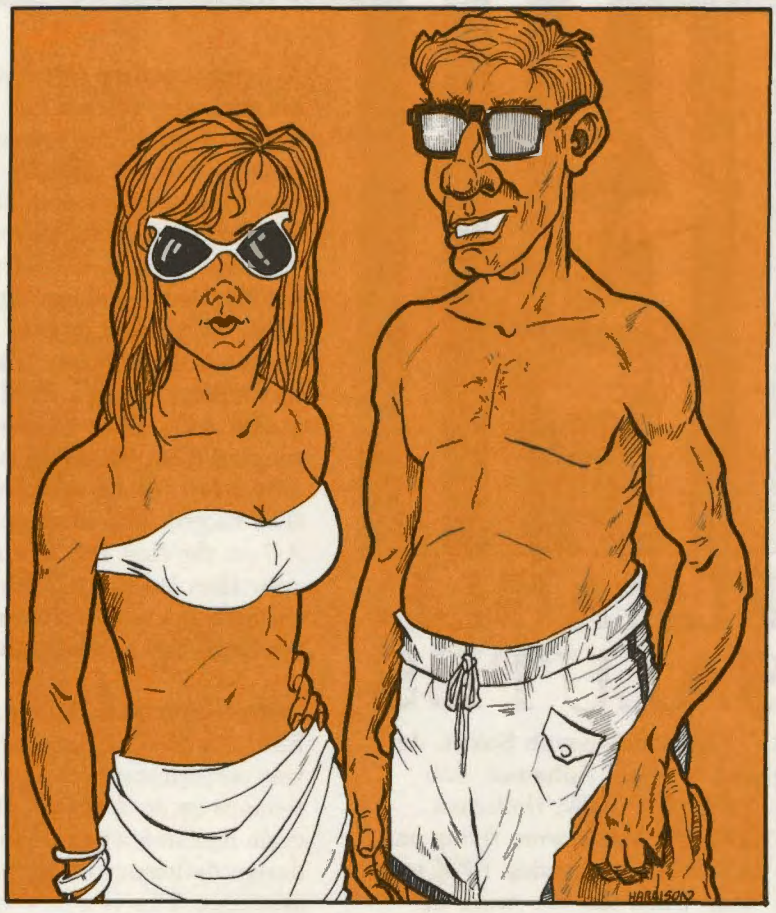
Who would have thought it

Sometimes a mishap is caused by an obvious disregard for the most basic principles of safety. At other times, what seems to be a very minor violation of the tech data can result in a very serious outcome. One recent example was an F-15 that experienced engine damage due to foreign objects that were sucked down the intake.

The FOD was caused by a nosewheel tie bolt nut and washer; but the parts hadn't been carelessly left lying around in front of, or thrown toward, the hungry F-100 engines. This particular mishap began during a change of the nosewheel when an improper antiseize compound was used. That mistake allowed an over torque of the tie bolt, and eventually stress and fatigue caused the tie bolt to fail during a landing. The washer and tie bolt were then sucked into the engine, causing extensive damage to several fan core sections.

You may not understand why every step in the tech data is required, but you can bet there are a lot of possible costly consequences for each deviation. If you don't know the reason, ask somebody; but don't decide to just ignore the TO until you find out.

GET READY FOR SUMMER



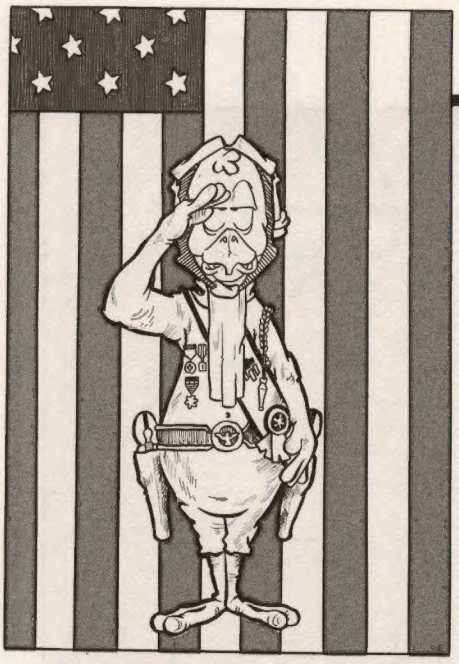
CMSgt Ronald C. Christiansen
Chief, TAC Ground Safety

Another winter is past, summer is on the way. What a great feeling: warmer temperatures, boating, swimming, scuba diving, fewer clothes. But are you ready for summer? We all look forward to it, but the majority of us don't get ready for it until midseason.

