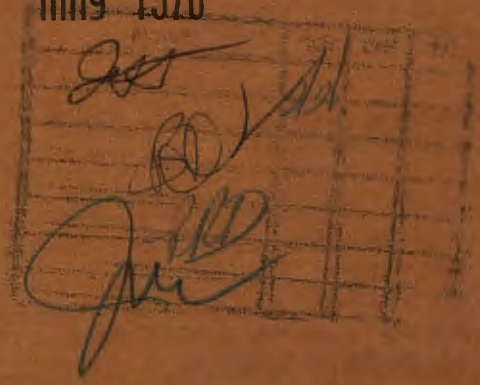
TAC ATTACK

TAC Attack May 1976

MAY 1976



F-4 LOST CANOPIES...Pg 4

LONG

TAC ATTACK MAY 1976 VOLUME 16 NUMBER 5

MAY

FOR EFFICIENT TACTICAL AIR POWER

FEATURES

DEPARTMENTS

TACRP 127-1

Angle of ATTACK

The Human Factor

So far this year we have not done well in the accident prevention arena. Somehow, someway, we must do better. The question, of course, is how? A quick scan of cause factors shows that our biggest problem is aircrew/supervisory error. One solution is for all of us to prevent these human errors which, incidentally, were cause factors in 9 out of the 15 aircraft accidents TAC and TAC-gained forces experienced in the first 3 months of 1976.

The disturbing thing about human-factor accidents is that they can be prevented. Any loss of life is a terrible thing, but a death caused by poor judgement, complacency, or lack of supervision is inexcusable.

Let's zero in on these people problems in what's left of 1976. If we could eliminate all human-factor aircraft accidents during the remainder of the year, we would drive our accident rate down from the highest it has been since 1964. More important than that, we would strengthen TAC's combat capability and keep our excellent training programs. With your help we can do it.

Aircrews - do your part by being prepared to get the most out of each mission. Dig into regulations and Tech Orders - and think when you fly.

Supervisors - double your efforts to provide aircrews the training and guidance necessary to insure compliance with established procedures and directives.

It is possible to drive this year's aircraft accident rate down, but it will take a more demanding approach by commanders, supervisors, and aircrews. The challenge is there. Let's meet it head on, and reduce this needless waste of people and aircraft. We have already lost too much.

John F. Rhemann

JOHN F. RHEMANN, Colonel, USAF
Chief of Safety

DON'T LET YOUR PHANTOM BLOW

By Capt Terryl J. Schwalier
9 AF/SEF
Shaw AFB, SC

Captain Schwalier is a 1969 graduate of the Air Force Academy with a BS in Engineering Sciences (Astronautics). His 1,700-hour flying experience includes the T-38A and RF-4C, including a tour with the 432d TFW in Thailand. Currently, Capt Schwalier is on loan from the 363d TRW to Ninth AF as a Flight Safety Officer.

Canopy losses have plagued the Phantom since it first rolled off the assembly line. Would you believe that in the last ten years over 250 Air Force F/RF-4 aviators have landed, wishing their "off we go" thoughts on takeoff hadn't included the canopy. The ominous thing about canopy losses is that the trend is going the wrong way - from 8 in 1972 to 19 in 1975. Besides being dangerous, this gets expensive - especially when we shell out approximately $6,000 per canopy.

Ninth Air Force Safety recently conducted a study on the canopy loss problem and came up with some pretty significant findings. So, get your self some coffee, prop your feet up, and get ready for a new approach to an old subject.

We'll use 1972 as a reference. Not because that was a vintage year, but because that's when the McDonnell Douglas folks provided us with a detailed canopy loss investi

ITS TOP

gation guide (Reference: Oct 72 PRODUCT SUPPORT DIGEST, pp 28-40). Prior to '72, findings for canopy losses resulted in all kinds of unconvincing gremlin causes ... much like the "bad air" findings of early aircraft accident reports.

Since 1972, the Phantom blew its lid 51 times. Causes can be placed in four basic areas, three of which we can control:

1. Stalled canopies. (62%)

2. Inadvertent jettison/activation. (17%)

3. Shear pin failure. (7%)

4. Intentional jettison/undetermined. (14%)

Let's look at the three areas we can control:

STALLED CANOPIES

A term I know you've heard about, but are you really familiar with it? In an attempt to get everyone off on the same foot, I'll define a stalled canopy as one that has failed to complete its closing and locking cycle - for any reason. This includes such goodies (or baddies) as rain seal interference, premature canopy seal inflation, bad rigging, locking roller failure, FOD in the locking mechanism or on the canopy sills, ad infinitum. The REAL point is: A stalled canopy happens when you close your bubble. A canopy that has stalled on closing will NOT allow the light to go out and the stripes to align. Our check, if performed properly, is "failsafe." We tried to disprove that statement, but we can't. It takes all six overcenter locks to function properly before you get good indications. Make sure when you say:

CLOSED - that you mean - canopy is down firmly on the canopy sills.

LIGHTS OUT - that you mean - the canopy unlock light has gone out simultaneously with canopy locking.

Time out for a little philosophy:

It is rare that a pilot won't swear he checked the canopy light out. Did he? Or did he just perceive that he did? Think about it. Most jocks come to the Phantom from a bird in which the crewmember physically locked the canopy himself ... like the T-38, Hun, Thud, etc. The Phantom's crewmember input stops with canopy lever movement at the start of the closing cycle. It's very easy for F-4 jocks not to monitor the complete closing cycle. If the master caution light was punched off during the engine start, and there are a few other lights illuminated on the telelight, add some glare from the sun , and ... SHAZAM ... a missed canopy light! The nosegunner is especially susceptible -- 75% of all losses since 1972 have been the front-seater's canopy because his open canopy triggers ONLY his telelight panel - whereas the GIB's open bubble triggers the light in both cockpits.

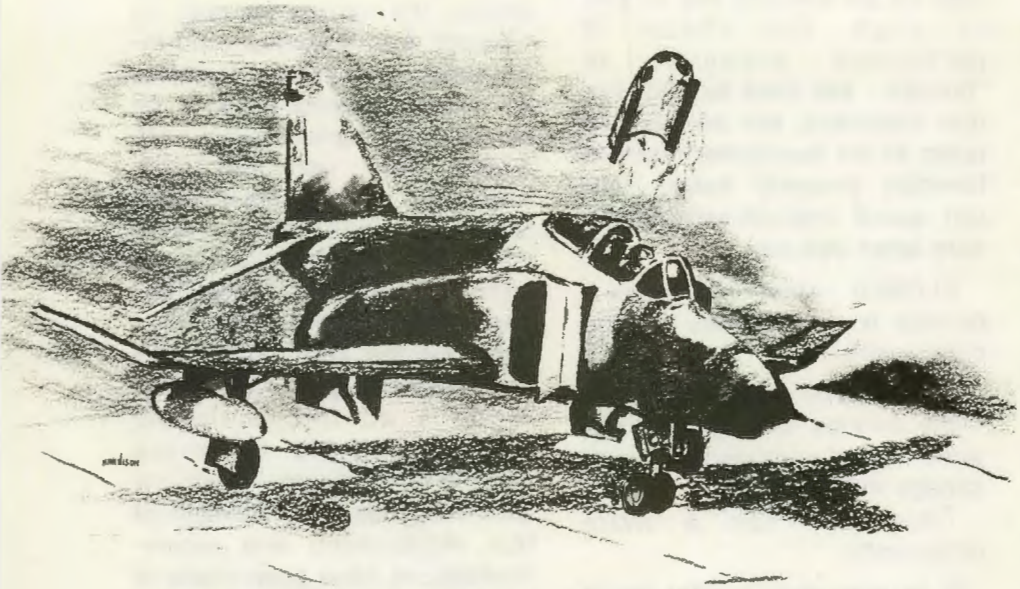
STRIPES ALIGNED - (make sure you mean just that!)

Now let's put the horse back in front of the cart. What causes the canopy to stall on closing? A little background information is in order. It seems as though rigging used to be handled by egress personnel, 422XX types, until mid-1972. ATC/FTD egress instructors taught the formal rigging courses. Since that time canopy installation, rigging, and troubleshooting have been done by the aero repair folks and 431XX types. Currently, there is no formal rigging course available for these personnel. Training is strictly OJT. ATC has been advised of this shortcoming and recommendations have been made to revise their former course for the 431XX people now doing the work. In the interim, a team is in the field with a step-by-step rigging presentation.

