

TAC ATTACK

MARCH 1985

Office	Info	Action	Initial
SE			
SEF			
SEG			
SEW			



ANGLE OF ATTACK

March signals the beginning of spring, at least at our southern bases, and rebirth from the cold of winter. In our business it also signals the beginning of deployment planning and no-notice diverts caused by stormy winds or unforecast last blasts of winter.

One thing deployments and diverts have in common—good planning prevents surprises and guarantees success. Have you taken the time to plan for that divert? Have you checked your checklist or aircrew aid for diversion data lately? In a pinch, can you really use that chart that you sweat over every time you take your open book stan/eval exams? Do you know how to maximize mileage for minimum kerosene with a headwind or tailwind? Do you know how high to climb, when to use max range vs. max endurance, when to start descent? How much fuel does it take for a tight 360 degree pattern, or another trip around the flagpole? Perhaps you can use these questions for your next situational emergency procedures training session.

Speaking of SEPTs, on page 26 this month you'll see we are resurrecting a good idea. The emergency situation training page will become a regular department in *TAC Attack* once again after a five year absence. Each month we plan to run a different emergency that can or has occurred in a particular TAC aircraft. We solicit your inputs and comments. Our first entry, written by our resident recce expert/editor, is an F-4 situation. Even if you don't fly the Phantom, you may be able to apply a similar situation to your aircraft and mentally *prepare* before it happens



to you. That's mishap prevention in action. Here at TAC Safety, we're in the anticipate mode; we emphasize prevention rather than accounting. Good planning is an important factor in mishap prevention.

If you are a deployment planner, don't forget weapons and ground safety. Live weapons delivery was stopped at one recent deployment because proper site planning had not been completed. Deployments mean working in unfamiliar surroundings and may mean working with unfamiliar host-nation equipment . . . and they usually include obvious off-duty driving hazards. Nearly all countries have stiffer DUI laws and punishments than we do. Make sure you've covered all the bases—we'll be happy to help.

You'll see on page 10 that we're looking for one good man. A pop-up assignment is springing Lew Witt back to an RF-4 cockpit this summer (see, there is justice). While a master's in journalism and 3,000 hours in various TAC fighters would be nice, a major with a proven track record and high interest in maintaining the quality of *TAC Attack* would do nicely. If that's you, call us at AV432-3658.

HAROLD E. WATSON, Colonel, USAF
Chief of Safety



HON VERNE ORR
SECRETARY OF THE
AIR FORCE

**GEN JEROME F.
O'MALLEY**
COMMANDER



COL HAL WATSON
CHIEF OF SAFETY

MAJ LEW WITT
EDITOR

MARTY DILLER
WRITER-EDITOR

STAN HARDISON
ART EDITOR

**A1C KELVIN
TAYLOR**
STAFF ARTIST

Can Do—But Not So Easy	4
Fighter employment in a chemical environment—where are we?	
Aircrew of Distinction	7
Capt David L. Lint.	
TAC Tips	8
Interest items, mishaps with morals, for the TAC aircrew member.	
TAC Ground and Weapons Safety Award of the Quarter	11
Capt Joann M. Darlington and MSgt Timothy Stalcup.	
Weapons Words	12
Working with TAC's weapons systems.	
Controller's View of a Minimum Fuel GCA	14
Cutting the confusion between a rock and a hard place.	
TAC Flight Safety Award of the Quarter	15
Capt Eric R. Puschmann.	
F-80 Shooting Star	16
Stipple rendition by A1C Kelvin Taylor.	
Blood and Guts	18
3. Land as soon as—not so fast . . .	
Chock Talk	20
Incidents and incidentals with a maintenance slant.	
TAC Crew Chief and Individual Safety Awards	23
SrA James E. Hubbard and SSgt Michael F. O'Berry.	
Here's Another Nickel on the Grass	24
Outrunning the Grim Reaper—making it less of a close race.	
Short Shots	27
Quick notes of interest.	
Down to Earth	28
Items that can affect you and your family here on the ground.	
F-4 Emergency Situation Training	30
What'cha gonna do now, Ace?	
TAC Tally	31
The flight safety scorecard.	