Every summer people spend many agonizing and painful hours because of foolish recreational accidents and "beet red" bodies. We read a lot about what we should do to protect ourselves during off-duty hours, but some of us don't pay attention to all the free advice. Let's be smart this summer and get ready for it by doing things right.

- Be physically prepared. You don't have to be a super athlete. Don't take on a new activity such as scuba diving or distance swimming unless you're capable and have the right stuff—training. Throw the macho attitude away and you'll be better off.
- Check your gear. Make sure equipment is in good working condition. Don't try to make something last another season when it belongs in the dump. Prepare for the activity that involves use of the equipment—make a checklist and use it.
- To burn or not to burn. It's your decision, but when you're stuck in the hospital because you didn't protect yourself from the sun, the boss or your supervisor won't be too understanding. If you're a burner, use protective lotion or clothes and limit your exposure time.
- Use common sense. Don't booze it up on a beach or boat and decide to become an Olympic swimmer or diver. Booze makes it difficult to determine if the water is too shallow. Many Air Force people have become permanently disabled from slamming head first into a rock or pool bottom because they let alcohol be their guide.
- Avoid peer pressure. Don't let peer pressure force you to do something you know is wrong. Always make sure someone knows where you are.

Just a few tips to get you thinking about a super summer that you'll look back on in October as having been just beautiful. Don't spoil it by not having your act together.



FLEAGLE SALUTES

Captains Joseph Sokol, Jr., and **Michael Bohanan**, 435 TFTS, 479 TTW, Holloman AFB, N. Mex., were flying an AT-38B in a two-ship BFM mission when the left wing tip departed the aircraft, damaging the left flap and fuselage. Capt Sokol immediately took control of the aircraft and, despite the need for abnormally large control inputs, was able to maintain controlled flight. The two crewmen pointed the aircraft toward home, performed the appropriate emergency checklist procedures and made several critical decisions concerning the airworthiness of their aircraft. After performing a thorough evaluation of the aircraft's controllability, Capt Sokol flew a smooth recovery and landing despite the large amount of aileron control required.

An A-7 pilot was just beginning an ILS approach into Tulsa, Okla., in the weather on an A-7 cross-country sortie when his generator fell off line and wouldn't reset. The emergency generator didn't come up to speed immediately and left him without attitude references. At the same time an RF-4 from the 4485th Test Squadron, Eglin AFB, FL, crewed by **Maj Mike Byrd** and **Maj Danny Clark,** was inbound from a PDM pickup at Hill AFB. With visibility ranging from 5000 feet down to only a few feet in rain showers, they successfully intercepted the A-7 on the first try. The F-4 crew then led the A-7 pilot through the weather to an ILS approach and a safe landing.

SSgt Charlie L. Miller, 33 EMS, 33 TFW, Eglin AFB, Fla., was performing preventive maintenance on an A/M 32C-10 air cycle machine when he found a design deficiency on its tire rim assembly. This is a new type rim assembly, held together by a spring clip and requires 100 psi. However, if the spring clip does not seat, the assembly could blow apart causing a serious mishap. Sergeant Miller discovered that this assembly is not covered in the end item equipment TO, so he submitted an AFTO Form 22 that resulted in a change to the TO. His branch also implemented procedures where only 20 psi will be used until the spring clip secures.

Capt James C. Kuzo, 103 TASS, 111 TASG, Willow Grove NAS, Pa., was preparing to land his OA-37 after a cross-country sortie to a midwestern base when he realized that his right main gear would not extend. He made several recycling attempts over an unpopulated area, but the tower confirmed that the right gear still had not come down.

After several more unsuccessful attempts to lower the gear, and a minimum fuel state, he prepared to land gear up. He flew the approach straight in with full flaps and speed brake extended according to the emergency checklist procedures. The aircraft slid to a stop on the empty pylon tanks and speed brake, causing only minor abrasive damage to the aircraft.

Capt Richard Danzey, 20 TFTS, 35 TTW, George AFB, Calif., was performing IP duties in the rear cockpit of an F-4E with a German student in the front seat. During a practice instrument approach at Edwards AFB, the aircraft lost utility hydraulic pressure. Since it was only the student's eleventh F-4 sortie, Capt Danzey assumed control of the aircraft and made an immediate go-around. Returning to George for recovery, Capt Danzey found that low altitude wind shear, turbulence and strong gusty surface winds had increased in intensity since their takeoff. Runway 34 at George was most closely aligned with the wind, so he set up for a straight-in approach to it. Because of his utility hydraulic loss, Capt Danzey was also committed to an approach-end arrestment.