It's time now to connect the cart to the horse. That's easy. Marginal rigging or other canopy locking problems can be detected very early with a little help from both the ops and maintenance troops. The locking sequence is designed to operate smoothly - without binding and without a hard lock. If the canopy closing sequence doesn't sound right or locks a little hard, but you still get a valid light out and strips aligned indication ... write it up. Don't chalk it up as "being peculiar to that particular bird" or as a "one-time" occurrence.

This includes those lost canopies in which the initiator fired. This can be further broken down into two causes. The biggest one is the graceful, "that's not the flap handle," or the, "big left upper arm" cause. The second is FOD finding its way

DON'T LET YOUR PHANTOM BLOW ITS TOP



into the bulkhead-mounted initiator, triggering canopy jettison. Hopefully, both causes have been virtually eliminated. The first, with the canopy lever guards, and the second, with both a guard over the rear seat bulkhead-mounted initiator - and a steely-eyed 'gator. We can insure ourselves of success in this category with good crew chief and aircrew "FOD hunting" preflights. If you lose something in the cockpit, either find it or write it up.

The last major "accomplice in crime" for canopy losses which we have control over is shear pin failure. The cure begins with OMS. They get the ball rolling with a good "by-the-book" 10-hour shear pin check. Next comes the GIB who can help by keeping tabs on the front cockpit shear pin through the flight ... especially during canopy closing. Time out for a little add-on:

Even with a broken shear pin, tech reps tell me that you ought to be able to hold onto that canopy. MacDill had an incident in 1971 which backs this up. The key is to keep your Gs to a minimum on the recovery ... no overhead patterns. The only reason a locked bubble with a broken shear pin will blow off is if the mass of the unattached actuator gains enough force (positive G-type) to force the bellcrank down to unlock.

OK, that's the hot skinny. Let's summarize with actions that we can take to insure our canopies stay attached to our jets.

FOR AIRCREWS:

1. Inspect the canopy and sills for damage and foreign objects or any unusual conditions.

2. Inspect the cockpit for foreign objects.

3. Keep both engines at idle when closing canopies.

4. Set the flow to footheat and the temp to 2 o'clock.

5. Check that the canopy closes in normal time.

6. Make sure there are no unusual noises as the canopy locks.

7. Check that the canopy is down firmly on its seals.

8. Insure that the unlock light goes off simultaneously with canopy locking.

9. Check that alignment marks are exactly aligned.

FOR MAINTENANCE

1. Inspect canopies and sills for damage, foreign objects, or any unusual conditions.

2. Inspect the cockpits for foreign objects.

3. Check that the canopy opens and closes normally without unusual noises.

4. Perform the shear pin check as required.

5. Follow tech data when performing rigging or functional checkouts and all other related maintenance.

Let's mark 1976 with an appropriate bicentennial resolution: to reverse the canopy loss trend - right down to nothing. Make sure that the next time you say "off we go," you don't mean canopy.

The author wishes to acknowledge the help of Mr. Bobby Moore, McDonnell Douglas Tech Rep at TAC Headquarters; Mr. Jim Lawson, Air Force Engineer Technical Services at 4th TFW, Seymour Johnson; and MSgt Eukie Bozart, 9AF/LGMF.

TAC SAFETY AWARDS

Crew Chief Safety Award

Sergeant Michael L. Duff, 56th Organizational Maintenance Squadron, 56th Tactical Fighter Wing, MacDill Air Force Base, Florida, has been selected to receive the Tactical Air Command Crew Chief Safety Award for this month. Sergeant Duff will receive a certificate and letter of appreciation from the Vice Commander, Tactical Air Command.

SGT DUFF

Sgt Duff

Maintenance Safety Award

Staff Sergeant Larry R. Woodgett, 23d Field Maintenance Squadron, 23d Tactical Fighter Wing, England Air Force Base, Louisiana, has been selected to receive the Tactical Air Command Maintenance Safety Award for this month. Sergeant Woodgett will receive a certificate and letter of appreciation from the Vice Commander, Tactical Air Command.

SSGT WOODGETT

SSgt Woodget

TAC TIPS

interest items, mishaps with morals, for the TAC aircrewman

Nothing is impossible for the man who doesn't have to do it himself ...

WHAT ARE THEY DOING ABOUT IT?

By Capt Dan Brown
HQ TAC/SEF

Have you as a crew member or maintainer ever read an accident report involving your unit and said to yourself or a buddy, "Yeah, but when are they going to fix it?" A recent TIG BRIEF pointed out that Final Evaluation Letters from the Air Force Inspection and Safety Center (AFISC) are an often neglected, but uniquely useful tool, for determining what has resulted from an accident investigation.

Each unit which experiences a major aircraft accident will receive a Letter of Final Evaluation. Those letters are the final word on findings, causes and recommendations and include the status of corrective actions taken or pending.

A synopsis of the accident is included for folks who aren't familiar with the accident ... like new people in your outfit. Where can you find these letters? Go visit the Safety Officer. He will let you know the status and/or estimated completion date for the fix and other corrective actions.

Remember, the only purpose for an aircraft accident investigation is to determine what caused the accident. Then necessary actions are taken so that a similar accident does not occur again. We can all learn from previous accidents. It doesn't make sense to "re-invent the wheel" every few years.

AIRCREW PRIORITIES

By Maj John Tillander
TAC/DOVF

TAC had a recent major aircraft accident in which the aircraft was destroyed and the crew narrowly escaped injury. While the malfunction which led to the accident may have been peculiar to the aircraft involved, lessons learned apply to all TAC aircrews.

The minor malfunction which began the series of events leading to the accident did not require an immediate landing. Nevertheless, the time from the initial call to tower with the problem to ejection on the runway was less than two minutes. This did not provide time of either the crew or the supervisor of flying to analyze the situation and consider alternate courses of action. Fuel, weather, and air traffic were not factors, but the crew elected to continue the approach to a full stop landing. The crew ejected during the landing roll when they lost control of the aircraft.

Aircrews must be aware of the priorities which have been established in Section III of each flight manual: (1) maintain aircraft control; (2) analyze the situation and take proper action; (3) land as the situation dictates. When these priorities are reversed, an accident is probable. All of the facilities available to a wing to assist a crew in an emergency; all of the experience, knowledge and procedures, are of no use to the aircrew ... unless they take the time to request help.

BUG-SMASHER STRIKES AGAIN

After leveling at 1,600 feet MSL, the Flight of four F-4s was cleared to climb to 12,000 feet. As they passed through approximately 5,500 feet MSL, the flight took evasive action in the vertical to avoid a civilian aircraft. The flight immediately notified departure control that they had just passed within 200 feet of another aircraft and asked if they had the civilian on radar. The reply was negative. The pilot of the civilian aircraft subsequently filed a near-miss report.

Both aircraft were in VMC at the time of occurrence. The Phantoms were flying under IFR at the time, and the civilian was VFR.

Radar facilities may not be able to see small VFR aircraft if they are not transponder equipped. Separation is only provided between IFR aircraft. When you're flying near civilian airports, keep the head out and watch for the Bug-Smashers ... midairs ain't no fun!

FORMATION LANDING

The Phantom was maintaining wing position during a formation full-stop landing. Shortly before touchdown, the pilot checked for proper runway alignment. During the check, he allowed the aircraft to get high on the leader. Touchdown occurred shortly after the correct vertical position was attained. However, the jet landed on the right side of runway ... about eight feet from the edge. The pilot realized the proximity to the runway edge and initiated corrective action. Unfortunately, it was too late and the aircraft departed the runway.

The aircraft had traveled approximately 400 feet before the right main gear departed the runway surface. The right landing gear contacted a runway light, damaging both the landing gear and gear door.

When you're flying a formation landing, maintain the proper position. If you can't hack the position, then go around. Don't try to salvage a bad approach ... it may only get worse.

BURNED CLOTHES WOES

A Photo-Phantom was on a cross-country flight when the rain removal by-pass valve failed with the butterfly valve in the one-quarter open position. This allowed bleed air to pass through to the rain removal outlet.