TACRP 127-1

TAC Attack is not directive in nature. Recommendations are intended to comply with existing directives. Opinions expressed are those of the authors and not necessarily the positions of TAC or USAF. Mishap information does not identify the persons, places or units involved and may not be construed as incriminating under Article 31 of the UCMJ. Photos and artwork are representative and not necessarily of the people or equipment involved.

Contributions are encouraged, as are comments and criticism. We reserve the right to edit all manuscripts for readability and good taste. Write the Editor, *TAC Attack*, HQ TAC/SEP, Langley AFB, VA 23665-5001; or call AUTOVON 432-3658.

Distribution F(X) is controlled by TAC/SEP through the PDO, based on a ratio of 1 copy per 10 persons assigned. DOD units other than USAF have no fixed ratio; requests will be considered individually.

Subscriptions for readers outside DOD are available from the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402. All correspondence on subscription service should be directed to the superintendent, not to TAC/SEP.

TAC Attack (ISSN 0494-3880) is published monthly by HQ TAC/SEP, Langley AFB, VA.

POSTMASTER: Send address changes to *TAC Attack*, TAC/SEP, Langley AFB, VA 23665-5001.

Second-class postage paid at Hampton, Virginia, and additional mailing offices.

CAN DO but not so

By Maj Alan R. McClure
Chief, Training/
Employment Branch
Chemical Warfare Defense
Division
USAF Tactical Air War-
fare Center
Eglin AFB, Florida

Fighter employment in a chemical warfare environment — where are we? If you've flown any supervised training missions wearing chemical warfare defense (CWD) equipment, you are probably painfully aware of some of its limitations. While wearing the full CWD ensemble, could you effectively employ your weapons system in a wartime chemical environment? Could you really use the tactics you'll need to get to and from the target, the ones you've practiced without chemical gear?

The answers to these questions are critical; yet, until recently, they have been largely a matter of conjecture. The USAF Tactical Air Warfare Center (USAF TAWC) at Eglin AFB, Florida, has completed the initial phase of an ambitious tactics development and evaluation (TD&E) aimed at evaluating current combat tac-

tics for tactical aircraft flown by aircrews wearing the full CWD ensemble. These efforts should give us some concrete answers.

During the initial preparation of the TD&E plan, doing the mission safely naturally played an integral part in defining the scope and limitations of the TD&E. How do you perform realistic combat tactics while wearing the very CWD ensemble that has resulted in so many training restrictions — most of which are safety related? Can do — but not so easy.

The USAFTAWC Commander directed a step-by-step building block progression toward advanced tactical scenarios. For the initial efforts, however, some complex mission events (flying formations of greater than two aircraft, delivering precision-guided munitions, and flying night missions) were deferred to future TD&Es.

First, the test team began a literary search to collect and study the known limitations and deficiencies of the aircrew CWD ensemble. As you might imagine, the problems were well documented. Some of you had a hand in recording your

observations in summaries of tests and CWD operational exercises. USAF data on the effects of the *full* aircrew ensemble in an operational environment were obtained from tests conducted by USAFTAWC during 1978-79. Because the F-16 wasn't operational then, a similar evaluation of F-16 pilots was conducted in December 1981. Since those test results were still fresh, the F-16 was chosen as the first fighter to participate in the current TD&E with the A-10, F-15, F-4 and A-7 to follow. The initial F-16 flights began in December 1982.

Flyers from USAFTAWC's 4485th Test Squadron at Eglin were complemented by A-10 pilots from the 128 TFW at Madison, Wisconsin, A-7 pilots from the 114 TFG at Sioux Falls, South Dakota, and F-4 aircrews from the 122 TFW at Fort Wayne, Indiana. The test team also received assistance with tactical considerations from the ANG/AFRES Fighter Weapon Office at Tucson, Arizona.