On the first pass, blowing dust and aircraft crab from a strong crosswind prevented Capt Danzey from seeing the runway, so he passed control of the aircraft to the student. When hoo

skip caused a missed engagement, Capt Danzey resumed aircraft control and went around. On their second approach, the same thing happened. Now low on fuel and believing another attempt on runway 34 would be futile, he decided to attempt a landing on runway 21 despite a strong right crosswind. This time he was able to pick up the runway environment and landed short of the cable, but hook skip once again resulted in a missed engagement. Although faced with difficult control capability, Capt Danzey went to his backup plan to remain on the ground. He directed the student to jettison the drag chute if they were unable to maintain directional control with it deployed, but that didn't prove necessary. Capt Danzey was able to bring the aircraft safely to a stop on the centerline with 3000 feet remaining, using the emergency braking system.

2d Lt Rodger L. Williams, an upgrading O-2 pilot from the 21 TASS, Shaw AFB, S.C., and **Capt John R. Dritenbas**, an O-2 IP in the 549 TASTG, Patrick AFB, FL, were flying on a night weapons delivery sortie when the aircraft began severe vibrations about fifteen minutes after takeoff. Capt Dritenbas took the controls and shut down the front engine when he determined that it was the cause of the problem. The crew turned toward the nearest emergency field equipped with runway lights as they informed flight lead of their problem and intentions.

In an attempt to maintain altitude, power on the rear engine was increased to maximum, but the engine began to overtemp. To keep the engine temperature within limits, power was reduced and a slight descent initiated. Once a steady airspeed, power setting and descent rate were established, Capt Dritenbas determined that sufficient altitude was available to reach the emergency field without having to jettison stores into the surrounding populated areas. While Capt Dritenbas flew the aircraft, Lt Williams completed all of the appropriate checklist procedures, assisted in reviewing the strange field approach and used the emergency hand pump to lower the landing gear. The aircraft was sucessfully landed without further problems.

SSgt James O. Fretwell, 23 TFW, England AFB, La., used the techniques he learned in self-aid and buddy care to assist an injured woman and her young child when their car had a head-on collision with a pickup truck in front of his home. His knowledge and assistance were invaluable during this serious emergency.

SrA Russell D. J. Gerard, 57 CRS, 57 FWW, Nellis AFB, Nev., was installing variable guide vane retaining clips on the inlet guide vane, which allows the engine to breath at different altitudes. Airman Gerard noticed that when some of the clips were pried open, they failed to return to original position. If the clips were to come off the engine in flight, the result would be a compressor stall or even a flameout. Airman Gerard immediately notified his supervisor and proceeded to check the retaining clips on all J85 engines in the shop. He found 477 bad retaining clips on 10 engines. Eight days after submitting a quality deficiency report, 121 clips were removed from the supply system. A follow-up report was submitted and the San Antonio SA-ALC depot was notified; their stock was reviewed and also purged of defective clips.

Sgt Joseph L. Crady, 355 EMS, 355 TTW, Davis-Monthan AFB, Ariz., was performing a basic postflight inspection on a transient A-10 when he discovered extensive damage to several fan blades on the number two engine, rivets missing on both intakes, improper sheet metal patches and severe fan blade chafing. As a result, the aircraft was held over for two days in order to accomplish the amount of repair work required. Sergeant Crady's assistance during the repairs enabled the aircraft to be returned to operational status in minimum time.

TSgt Kenneth E. Ellis, 33 EMS, 33 TFW, Eglin AFB, Fla. During the fourth day of a Phase II TAC ORI, Sergeant Ellis found an MJ-1A bomblift lifting arm end plate lying on the ground. Without this plate, the lifting arm could shift and drop a missile. Sergeant Ellis implemented procedures to inspect all MJ-1A bomblifts in the wing. The bomblift with the missing end plate was found and it was replaced. The immediate actions of Sergeant Ellis prevented damage to AIM-7 missiles, MJ-1A bomblifts and personnel.

WEAPONS WORDS

Combat Oriented Explosives Safety (COES)

SMSgt Ed Hartman
HQ TAC/SEW

COES—The letters probably don't mean as much to you as COMO, COSO, CMU and AMU, but the expression they stand for probably has a greater effect on mission accomplishment than most people are aware of. The letters don't exist in any formal publication, but the concept should be a serious consideration in every plan or action where explosives are involved.