Normally, this failure would pose no problems. In this case, however, personal baggage and the aircraft 780 equipment were stored in the aft camera compartment above the high altitude camera. A plastic hang-up bag was touching the pipe going to the rain removal outlet. The pipe, heated by the bleed air passing through it, burned a hole through the plastic bag and through one-each sport coat and shirt.

If you store your personal belongings or other items in the camera area of the RF-4, make sure nothing is touching any ducting which carries bleed air. A fire in the beak area of your Phantom could ruin your whole day.

RSO SAVES PHANTOM

The F-4 had completed four touch-and-go landings. Just prior to touchdown on the full stop, the Runway Supervisory Officer (RSO) issued instructions to the Phantom pilot to go around and leave the wheels down due to a blown tire. The aircraft was set up for a straight-in approach and a successful barrier engagement was made.

It's this type of vigilance that prevents accidents. Well done.

LIFE SUPPORT UPDATE

Capt Mike Byers
TAC/DOXBL

TACR 501-1

As the result of the February 1976 TAC Life Support Conference, we're combining all the TAC 501-series regs into a single publication (TACR 501-1). This reg will be easier to use and quicker to change as needed. Chapters and pages will be set up like a Tech Order; 1-1, 2-1, etc. Hopefully, TACR 501-1 will be in the field by July 1976.

LIGHTWEIGHT HELMET

Things are starting to move in the lightweight helmet program. If the planned lab tests turn out as expected, there will be four different lightweight helmet designs to test and fly during AIMVAL/ACEVAL. This will give us a good chance to see what designs work best - in a realistic, demanding environment. We're also pressing for flight tests of the British P and Q oxygen masks, since these masks look like they may help solve the problem of mask retention during high-G maneuvers. The good guys at Aerospace Medical Division (AFSC), the USAF School of Aerospace Medicine and Aeromedical Research Laboratory have given us great support and assistance with both the helmet and mask.

The first (and possibly last)
ANNUAL TAC LIFE SUPPORT CAPTION CONTEST

The photo below deserves a caption, and we, as they say in the paper-pushing business, would like to solicit your inputs. The winning caption, as selected by our resident English major (actually an American captain) will be published in TAC ATTACK. The writer will receive a nifty prize for his or her efforts. (Exactly what, we'll figure out later.)

Entries should be sent to HQ TAC/DOXBL, Langley AFB, VA 23665 (include your name and address). Entries must be received by 7 Jun 76. In case your Aunt Minnie wonders about us, the photo isn't really Cousin Ralph, the jet pilot who didn't eject in time. It's only an unfortunate dummy who fell victim to an ejection seat test failure.

HOT STUFF

AFSC Safety Management Newsletter and the US ARMY AVIATION DIGEST have both published info on the hazards of wearing underwear made of nylon or other synthetic fiber under Nomex flight suits. Synthetic fibers tend to melt at around 300 to 400 degrees F, and although the Nomex will delay heat transfer, sufficient exposure to fire will melt the synthetic even though it's under the Nomex. The Army has a case on record where the Nomex provided protection from the fire, but the individual received fatal burns from melted synthetic underwear. The solution? Until Nomex underwear comes along, wear only cotton or wool underwear under your flight suit. Flaming jockey shorts you can do without.

(ADAPTED FROM AN ARTICLE, "HOLIDAY FROM DANGER," PUBLISHED IN THE NOV 1971 ISSUE OF TAC ATTACK)

The gallery was quiet; they knew what the sentence would be. They had heard it all before ... had seen it ... had experienced it themselves ... they knew.

Perhaps the man knew also. The grimace on his face seemed to indicate that he suspected it, as he stood to receive the sentence.

The man in the long black robe pointed a gnarled finger at the accused. The gallery cringed and became even more subdued. The fingertip quivered as the robed man's voice boomed, "Having been found guilty, you are sentenced to a ..."

The crowd in the gallery grew wide-eyed and each held his breath for what he knew was coming next .... The robed man swallowed, paused for a brief moment, then continued, "... sentenced to a (choke) Ground Safety lecture."

The guilty man screamed.

Some in the crowd began crying, others were moaning in a kind of rhythmic chant, while some leaped up and began clawing their way to the door, only to be beaten back by club-wielding guards.

The guilty man fell on the floor and began sobbing pitifully, "Why me? Why me?"

The sounds of the hysterical crowd and the sobbing man were silenced by the pounding gavel of the man in the robe. Once again the voice blasted, "Why you?" and again more loudly, "Why you? Listen again to the evidence and answer your own question."

Police officers scooped the quivering man from the floor and ground him into the chair as the man in the robe leaned forward, grasping the edges of the high bench. "Remember your boating trip last Memorial Day weekend?"

The man stopped quivering and began to think back to May. The judge continued. "You were really quite impressive with your display of seamanship. I'm sure that water skier was impressed by your speedy attempt to find out why he was holding that ski up in the air. Unfortunately, he was not too impressed with your warp three trip over his location. To this day, he doesn't know how he managed to dive 10-feet underwater with a lifebelt on. He did offer this court his appreciation for your providing him with a lifetime supply of toothpicks, however. He will settle for court costs and a new water ski.

"Your family was very appreciative of the unscheduled swimming party you organized that very same day. Remember how you so bravely challenged the wake of that 25-footer? Your wife is especially grateful for the opportunity to learn that your whole family was capable of swimming more than a mile - fully clothed."

"Hurray for drownproofing!" chanted the crowd in the gallery.

"And how about your camping trip?" the robed one continued. "You DO remember your trip to the mountains don't you?"

The man's face went blank, then he scratched his head, knocking his hair piece to the floor, exposing his totally bald head. He scrambled to retrieve it as the voice behind the bench continued ...

"Yes ... I see it's coming back to you. It was a real exciting trip, with all the fun-little surprises you are famous for. Forgetting to safety-chain

the trial

the camping trailer to the car provided the family an unforgettable sight as they watched the trailer pass your car going down that mountainside!"

"Oh, the poor family," moaned the audience.

"Of course, that wasn't so bad. After all, you managed to salvage most of your camping gear and pack it into the car trunk - the kid's pup tent, the blankets and sleeping bags and the charcoal grill ... ahh, yes ... the grill .... You performed a mighty spectacular show that evening when you decided to start that grill up with the help of a quart of white gasoline. Imagine your family's surprise when the blast not only blew burning briquets brightly into the sky, but set your tent and sleeping bags on fire. I can imagine your astonishment at having your hair - and a layer of cranial skin burned off. It must have been a very relaxing vacation, with you in the hospital in Upper Rubber Boot, Montana, and your wife and kids in the Bide-A-Wee Motel."

At the mention of his home town, one old man in the crowd began applauding and was immediately mobbed by those around him.

The sound of the gavel stirred the mob to submission as the man in the robe continued. "I'm sure you remember the backyard party you threw on the Fourth of July weekend."

The man grinned sheepishly.

"Very well, I see that you remember at least a part of it. You were a great host. The booze flowed freely and you were pouring with a flourish. Your powers of persuasion were fantastic. Take that good friend of yours who wanted to take a taxi home ... you convinced him that he was perfectly capable of driving home .... I'm sure he'll thank you properly himself when he comes out of the coma. Yes, you were the perfect host. Your family certainly appreciates the fact that you drove another friend home yourself because he was too drunk to drive. It's a shame the police spotted you. Unfortunately those balloon tests are fair and, yes, the fine for DWI is pretty stiff."

"Down with the fuzz," the crowd shouted.

The police officers in the court rose slowly from their chairs and started to move toward the crowd.

"Long live the protectors of law and order," said the crowd, changing chants quickly.

The man in the long black robe leaned back in his chair and surveyed the convicted man. "Your holidays were certainly filled with excitement last year, but what about this year; are you going to take a holiday from danger?"

The convicted man bounded from his chair spurting a series of "Yes Sirs." Then he paused for a moment and asked, "Your Honor, when must I receive the sentence ... the (shudder) Ground Safety lecture?"