After reviewing the basic objectives, the TAC/DO waived (MCM 51-50, Chapter 6) CWD training restrictions and approved two equipment changes to the CWD ensemble that in-

easy

creased the margin of safety for the TD&E. One significant change was the use of the new HGU-55/P lightweight helmet in place of the HGU-39/P helicopter helmet. Although designed for everyday use, the lightweight helmet, with a minor modification to the liner, is fully compatible with the current MBU-13/P CWD mask.

Another change was the use of new 7-mil thick butyl rubber gloves with full-length inserts instead of 17-mil neoprene CWD gloves with half-length glove inserts. These changes were considered appropriate because the new equipment will soon be available in the field. Another equipment change was dictated during the F-16 flight certification process when rocket sled ejections of a dummy dressed in the CWD ensemble identified the HGU-41/P chemical hood as a potential interferent with the pitot tubes of the ACES II ejection seat. Therefore, the hood was eliminated from F-16, F-15 and A-10 TD&E sorties.

The test team divided each TD&E into phases according to the aircraft mission with current two-ship tactics flown as a baseline. Flights began with one aircrew dressed in the



CAN DO but not so easy

CWD gear and a wingman wearing normal flight clothing. Missions increased in complexity until all events were performed with aircrews in both aircraft wearing the full chemical ensemble. The air-to-

air phase incorporated defensive maneuvering for all aircraft. F-16, F-15 and F-4 crews progressed from 1-v-1 BFM to 2-v-2 DACT with both aircrews wearing the full ensemble. The air-to-ground phase moved from controlled to tactical range work with both aircrews wearing the full ensemble. The final sorties were complex, calling for a high-speed, low-level ingress to deliver inert MK-82, 500-pound bombs on a first-look tactical target while various Baron aircraft attempted to defeat the attackers during ingress and egress. That's a tough mission without having CWD gear compounding the problem.

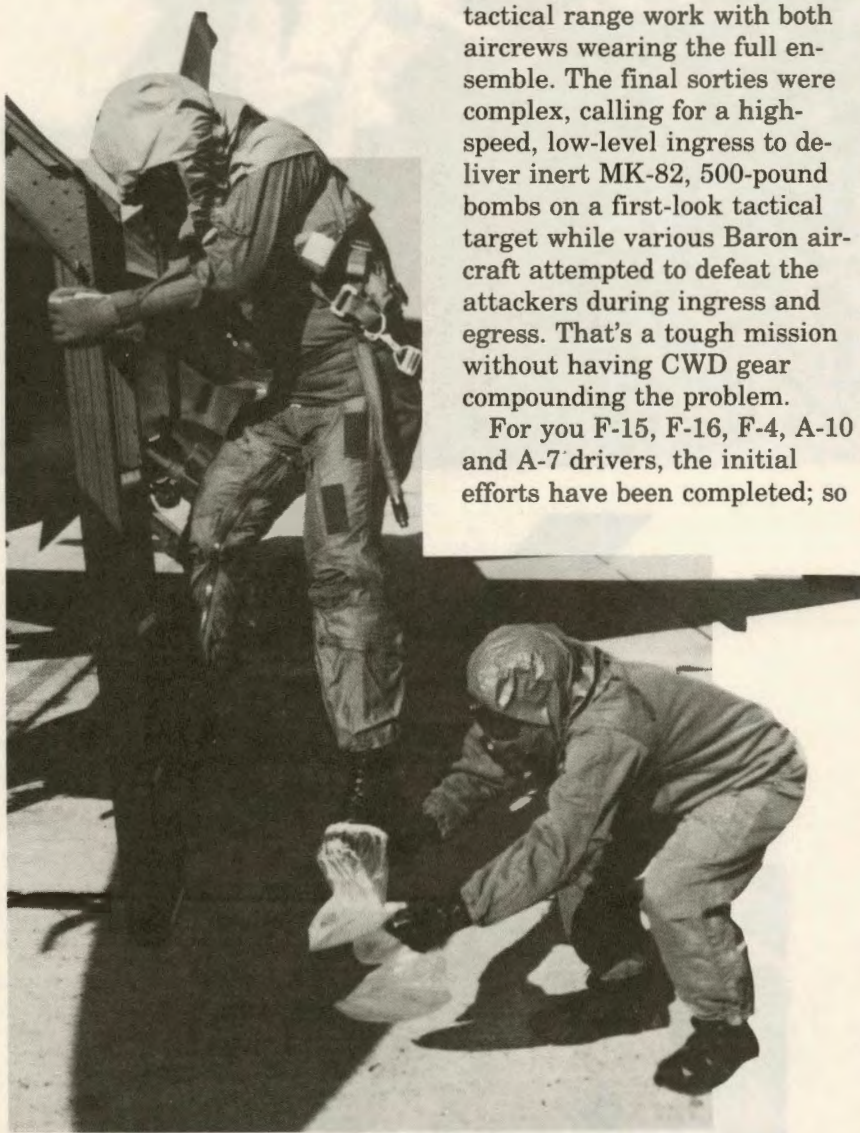
For you F-15, F-16, F-4, A-10 and A-7 drivers, the initial efforts have been completed; so