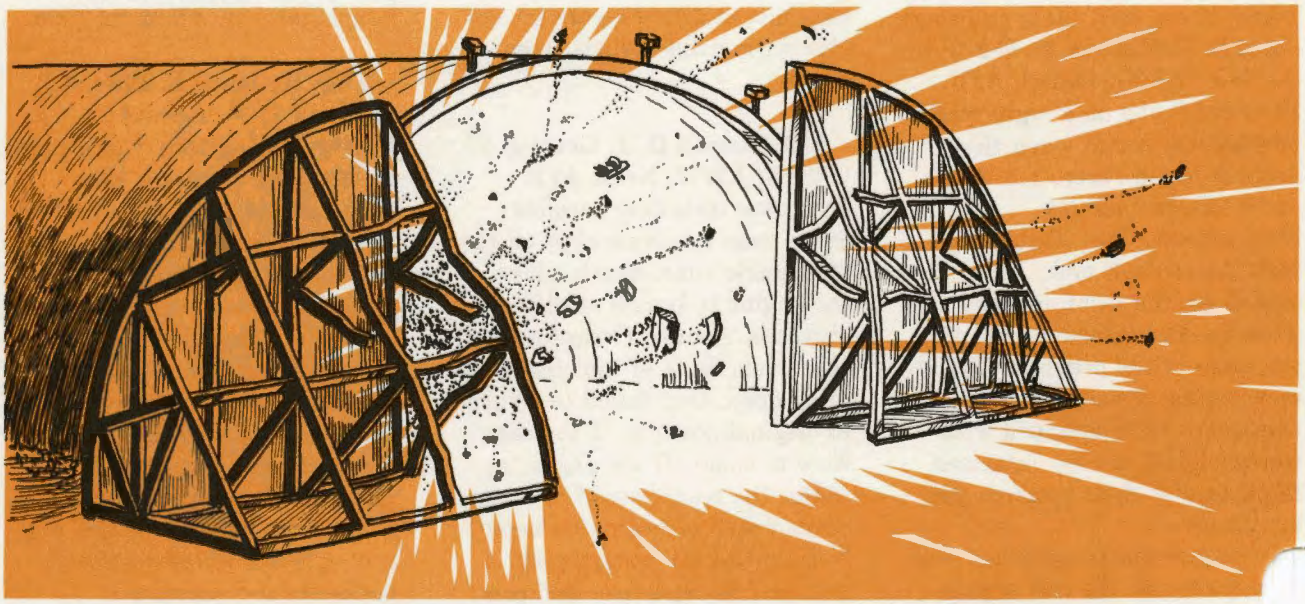
Bombs, missiles and rockets are designed to destroy enemy personnel and property. Explosives safety standards were developed to protect friendly personnel and property from the effects of their own munitions. Here are some common misconceptions about explosives safety standards:

Misconception #1: Hardened aircraft shelters are designed to contain the effects of an internal explosion.

Fact: Hardened aircraft shelters were designed to protect the contents of the shelter from external enemy attack.

Fact: In tests, four AIM-9 warheads were detonated inside a shelter. The net explosive weight of the warheads was about 48 pounds. Although the shelter arch was undamaged by the blast, the 170 ton doors were pushed out over 20 feet in front of the shelter.

Fact: In tests, the typical aircraft load of MK-82



GP bonbs was detonated inside a shelter. The shelter suffered massive structural failure. Some shelters within 300 feet were destroyed by impact of huge shelter fragments.

Misconception #2: The standard earth-covered storage igloo is designed to contain an internal explosion.

Fact: The earth-covered igloo was designed to protect its contents from external forces.

Fact: The design of the igloo does direct some of the blast in a less hazardous direction.

Fact: In tests, 150 pounds of explosives (less than one 500- pound MK-82 bomb) were detonated inside an igloo. The headwall, door and most of the arch were completely destroyed. Only the rear wall was left standing.

Fact: Most igloos can store from 250,000 to 500,000 pounds (net explosive weight) of explosives. A MK-82 bomb has a net explosive weight of 192 pounds.

Misconception #3: Properly separated combat aircraft loaded with GP bombs are protected from blast and fragment damage if one loaded aircraft blows up.

Fact: Properly separated aircraft will only keep the bombs on nearby aircraft from mass detonating.

Fact: A row of aircraft, each loaded with 12 MK-82 GP bombs, with an improper separation of 50 feet between aircraft will transfer and detonate the bombs on the next aircraft, and the next, and the next, so fast that it will appear to be one explosion. For example, if there were 10 aircraft in the row, the explosion and blast is equivalent to 120 bombs detonating at once.

Fact: If an explosion occurred on one aircraft in a row of aircraft properly separated (about 145 feet between aircraft), the row would not mass detonate. The explosion and blast would be limited to the 12 bombs on the aircraft.

Fact: Blast and fragments from the above explosion would destroy nearby aircraft. Aircraft at about 500 feet would require major repair and would be unflyable.