"Mister," the judge said, rising from the bench, "You've already had it. Case closed!" ➢

TAC ATTACK TEST REPORT

Have you ever wondered how the TAC ATTACK Staff solves difficult problems ? What kind of scientific testing we employ ? Our step-by-step reasoning that provides amazing (at times brilliant) conclusions ? Here's an example of the Staff at work :

TEST #1

PREPARATION: *Removed the front two legs from Grasshopper and placed it on table top.*

TEST: *Gave the verbal command: Crawl !*

RESULT: *Grasshopper crawled.*

TEST #2

PREPARATION: *Removed second set of front legs from same Grasshopper and replaced it on table top.*

TEST: *Gave the verbal command: Crawl !*

RESULT: *Grasshopper crawled.*

TEST #3

PREPARATION: *Removed the back legs from same Grasshopper, leaving him no legs, and replaced him on table top.*

TEST: *Gave the verbal command: Crawl !*

RESULT: *Grasshopper did not crawl.*

CONCLUSION *It has been determined beyond all doubt by a series of tests using exacting scientific methods that a grasshopper, with all it's legs removed...can no longer hear !*

Any questions ?

FUNNY FOTOS

funny fotos

MAY 1976


THIS IS THE LAST TIME I TRAVEL "SPACE-A" !


NOW THIS PLACE HAS GOOD FOOD, BUT A LOUSY FLOORSHOW... TRY THEIR LASAGNE ON MONDAYS...

CHOCK TALK

chock talk

...incidents and incidentals with a maintenance slant.

#£$☆WRITE IT UP !

By Capt Jim Aucoin
TAC/SEPS

The "Eagle" ground aborted for a faulty fuel reading. Instrument specialists requested panels 66 and 69 be removed to facilitate their troubleshooting. The crew chief removed panel 69 and had started on panel 66 when a thunderstorm stopped work, and the aircraft was towed to a hangar to finish the job. At shift change, the appropriate Form 781 entries for panel removal had not been accomplished. A crew chief from the second shift was sent to the hangar to assist the instrument specialist. He noticed that panel 69 had been removed and made the appropriate Form 781 entry, but since panel 66 was covered by the speed brake, its condition (loose bolts) went unnoticed. The instrument specialist found the faulty fuel probe under panel 69, secured the panel, and cleared the Form 781 entry. No further maintenance action was required under panel 66, so it went undetected during maintenance and aircrew preflights. When the Eagle flew again, she lost a "feather" (panel 66).

In July 1975, TAC ATTACK published an article that listed four rules that could put the lid on the dropped object problem. Here's a summary:

1. Completely remove or open; completely install or close. Never partially open or replace a door or panel. Always enter work accomplished in AFTO Form 781.

2. Replace all worn or broken fasteners when they are discovered - don't wait.

3. Check Tech Order procedures and adequacy of local directives/checklists as well as quality of training programs.

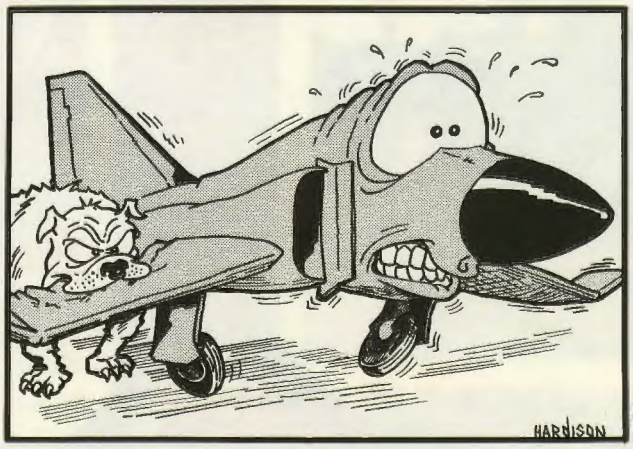
4. Look for unusual appearances of any aircraft component. Delamination, loose fasteners and surface cracks can be symptoms of a potential dropped object.

BOWSER BITES PHANTOM

An F-4 was recently injured after it was bitten by an out-of-control fuel bowser. The bowser's brakes had not been set properly. A wind storm with gusts up to 38 knots propelled the bowser from its parking spot 75 feet across the parking ramp into the right aileron of a napping F-4. The Phantom recovered after surgery, which cost $781.00.

Bowser's supervisors were also at fault. There were no local procedures in effect to require removal of drip pans from the flight line.

Once again - don't get caught napping with cumulonimbus on the loose. Get a severe weather plan that's simple and effective - before it's too late.



DROPPED OBJECTS

Part 1 BAD SCREWS BLUES

During the Photo-Phantom's postflight inspection, the crew chief discovered the upper left stabilator wiper cover plate missing. A one-time inspection of all aircraft in the wing was made to determine if any maintenance or materiel problems existed with the wiper cover plate. Results of the inspection revealed that 50 percent of the aircraft had improper size retainer screws installed! Additionally, there were no Tech Order specified screws in bench stock. There were no materiel problems with the wiper cover plate.

The lack of readily available proper screws may have contributed to the installation of screws of the wrong size. Another item of interest was that approximately 30 of the unit's aircraft were recent deliveries from worldwide resources. Some of these also had incorrect screws installed, indicating the problem may be worldwide.

Are the wiper panel retainer screws on your unit's Phantoms the correct size? Are bench stock levels for retainer screws adequate at your base? A quick check of these two items could prevent another dropped object.

Part 2 LOOSE DZUS BLUES

While performing a functional check flight, the F-100 pilot felt a thump. During the landing, the RSO noticed that a panel was missing from the aircraft.

The panel (F-32) is normally secured by the four rows of dzus fasteners. The upper and lower longitudinal rows consist of seven fasteners each - forward and aft vertical rows contain four fasteners each. Nut plates of both vertical rows were damaged, indicating these fasteners had been forced out of the plates. Neither of the longitudinal rows exhibited any damage, indicating that the fasteners had not been secured. "Murphy" managed to get into the act also. The fasteners in this plate will fit flush with the panel even if they are not secured. Because of this no one noticed that the panel had not been completely secured.

Next time you remove and replace panels on any aircraft - be it 0-2 or F-15 - make sure all the fasteners are secured before you leave the work area. It just might prevent a dropped object ... again.

Hey! pass it along... nine others are waiting.

PRIOR PLANNING PREVENTS...

By Capt Marty Steere

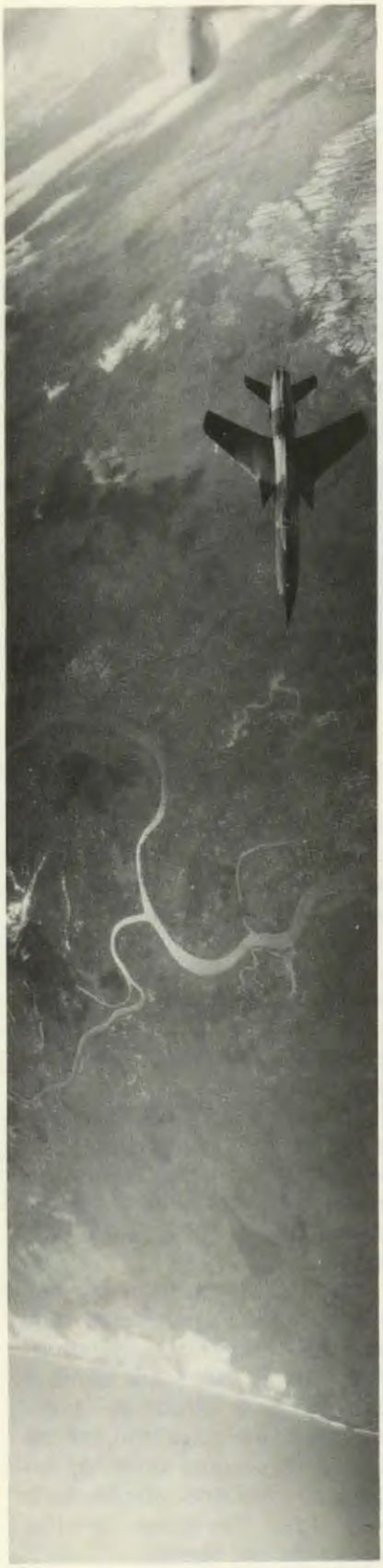
TAC fighter pilots have entered a new era of realistic training. Operation "Red Flag" and exercises such as "Bold Eagle" allow fighter pilots to train in an environment as close to the real thing as possible. For the first time in a long while, TAC pilots are dropping live munitions instead of little blue bombs. All aspects of weapons employment will be used ... from level deliveries to pop-ups. One obvious result is that we will have aircrews better prepared to do the mission ... to put ordnance on target and destroy the enemies' capability and will to wage war.