keep an eye out for the TD&E reports. The F-111 and F-4G TD&E's are planned for the spring of '85.

For those of you who have flown in the partial gear, we finally have some good news: the lightweight helmet offers both physical and psychological improvements. The participating aircrews reported significant improvements in comfort and fit over the helicopter helmet which is infamous for hot spots and slippage. Likewise, the new, thinner CWD gloves significantly increase an aircrew's dexterity. With these equipment changes, we can do our job better in a chemical environment.

Second-generation CWD equipment (such as the integrated chemical defense system), which should solve most of the limitations and deficiencies of the current ensemble, is several years away. Many of us feel we need it now. But until it arrives, we must be ready to use the CWD equipment we have while effectively employing our tactical forces. These TD&E efforts are designed to help get some answers. In our opinion, we can do it — but not so easy. ➤

Maj McClure is the chief of the training/weapons employment branch of USAFTAWC's chemical warfare division. The 1966 USAF Academy graduate has flown over 3,500 hours, 1,500 hours of that in the F-4.



AIRCREW OF DISTINCTION



On 11 October 1984, 1ST LT DAVID L. LINT was number four in a flight of four F-16s performing 2-v-2 intercepts. Because of extensive cloud cover at lower altitudes, the intercepts were being flown on top in the clear. For the first intercept, three and four, cruising at flight level 370, were pitted against one and two at FL 400. During the conversion turn, while pulling only 3.5 Gs, Lieutenant Lint's aircraft abruptly sliced into the turn and departed controlled flight without warning.

Lieutenant Lint instinctively eased the control stick forward and pulled the throttle back out of afterburner. The aircraft quickly transitioned to an upright deep stall, then unloaded to a nose-low attitude as it entered instrument conditions.

The aircraft was flying again, but Lieutenant Lint noticed the engine had stagnated. The rpm had dropped to 53 percent, the inlet temperature was steady at 750 degrees and the engine wouldn't respond to throttle changes. Still in the weather, the young pilot turned towards the divert field, cut off the throttle and tried a UFC (unified fuel control) spooldown airstart to regain use of the engine. Correct analysis of the situation and disciplined adherence to airstart parameters led to a successful relight on the first attempt.

As the aircraft continued descending to regain airspeed, Lieutenant Lint suddenly broke into visual meteorological conditions around 14,000 feet. From there he flew to a high key position overhead the divert field and completed an uneventful landing from a precautionary flameout pattern.