Fact: The 145-foot separation only prevents mass detonation. The entire row of aircraft would probably be destroyed from secondary explosions caused by fire and hot fragments. This is called propagation.

Misconception #4: Two thousand feet is a safe distance to withdraw from a burning aircraft loaded with explosives.

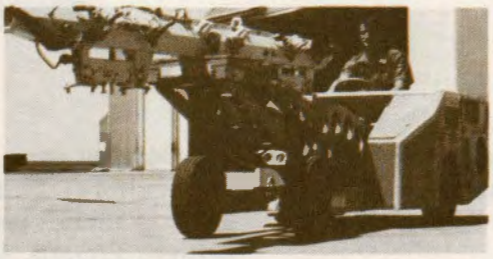
Fact: Two thousand feet is the minimum withdrawal distance.

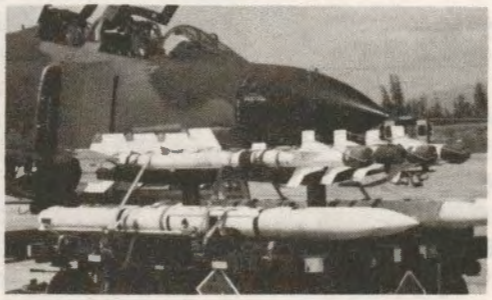
Fact: Two percent of the personnel in the open at 2000 feet can be expected to be killed by fragments.

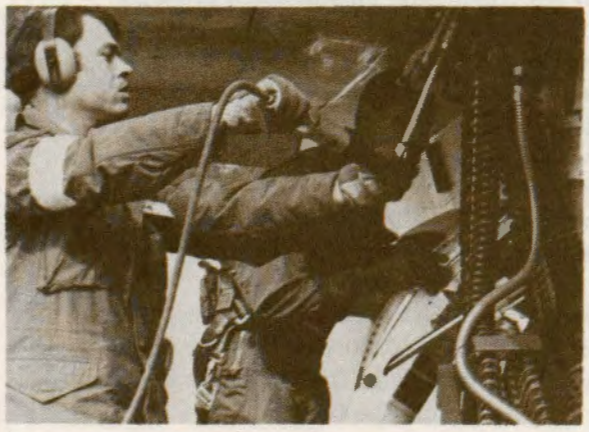
Fact: During a fire power demonstration, a large fragment from a MK-84 (2000 pound) bomb landed behind the reviewing stands. The reviewing stands were over 7000 feet from the target.

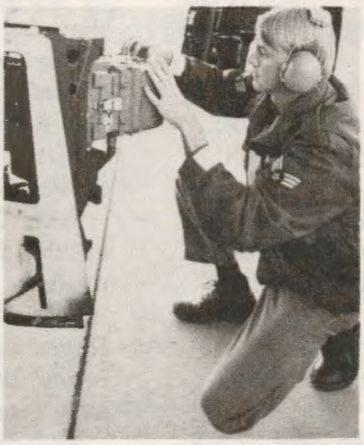
Modern munitions are designed to minimize the risk involved to the handlers; however, technology has not yet advanced enough to insure the weapons know the difference between enemy and friendly forces. How we manage the risk inherent in this job could determine mission success or failure. Let's not give the enemy a double-edged sword.

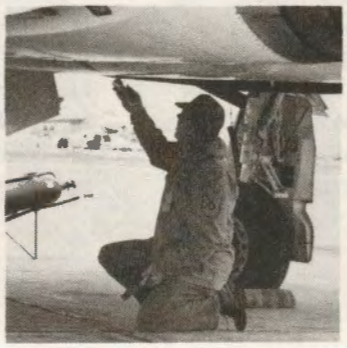
COMP











CMSgt Ronald C. Christiansen
Chief, TAC Ground Safety

A 1981 TAC study revealed that our methods to ensure safe mission accomplishment were based on policies and philosophies revolving around rules and regulations rather than true prevention systems using risk assessment and management techniques. It was apparent that many lessons once learned from mishaps had to be relearned because we never identified the real cause behind some mishaps in the first place. In other words, we hadn't gone far enough in the investigative process. Our prevention activities were also out of tune with force modernization and mission changes. In many cases, our safety professionals were not trained in state-of-the-art technology.

We learned of a new approach in use by the Department of Energy (DOE) that was a spin-off of early systems safety work

AS IS HERE

done by the Air Force in the aerospace and missile development program. Their analytical techniques were excellent tools for application to Tactical Air Command, since the intent of their program was to eliminate oversights and omissions to operational readiness. After 2½ years of special training and a concerted effort to adapt the DOE program to USAF mission needs, TAC's Combat Oriented Mishap Prevention Analysis System (COMPAS) went into action in February 1986.