OK, so that's the good news! What's the bad? So far this year, TAC has lost three aircraft and three aircrew members during this realistic training. If losses such as these keep occurring, it is conceivable that training could be curtailed. It's up to you to ensure this doesn't happen ....

How do you ensure a successful flight? The answer is adequate preparation. Getting ready for these missions will take more time and effort than for anything you've done in a long while. The first place to start is the flight manual. The Dash-One will tell you if there are any handling characteristics peculiar to heavyweight operation and what happens to aircraft when you hang bombs, missiles, CBU, or other things on the airframe. With changes in aircraft CG, longitudinal stability of your aircraft may change and handling qualities may be degraded at various airspeeds and altitudes. The gay blade who horses a jet around in this situation may get more than he bargained for.

Next, the Dash 34 weapons delivery manual should be consulted. It's a safe bet that it's been a while since you've dropped live munitions, so a thorough review of safe separation envelopes, arming times, and munitions preflight is a must. If you're a mud pounder, you might want to dig out some of the past FIGHTER WEAPONS REVIEW articles on bombing techniques. Your wing weapons weenies should have an up-to-date file of that excellent magazine.

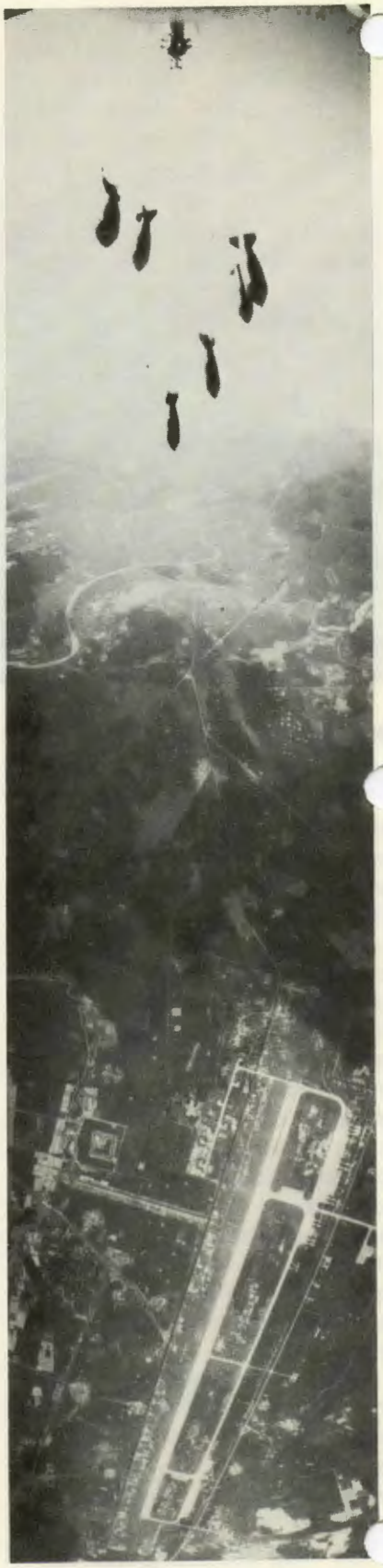
MCM 3-1 should be reviewed prior to participation in any Red Flag type operation. The tactics listed are combat proven and effective. Individuals in the squadron can be tasked to prepare briefings on various weapons employment methods. Everyone in the squadron will benefit.



The last aspect of the planning stage involves human factors. When you consider that aircrew error was involved in 50 percent of 1975 major aircraft accidents, it's obvious that more emphasis has to be placed on this. Significant factors were: poor scheduling, inadequate briefings, and the lack of a definite mission objective. Aircrews were scheduled on missions/events for which they were minimally qualified for or not proficient. Inexperienced flight leads were scheduled to lead missions that they were not capable of leading. Briefings were often inadequate in content, cut short, or nearly nonexistent. When you are going to fly one of these demanding missions, start your briefings earlier than normal. Ask questions. Make sure everyone knows exactly what is to be done, and how it's to be done. If you don't feel a member of your flight is ready for the mission, tell one of your supervisors. Above all, plan the mission with the least experienced member of the flight in mind.

Just one more thing. If things do turn brown ... if you do get out of control below your minimum ejection altitude, do your friends and family a favor ... eject ... now. Remember those three major accidents I told you about? They included two single-seat jets and one two-holer. Three of the individuals involved are dead. Don't you wait until it's too late.

That's the story. Now it's up to you. The time to start is now, before you're tagged to fly in one of these exercises. Plan well and have a good flight!



PHYZ-BIZ

The "NEW LOOK"

By Lt Col Harold Andersen
HQ TAC Physiological Training Coordinator

The latest in AF "new looks" is scheduled to arrive on the scene 1 Jul '76. No, this new look isn't a uniform, weapons system, or a supply system; it's a new management concept for physiological training facilities. It's objective is a reduction in operating costs while still accomplishing quality training.

At this time, plans call for a total of seven (7) Physiological Training Units (PTUs) to be placed in a "limited operational status." Three TAC PTUs will be affected (Langley, Moody and George), two SAC PTUs (Carswell and Offutt), one ATC PTU (Randolph) and one ADC PTU (Tyndall). Unit manning will be reduced to two NCOs, who will remain in place to maintain the facilities and schedule training.

Training will be accomplished during a one or two week period each month. For example, the Langley PTU will continue to provide training after 1 July to the same organizations as now, but with one major difference; all training for any given month will be accomplished during one week, instead of spreading over four weeks as is the current practice. During that week, the Langley cadre will be augmented by TDY personnel from the Shaw AFB PTU. Obviously, there must be advance planning, not only by the PTU, but also by those organizations whose aircrews will require training under AFR 502-7. Aircrews must be identified several months in advance of the expiration date noted on the AF Forms 702 and 1274. If scheduling organizations identify their requirements sufficiently in advance of the expiration date, there should be no groundings due to delinquencies.

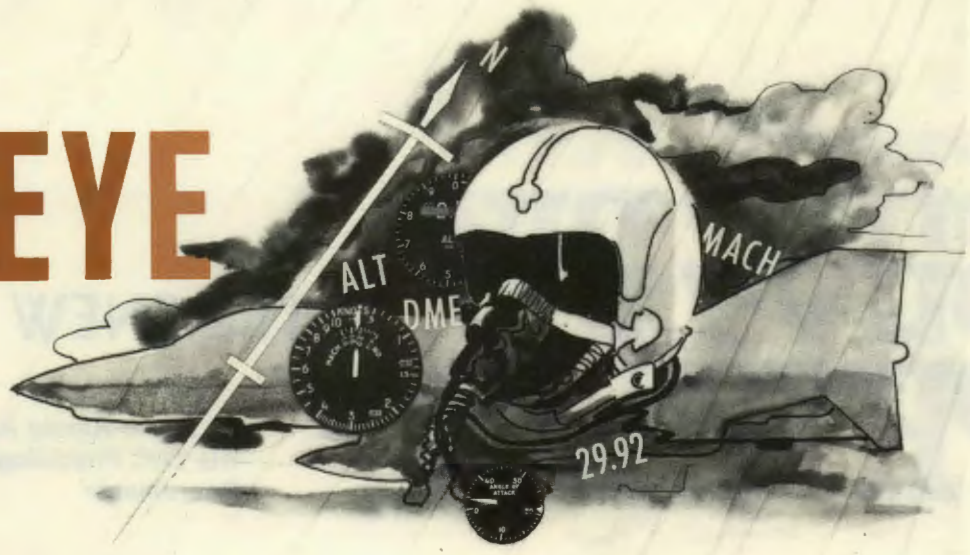
We have already indicated that Langley will be supported by the Shaw PTU; the other TAC PTUs will be treated in a similar fashion - George will be augmented by Edwards, and Moody will be backed up by MacDill.