Lieutenant Lint's quick analysis, prompt and proper reactions and exemplary flying ability saved a valuable fighter aircraft. He has earned the Tactical Air Command Aircrew of Distinction Award.



Capt David L. Lint
421 TFS, 388 TFW
Hill AFB, Utah



TAG

tips

INTEREST ITEMS,

What's in a name ?

Sometimes nicknames only shorten a lengthy last name; for instance, very few people correctly pronounce Olzewski's name (O-shev-ski). So he logically goes by Mugs. Then again, some nicknames like BZ are earned. This story is about Tumbleweed who earned his nickname.

Tumbleweed climbed into the front seat of his F-4 and called for air on two. When the engine began winding up, the crew chief noticed the aux air doors closing. Hmmm. When he said something about it to the pilot, Tumbleweed noticed the red light in the gear handle was on. Hmmm.

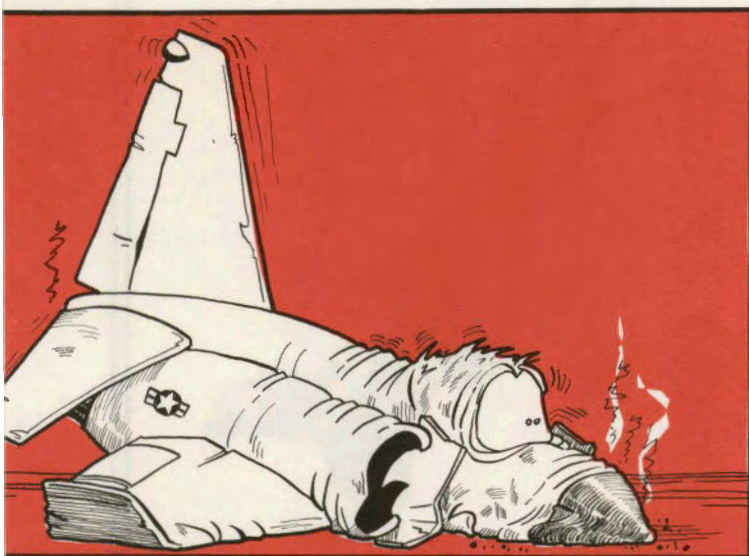
The crew chief, thinking the aux air doors were out of sequence because of an electrical mal-

function, suggested the pilot cycle the generator to correct the problem. No luck.

Still trying to fix the aux air door problem, the pilot popped and reset the landing gear circuit breaker and had the back seater reset the gear indicator circuit breakers. The doors remained closed. Meanwhile, the crew chief asked his helper to trip the left main gear squat switch. When the switch was triggered, the nose gear collapsed and the main gear moved inward about an inch in an attempt to retract. The pilot shut down the aircraft and the crew hopped out. Luckily no one was hurt. But the Phantom took it on the chin. What happened?

For reasons unknown the gear handle was up when Tumbleweed climbed aboard for the aircraft's second flight of the day. (There was also another malfunction that allowed the gear to retract when one squat switch was tripped, but it isn't a player here.) Even though the pilot missed the raised handle during the cockpit inspection before doing his walk-around, the Phantom was trying hard to tell him (and the crew chief) that the gear handle was up: first, with the gear handle up during the interior checks, the Antiskid light would have stayed on when he checked the Antiskid switch. Then, the aux air doors were out of sequence. Finally, to see the red light, Tumbleweed had to look at the raised gear handle.

Sometimes we work too hard trying to cure minor symptoms while the problem is glaring at us. Taking a second to step back and ask, "What are those lights trying to tell me?" *before* trying an imaginative way to get the lights to go out is



MISHAPS WITH MORALS, FOR THE TAC AIRCREWMAN

one Rx. Another is actually using that little yellow book we carry around. Wonder how many embarrassing omissions involving obvious things like gear handles, throttles and seat pins we could avoid?