COMPAS can give commanders and supervisors a formal assessment of their unit operation including such items as aircraft or mission conversion, deployments, information flow, operational readiness and quality mishap investigation. It also provides leaders with answers on which to base risk management decisions. Although still in its infancy, many of the COMPAS tools now available can be applied by safety and functional personnel. Here are some of the items incorporated in COMPAS.

- Mishap Prevention and Investigation. Specialists use a logic tree to ensure that a complete analysis is done to get to the bottom line. Mishap investigation flow charts graphically provide an easy understanding of the mishap sequence and any systematic deficiencies (i.e., management decision factors, training, higher headquarters actions, etc.).

- Change Analysis. We change things daily, but we don't often study the impact of those changes to ensure that we're getting the job done right. Change analysis provides the opportunity to identify potential failures and gives counteractions to prevent them from happening. Change analysis can also be used to find obscure causes for some problems.

- System Observation Reviews. This is a method used to interview supervisors and workers about their unit and tasks. The review identifies levels of safety awareness, information flow, job hazards and mishap potential. The results give unit leadership answers about policy success or failure, what is real versus perceived and any required mishap prevention adjustments.

There are other analytical techniques available to the safety professional using COMPAS, but these are the primary ones of interest to commanders and supervisors. Safety personnel are being trained in all the COMPAS techniques so that they can enhance your unit's mission achievement. They will also be able to provide training to your personnel on some methods to improve your unit's operation.

COMPAS can be used by anyone wanting a quality operation. It can be used to bring a new process or task on line or just to ensure the effectiveness of your current work and performance. COMPAS has no boundaries, but it does require the support of technical specialists to ensure thoroughness.

COMPAS also permits you to perform an indepth self-evaluation of your own organization. Like any new system, COMPAS will have some growing pains, and some of its tools take time to learn and use properly. But, like any quality system, it's worth the time invested. COMPAS proves its value when used in conjunction with other existing systems. It provides a method to standardize tasks that were previously only based on individual experiences.

COMPAS will help us become even better at what we do. To make it last, we've got to make it happen and COMPAS is the way. Why not find out more about COMPAS and give it a try. Prevention is worth millions. >

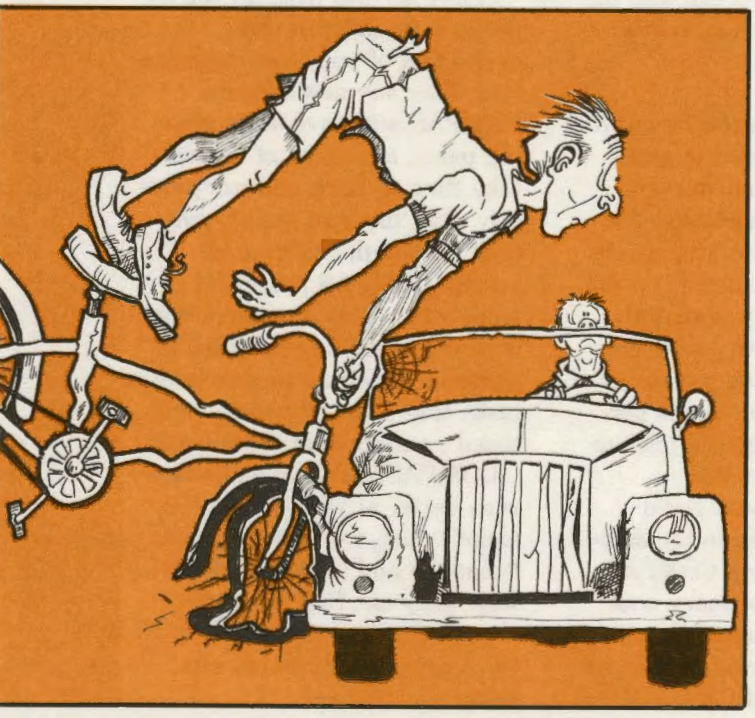
DOWN TO EARTH

ITEMS THAT CAN AFFECT YOU AND YOUR FAMILY

Bicycling

Bicycling has changed from being largely a child's pastime to an adult's way of exercising and travelling. This increase in adult cycling has also brought an increase in the number of adults injured: in 1960, 78 percent of those injured while cycling were children 14 years old and younger. By 1981, 65 percent of those injured were older than 15.

Most bicycle accidents that end in death or a disabling injury involve a collision with a motor vehicle and usually occur during rush hour traffic between 4 p.m. and 6 p.m.