That's the line-up, folks. The concept will permit dollar savings, as personnel reductions are made. The long-run is also considered, by recognizing that if USAF force strength increases are required, the physiological training facilities will be ready to return to full-time operational status with minimum difficulty. The physical facilities will be maintained in their current configuration. No structural changes will be made to accommodate other activities, nor will extraneous organizations be permitted to defeat the plan by moving in on a permanent basis. Classroom facilities will be made available for the support of bona fide training activities by other organizations when physiological training classes are not scheduled.

How does this affect the aircrew? We'll have less flexibility in meeting his training requirements. We'll no longer be able to juggle the scheduled physiological training dates to accommodate the individual as we have in the past. In all probability, if a person misses his training date, he will go delinquent - a situation we all want to avoid.

So, that's the "new look" in physiological training - it can be a cost-effective management tool, but only if we all plan ahead and cooperate. Help us make it work. ➢

POPEYE



LITTLE KNOWN FACTS

By Capt M. C. Kostelnik
Test Project Officer
4485th Test Sq
Eglin AFB, FL

TEST YOUR KNOWLEDGE

1. 30° is the maximum angle of bank for high-performance aircraft such as the F-4 engaged in instrument flight.
A. True
B. False

2. You must determine the descent rate required to maintain the glide path prior to a PAR final approach.
A. True
B. False

3. When the IAF is located outside of the holding pattern, adjust the pattern so as to be at the IAF at the Expected Approach Clearance (EAC) time.
A. True
B. False

4. Altimeter check points are required at all Air Force bases by AFR 55-48.
A. True
B. False

Read the following information and see if your answers remain the same.

30° of bank: According to AFM 51-37, "For turns of more than 30°, a bank angle of 30° is normally used." The manual goes on to say, however, that "High true airspeed and/or flight manual procedures for the equipment used may require other angles of bank." Remember that AFM 51-37 is written for all types of Air Force operated aircraft and "provides adequate guidance for instrument flight under most circumstances, but it is not a substitute for sound judgement. Circumstances may require modification of prescribed procedures." There are specific instrument maneuvers addressed in AFM 51-37 which do specify a maximum angle of bank. Turns in holding, for example, and the transition to final for a radar approach are both limited to a maximum of 30°. There may also be Flight Manual limitations which must be observed. In the F-4, for example, the maximum angle of bank for a TACAN penetration is 30°. We may summarize by saying that 30° of bank is a useful guide for the maximum angle of bank for all types of aircraft engaged in instrument flight. However, there may be specific instances where high-performance aircraft like the F-4 are not limited to 30°. Remember though, that 30° of bank is a good guide for most instrument maneuvers and may, in fact, be the maximum for others. Angles of bank greater than 30° in the weather may cause spatial disorientation, so use

discretion in selecting bank angles greater than 30° without ample justification.

Transition to Final: The following guidance has been extracted from AFM 51-37 under the transition to final procedures. "Start the Before Landing Checklist (landing check), review approach minimums, and tune navigational equipment to comply with lost communication instructions when practical. Determine the final approach airspeed and the approximate initial descent rate required on final approach." Pilots may satisfy this requirement by any one of several methods. The pilot may estimate the descent rate required based on past experience. He may elect to use the ground speed/angle of descent chart in the Terminal Instrument Approach Procedures Booklet (figure 1), or he may compute the desired descent rate using one of the following techniques:

A. Determine the descent rate (Ft/Min) for a 3° glide path using the following formula.

Desired VVI (Ft/Min) = $\frac{\text{GROUND SPEED}}{2} \times 10$

Note: For glide paths other than 3°, add or subtract 100 FPM for each 1/2°.

Example: Ground speed120 Kts. VVI = $\frac{120}{2} \times 10 = 600$ FPM

B. You may also estimate the descent rate by multiplying the glide path angle by your groundspeed expressed in nautical miles per minute X 100.

Example: Groundspeed120 Kts NMPM = 120÷60=2. NMPM X 100 = 200 3(°) X 200 = 600 FPM

In order to find the approach glide path, refer to the IFR supplement, review the Terminal Approach Plate, or simply ask the controller. Find the glide path in the Terminal excerpt shown in Figure 2.

ANGLE OF DESCENT (degrees and tenths)	GROUND SPEED (knots)										
	30	45	60	75	90	105	120	135	150	165	180
2.0	105	160	210	265	320	370	425	475	530	585	635
2.5	130	200	265	330	395	465	530	595	665	730	795
3.0	160	240	320	395	480	555	635	715	795	875	955
3.5	185	280	370	465	555	650	740	835	925	1020	1110

Figure 1: The Angle of Descent/Groundspeed Chart

Expected Approach Clearance Time: According to AFM 51-37, "The holding fix for a holding pattern that is used in conjunction with a terminal approach procedure should coincide with the initial approach fix (IAF). When this is impossible, the IAF should be located within holding airspace on the holding course. There are terminal approach procedures, though, where the IAF is located outside the holding pattern. Adjust the pattern so as to be at the published point of departure from the *holding pattern* (our italics) at the Expected Approach Clearance (EAC) time." In the example shown (Figure 3), the pilot should plan to depart "Lucky" (15 DME) at the appropriate EAC time.

CATEGORY	C	D	E
S-ILS-24	500/24 200 (200-½)		
S-LOC-24	620/40 320 (400-¾)		
S-NDB-24	780/40 480 (500-¾)		
CIRCLING	840-1½ 529 (600-1½)	860-2 549 (600-2)	880-2 569 (600-2)
S-PAR-24	400/16 100 (100-½) GS 2.5°		

Figure 2: Terminal Approach Segment

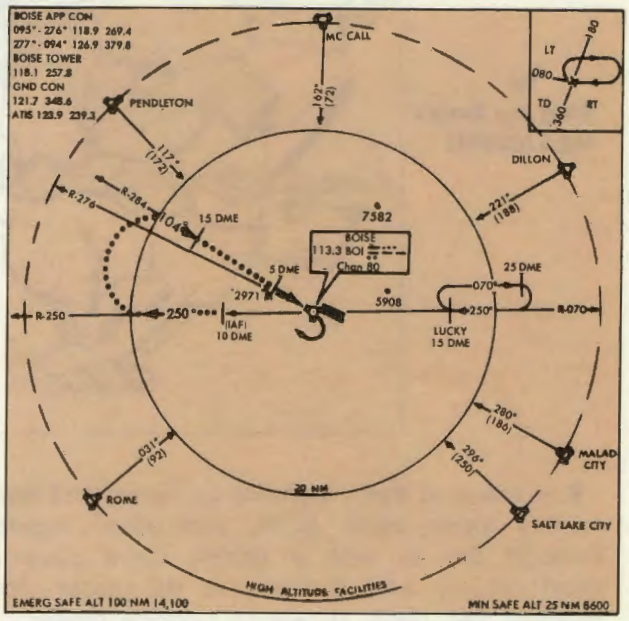


Figure 3: Sample TACAN approach with the IAF and Holding Fix not collocated

Altimeter Checkpoints: Altimeter check points are required at all Air Force bases by AFR 55-48 (Base Operations Regulation), if the takeoff end of the runway varies more than 25 feet from the official field elevation. The takeoff end of the runway, then, should be the best place to complete the altimeter check. Use the placarded elevation if posted, otherwise use the published field elevation. Be wary of altimeter checks in the chocks as the actual elevation on the ramp may vary significantly from the published value.

THE MONSTER

by
SMS Jim Savoie
HQ TAC/SEG

It is made of steel, it chews up hands and feet, hurtles rocks, nails, glass, and other objects through the air with a deadly force causing death, injury and damage to its target. The monster has been known to breathe flames or even explode when its master does not treat it right. Most of us keep this monster penned up in our homes, because it also cuts grass. That's right, it will soon be time to get the mower out and get it ready for the weekly job that no one looks forward to. Well, before you do, we have some reminders for you and your family that must be adhered to or the steel monster will getcha'.

Always check the lawn for any obstacles that could be thrown by the blades.

Wear heavy duty shoes, preferably safety shoes. Never wear tennis shoes or go barefooted while mowing.

Each year many people lose toes when they stumble or somehow pull the mower over their feet. NEVER cut grass by pulling the mower towards you.

Each year many people lose fingers while attempting to remove debris from the area of the blade with the engine running. ALWAYS stop the engine and disconnect spark plug wire before checking or working on the mower.

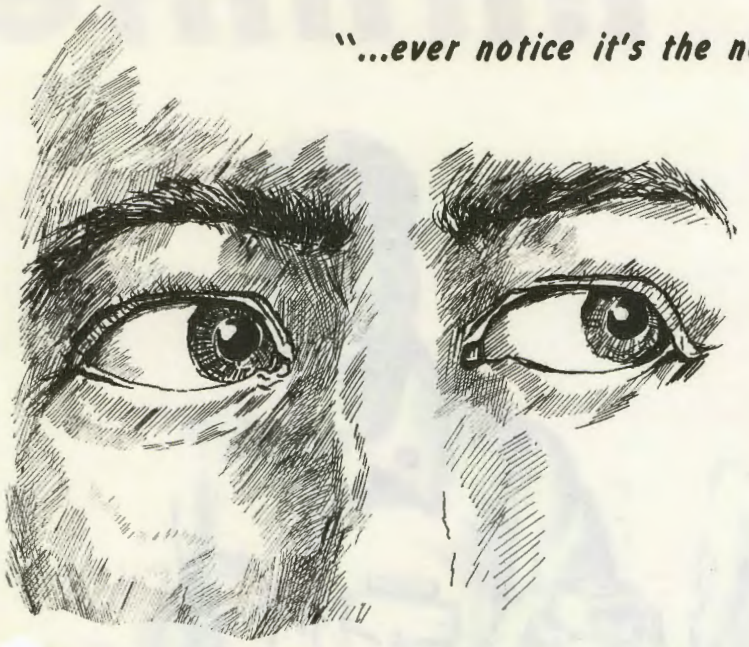
STOP the engine when you leave the mower, even for a moment.

NEVER add fuel to a running engine. Remember, the extra gasoline is a hazard to your home. Store it outside in a metal can.

Keep all shields and safety devices in place.

To keep from getting the shock of your life, DO NOT use an AC-powered electric mower in the rain or when grass is wet.

"...ever notice it's the new guy who sees the hazards ?"



it's called... AWARENESS!

By Capt Ted R. Powers
Flight Safety Officer, 1st TFW
Langley AFB, VA

Have you ever noticed how it's the new person in the outfit who notices the hazards? It may be that grinding wheel with the broken eye guard, or that blind corner by the Base Exchange. It may be a spot by the shop door that gets really slippery when it rains, or the bad lighting at the ball park crosswalk. They are the subtle hazards that you just don't notice. Why is it that the new person is the only one who seems to mention it? It's called awareness.

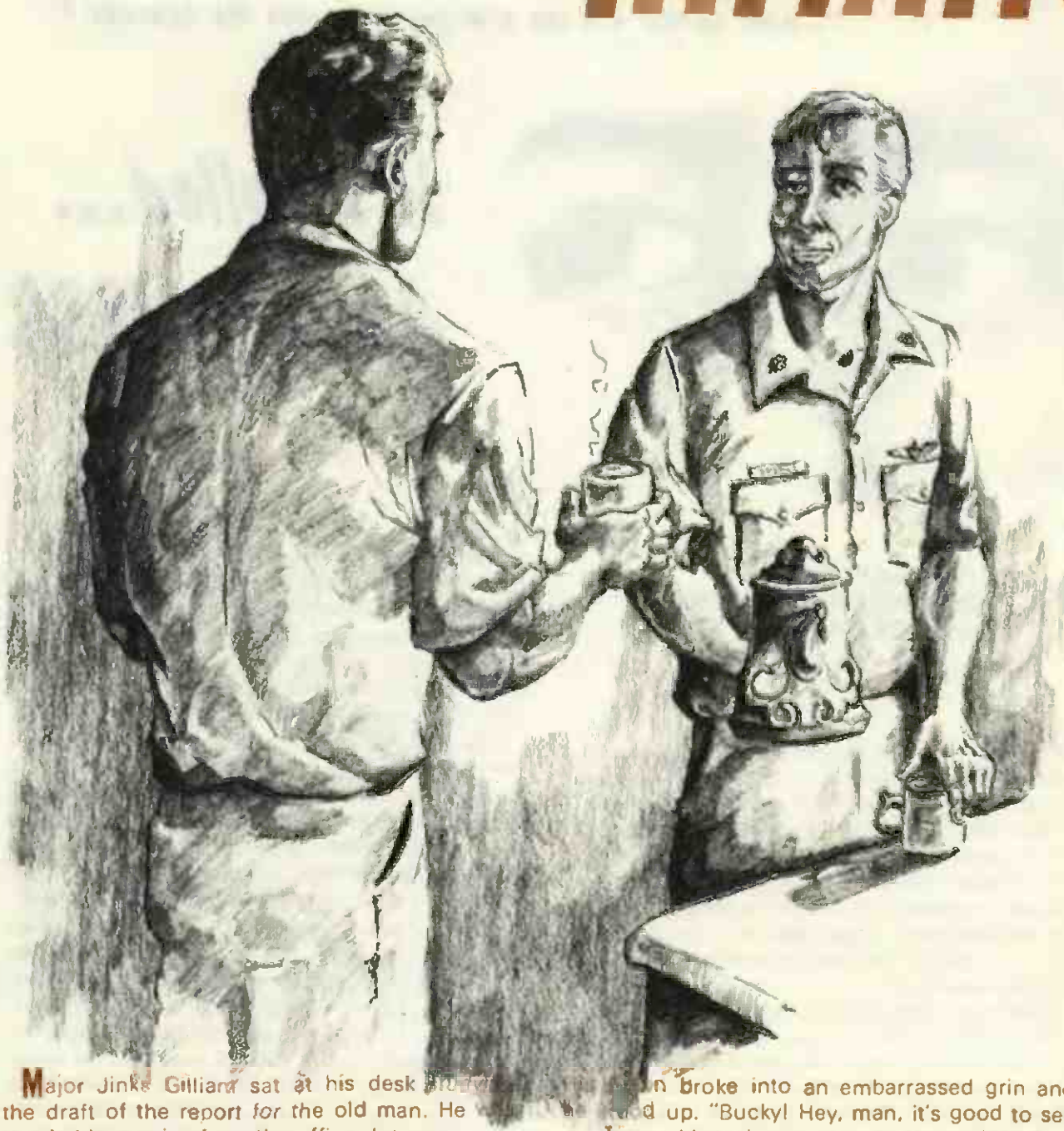
When you think about it, you probably complained about some of the same things when you first arrived. Then you got involved in the job and just kind of forgot about them. You learned to live with the problem. You compensated for it by being a little more careful, or driving a little bit slower. After a while, you didn't even remember it was there!

The problem is the hazard doesn't go away! Most people will be able to adequately compensate for it ... most of the time. It becomes a trouble spot when you let your guard down just a little bit! *It's Friday night, you've just left the Club after meeting an old friend you haven't seen in years. Your mind's not really on driving and you're approaching that poorly lit crosswalk after the Little League game ...*

The often recognized hazards on most bases are numerous, but we tend to forget them. It's a natural process. The human being is a remarkably adaptable creature and so you adjust to the environment and go about your normal routine. Unfortunately, that doesn't highlight the problem and, therefore, it doesn't get corrected.

Take a look around you when you drive to work the next time. Really look! See if you can recall the things that needed to be corrected when you first observed them. They'll start coming back. If they are definable hazards that can be corrected, visit or call your base safety office and get the ball rolling. Oh, and don't stop looking when you've completed the drive to the shop. Make it a significant contribution to your base. You may even save someone a fast trip to the hospital ... from that grinder ... or the crosswalk by the ball park ... or ...?

infinite



Major Jinks Gilliam sat at his desk [illegible] the draft of the report *for* the old man. He was startled *by* a voice from the office doorway.

"Hey, Major, how do I get out of this chicken outfit?"

Jinks looked up, irritated at the interruption. [illegible]n broke into an embarrassed grin and [illegible]d up. "Buck! Hey, man, it's good to see you again. I heard you were coming up here."