At least half of all car-bike accidents result from traffic violations by both the cyclist and the motorist. The cyclist's most common violations are failing to yield the right-of-way, driving in the middle of the street, driving too fast for conditions, disregarding traffic signs and signals, driving against the flow of traffic and making an improper turn.

When bicycles are mixed with motor vehicles, they have all the rights and all the duties and responsibilities of motorists. This means they must obey all traffic signals, go with the flow of traffic and signal their intentions.

In many car-bike accidents, motorists report not seeing the cyclist in time to avoid a collision. It is up to cyclists, therefore, to make themselves as visible as possible. The law requires bicycles to be equipped with rear, pedal and side reflectors. Rear reflectors must be red and visible from a distance of 500 feet to the rear while in front of the upper beams of a motor vehicle. Pedal reflectors should be amber or colorless and be visible 200 feet from the front and rear.

Side reflectors may be mounted on the frame or spokes, but must be visible from 500 feet. Front-side reflectors can be amber or colorless, but those on back must be red.

Cyclists who ride at night are required to have a headlight that is visible from 500 feet in front of the bike.

Brightly colored clothing also makes cyclists easier to see. Reflective spacer flags alert motorists to the presence of cyclists and some cyclists claim that motorists are more willing to share the road with cycles that have flags.

Even with equipment to make them visible, cy-

clists should always practice defensive driving. They should look for vehicles turning left in front of them, or turning right across their lane. A cyclist entering an intersection should look in all directions and be prepared for defensive maneuvers. Cyclists should also show their own intentions with hand signals.

Injuries that don't involve motor vehicles are ·t often caused by falls, collisions or the cyclist's of control. Falls often involve a hazardous road surface, such as water, gravel, wet leaves and holes.

The rule to remember when approaching any of these is to slow down. Accelerating, braking and stopping should all be performed gradually, so the tires don't lose traction. If there are grooves in the road, such as those found at railroad crossings, it's best to cross them at the 45- to 90-degree angle so the wheels won't be caught.

As with cars, bicycles that go too fast on a wet road can hydroplane, especially if the tires are worn. Reducing speed is the only way to avoid this.

Falls and collisions are also caused by defective equipment on the bike. The law requires that brakes be able to stop a bike within 15 feet from a speed of 10 mph on dry pavement. Bikes equipped with hand brakes must have one on each wheel, or a hand brake on the front and a coaster brake on the rear. Brakes should be checked periodically to make sure they're in good condition.

Lack of a chain guard can also cause a fall by allowing the chain to grab onto a pant leg. Even on bikes that have chain guards, cyclists may want to use a trouser clip (or even a heavy rubber band) to keep the pant leg wrapped around their ankle and away from the chain.

The piece of equipment that is perhaps most effective in preventing severe injuries doesn't come with a bicycle—a helmet. Three-quarters of all bicycle deaths and permanent disabilities are caused by severe blows to the head. A helmet can minimize the danger of a head injury. The National Safety Council urges all cyclists, no matter where they ride, to wear a helmet. Sporting goods and department stores carry helmets that are lightweight, sturdy and brightly colored for increased visibility.

Courtesy *National Safety News*

EMERGENCY SITUATION TRAINING

Maj Jeffrey N. Fender
TAC/DOV

SITUATION: You are flying TFR around the low-level route in your Vark at 540 knots groundspeed. As you crest a small ridge, you see a "flock of feathered fliers." You react by pulling up (normally correct direction), but you hear and feel the impact. The right engine compressor stalls and the SIS caution light illuminates.

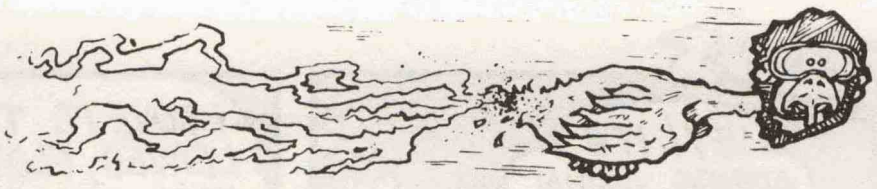
OPTIONS:
- **A.** Turn the pitch damper off.
- **B.** Refer to the checklist for a SIS light.
- **C.** Make sure the TFRs are on to ensure 68 percent protection.
- **D.** Maintain aircraft control, climb to a safe altitude and analyze the damage.