The two shook hands warmly and Jinks guided Captain Buckingham to the corner of his office where a coffeemaker had just signaled the com

proposition

by Maj Joe Tillman

pletion of a new batch of brew. They each drew a cup of coffee.

"Sit down, Bucky. How's everything back in the real world? How did you end up here ... beat your boss in golf?"

Captain Buckingham studied the neutral grey carpet between his feet. "No, I had a little problem with a formation landing - you know, screw up and move up. Besides, I needed to fill this square. Jinks, what's it really like here? How do you like working for Number One?"

Jinks swept his hand to encompass the plush, quiet office and grinned sheepishly. "I like it fine, Bucky. I'm working as military liaison with the civilians here. It's kinda' hard to get used to all the feather merchants, but it's surprising how many old jocks we have up here. They say eventually you'll run into all your old buddies here. I see Joe Parrado once in a while ... you remember Joe, don't you?"

"Sure," Bucky said reflectively. "It was a shame what happened to him in Vietnam. I guess it could be expected though. Joe never was one to throttle back." Major Buckingham brightened up. "So you like working for the Old Man, Jinks?"

"Yes, I do. Right now he's down at the Reception Center briefing some new arrivals. He talks personally to all newcomers ...."

"Yeah I know, Jinks. I saw him yesterday."

"... Anyway, you'll like it here." He grinned, "It's against the regulations to be unhappy...."

The desk phone buzzed and Jinks moved over to answer it. "Yes sir," he said, "the draft is ready ... go final? OK, it'll be on your desk this afternoon, sir." He hung up the phone and moved back to the leather chair and faced his old buddy.

"Hey Bucky, do you remember when we tapped that Navy jock near Oceana? What a hassle. I didn't know an F-8 could turn like that!"

"Yeah boy, I also remember that I flamed out during taxi-back after that rat race. The old man really got me. He just chewed around it and let it fall off. You know, I was always in the barrel with that guy. If it wasn't for the ops officer I think I might have been grounded. No sense of humor."

"Boy, you got that right. It's almost as though he didn't care how good you were. Those regs got ridiculous after awhile. Hell, you felt like someone was looking over your shoulder the whole time. The only time you could do what you wanted was on TDYs ... incidentally, Jinks, I heard about your accident at Bold Eagle. What happened?"

"Stupidity, I guess. Bob Pallais and I were working a target and we kept tightening up the patterns and pressing a little. He chickened out first."

There was a long pause as the two pilots finished their coffee. The silence of the comfortable office was broken only by the muffled clicking of a typewriter from the outer office.

Major Buckingham stood up. "Gotta' go," he said.

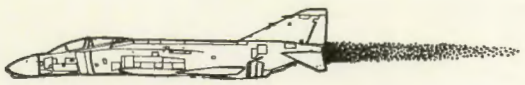
"OK, Bucky, I'd better get back to work myself. Incidentally, where are you going to be working ... at the gate?"

"Yeah, I guess everyone starts there first." He looked at Jinks and a shadow of apprehension darkened his eyes. "Tell me something, Jinks, do you miss the family?"

"No, not really. I know they'll get here eventually. I do think about how long it will be before the kids get here, though ..." He smiled, "But like I said, it's against regs to be unhappy here."

"I'm glad to hear that, Jinks, I thought it was just me."

The two friends shook hands by the door with the promise to get together and talk over old times again. Major Gilliam watched Bucky walk down the sunlit corridor, the cloud-like vapors filling the vacuum behind him as he turned in the direction of the gate. The muted peal of the choir floated through the celestial mist.



where there's SMOKE...

By Maj Joe Tillman

Major "Geech" Hamilton, TAC/DOO (Fighter Ops), recently brought us an article printed in the February 1974 issue of AIR CLUES, the Royal Air Force magazine. The article, entitled "Smoke Without Fire," examines the hazard of mistaking fire extinguisher agent (discharged in flight) for an engine fire. It seems that a Hawker Hunter, leading another aircraft on a 3-mile initial for landing, experienced a fire-warning light. Since he was too close to the runway for a straight-in approach, the pilot pulled up, transmitted a Mayday call, and maneuvered toward a low key position for an SFO landing. He extended his landing gear with the emergency system. The chase aircraft confirmed that there was no sign of smoke or fire. The lead pilot, in a good position for the flameout landing, stopcocked his engine and hit his fire extinguisher agent - just in case. This is when things went from brown to black. The Runway Supervisory Officer (RSO) noticed "smoke" coming from the aircraft's aft fuselage. The chase pilot, also reporting smoke, confirmed that lead still had a fire light, and instructed him to eject. Eject, he did. Ejection sequence was satisfactory, but strong surface winds (gusts to 35 kts) resulted in minor injuries. The aircraft crashed 3 miles from the airfield. Post-accident investigation found that the fire warning indication was false - the aircraft had not been on fire.

Causes of this accident were numerous, and 20/20 hindsight revealed many errors in judgement that were related to specific aircraft procedures. Since TAC, at last count, had no Hawker Hunters in its inventory, we'll skip these mistakes. One hazard that can't be ignored is that both the RSO and chase pilot mistook the fire extinguisher discharge as smoke from a suspected engine fire. It could happen again.

Imagine, if you will, a two-ship of F-111s doing their thing down near the dirt. Lead gets a fire light (sound familiar?). He tells number two and asks for confirmation of the fire. Chase tells him that he looks clean. Lead decides to shut the engine down anyway, and without advising his number two man, fires the bottle.

"A-h-h, I take that back, lead. You have confirmed fire in number two ... it's smoking like hell!"

Lead zooms and booms. Scratch one Aardvark. Since we're pretending, we'll say the crew made it out OK.

A prime lesson from the Hawker Hunter accident is, when possible, "hasten slowly." If you are the "chasee," advise your chase aircraft and/or the RSO when you hit the bottle so he'll expect that cloud of "smoke" from your tailpipe. Conversely, if you are the chaser or RSO, don't assume every puff from the engine is a confirmed fire. It could be a fire extinguisher agent (a short-lived puff of smoke) or, in case of a flameout, simply fuel hitting a hot burner can. Don't add to your buddy's problems by an "all speed and no direction" announcement of his ultimate demise should he fail to step over the side. Where there's smoke, there may just be smoke.

TAC TALLY

tac tally

	TAC			ANG			AFRES		
	MAR	thru MAR		MAR	thru MAR		MAR	thru MAR	
		1976	1975		1976	1975		1976	1975
TOTAL ACFT. ACCIDENTS ►	4	10	5	2	4	3	2	2	0
MAJOR ACFT. ACCIDENTS ►	4	10	4	2	4	3	1	1	0
AIRCREW FATALITIES ►	1	3	12	1	2	3	1	1	0
TOTAL EJECTIONS ►	3	6	2	0	1	0	1	1	0
SUCCESSFUL EJECTIONS ►	3	6	0	0	1	0	0	0	0

FIGHTER/RECCE WINGS		
ACCIDENT FREE MONTHS		
82	33 TFW	TAC
48	127 TFW	ANG
46	31 TFW	TAC
33	56 TFW	TAC
24	67 TRW	TAC

OTHER UNITS		
ACCIDENT FREE MONTHS		
128	136 ARW	ANG
84	135 TASGP	ANG
80	182 TASGP	ANG
79	126 ARW	ANG
76	507 TAIRCG	TAC

MAJOR ACCIDENT COMPARISON RATE 75/76

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

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
TAC	75	7.9	5.4	3.6	2.6	3.1	3.5	5.3	6.4	6.0	6.6	6.3	6.1
	76	2.9	8.6	9.0									
ANG	75	5.3	2.8	5.3	3.7	4.7	6.8	5.8	5.1	5.1	5.5	5.4	5.4
	76	10.5	5.0	6.8									
AFRES	75	0	0	0	0	0	0	0	0	0	0	0	4.9
	76	0	0	11.3									


FLEAGLE
TREVINO, EAT YOUR HEART OUT.
NOCK!
230
HARDISON
BONK!
WHAM!
WHAM!
WHAM!
WHAM!
WHAM!
THAT'S THE FIRST TIME I EVER SAW AN EAGLE GET A BIRDIE.
© Stan Hardison, 1976