DISCUSSION: Damage from a birdstrike can range from very minor to loss of an aircraft. The first thing to do after a high speed, low-altitude bird strike is to climb and analyze the situation (Option D). Power setting must be tempered by the situation. Over level terrain, mil power may be an acceptable choice (if the good engine also took some birds/debris, using afterburner may aggravate it). In mountainous terrain, you may have no choice. Be prepared to turn the pitch damper off right away. Probe damage could result in a SIS pitchdown exceeding your control stick authority. You'll be within or close to damper off limits. (Besides, step 8 of the "Unscheduled Pitch Maneuver" checklist states "within . . . limits, if practical.") Checklist procedures should now be used to attempt to recover the right engine and handle the SIS light (option A and B). It was probably the result of a damaged right AOA probe. Once all the damage has been assessed (a chase plane will help), a controllability check should be performed. In addition to the areas discussed in the flight manual on controllability checks, some other considerations are—

1. possible single-engine configuration
2. dampers off flight
3. flight parameters during the check.

A lot of pilots perform controllability checks in the landing configuration/profile only, that is, configured for landing in a straight-ahead flight profile. Remember, you have to maneuver to the final approach. TAC recently lost an aircraft during the turn to final after the pilot had done a controllability check. If you have damage which will affect the aerodynamics of your aerospace vehicle, consider not only a straight-ahead flight profile, but also evaluate the handling characteristics for maneuvers you anticipate using during the recovery. Do it at a safe altitude, as the unexpected results could be surprising.

TAC TALLY



TAC Tally

	TAC			ANG			AFR		
	MAR	THRU MAR		MAR	THRU MAR		MAR	THRU MAR	
		1986	1985		1986	1985		1986	1985
CLASS A MISHAPS	2	10	5	1	2	2	0	0	0
AIRCREW FATALITIES	1	5	2	0	0	0	0	0	0
TOTAL EJECTIONS	2	9	5	2	4	2	0	0	0
SUCCESSFUL EJECTIONS	2	9	5	2	4	2	0	0	0

TAC'S TOP 5 thru MAR 85

TAC FTR/RECCE

class A mishap-free months		
37	33 TFW	(F-15) Eglin AFB, FL
35	366 TFW	(EF/F-111) Mtn Home AFB, ID
34	49 TFW	(F-15) Holloman AFB, NM
33	67 TRW	(RF-4) Bergstrom AFB, TX
19	355 TTW	(A-10) Davis-Monthan AFB, AZ

TAC AIR DEFENSE

class A mishap-free months		
108	48 FIS	(F-15) Langley AFB, VA
67	318 FIS	(F-15) McChord AFB, WA
17	49 FIS	(F-106) Griffiss AFB, NY

TAC-GAINED FTR/RECCE

class A mishap-free months		
159	138 TFG	ANG(A-7) Tulsa, OK
136	114 TFG	ANG(A-7) Sioux Falls, SD
122	180 TFG	ANG(F-7) Toledo, OH
114	124 TFG	ANG(RF-4) Boise, ID
100	108 TFW & 155 TRG	

TAC-GAINED AIR DEFENSE

class A mishap-free months		
144	177 FIG	ANG(F-106) Atlantic City, NJ
107	125 FIG	ANG(F-106) Jacksonville, FL
90	119 FIG	ANG(F-4) Fargo, ND
74	107 FIG	ANG(F-4) Niagara Falls, NY
65	147 FIG	ANG(F-4) Ellington AFB, TX

OTHER TAC/-GAINED UNITS

class A mishap-free months		
200	182 TASG	ANG(OA-37) Peoria, IL
184	110 TASG	ANG(OA-37) Battle Creek, MI
180	USAFTAWC	(many fighters) Eglin AFB, FL
172	84 FITS	(T-33) Castle AFB, CA
114	552 AWACW	(E-3, EC-130) Tinker AFB, OK

CLASS A MISHAP COMPARISON RATE

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

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
TAC	1986	4.8	6.8	5.5									
	1985	3.2	3.4	2.7									
ANG	1986	4.8	2.5	3.3									
	1985	4.8	4.8	3.0									
AFR	1986	0.0	0.0	0.0									
	1985	0.0	0.0	0.0									

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FLEAGLE
HEY! IT'S SPRING AGAIN.
I LOVE IT. TREES WIT' GREEN LEAVES, FLOWERS IN BLOOM, BEES IS A BUZZIN', SUNSHINE, AN' BIRDS SINGIN' THEIR LITTLE HEARTS OUT.
BIKINI CLAD BODIES AT BEACHES AND POOLS.
I CAN'T WAIT
© STAN HARRISON 1985
GRIFF, LOOK YONDER.
FLEAGLE WAIT! TH' POOL...
... AIN'T BEEN FILLED YET.
HARRISON