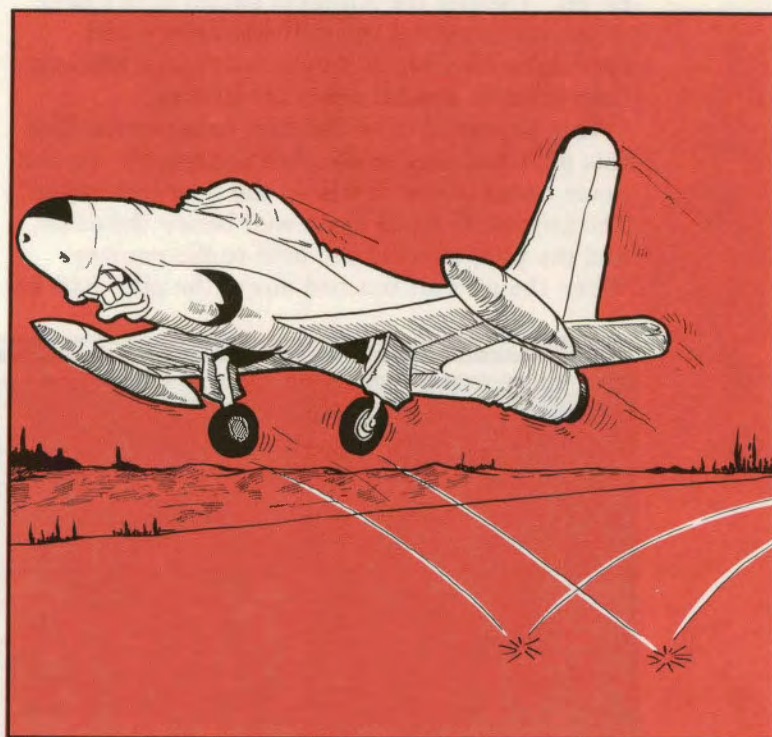
Ten knots for mother and five for the kids

The sudden illumination of a large, red Fire light added some excitement to an otherwise routine intercept mission for a T-33 target pilot. The pilot instinctively pulled the throttle back and the light went out. The flight lead rejoined and looked over the other T-bird, but couldn't find any signs of fire. The twosome knocked off the mission and declared an emergency. The flight lead chased the target pilot through the low key position of a flameout landing pattern.

Although the computed final approach airspeed for the simulated flameout pattern was 145 knots, for some reason, this pilot flew final at 160 knots. The extra 15 knots didn't help him.

When he began aerobraking, the aircraft became airborne again; the extra speed was enough to lift off but not enough for controlled flight. So when the aircraft started falling nose first, the pilot was just a passenger—he couldn't raise the nose or arrest the rapid descent. The nose-wheel-first landing started a classic series of porpoising.

Once the nose-tail oscillations began, the pilot found himself between a rock and a hard place—



he couldn't add power to go around because he couldn't depend on the engine. So he had to set the control stick slightly aft of neutral and ride it out. The T-bird became airborne for one last jaunt and came down hard, blowing two tires and crunching a tip tank.

Fifteen knots. At times in air-to-air training some of us would have considered paying for fifteen extra knots. But carrying more speed down final than the flight manual recommends for an emergency pattern can sometimes turn around and bite us. Instead of being a safety pad, it can translate into a useless commodity—runway behind us.

Dragging our heels

After an uneventful mission, an F-4 pilot dropped the landing gear for the full-stop landing. Then he went through his usual before-landing ritual, "Pressure, lights, Anti . . . hmmm, the Antiskid light's on. Switch is on, light should be off." Cycling the Antiskid switch didn't help; so the crew covered the antiskid failure and approach-end arrestment checklists and brought their aircraft around again for landing.

This happened to be the first engagement that this pilot had ever made. And apparently, he had never heard of the "heels on the floor technique." The aircraft touched down well before the cable, and the pilot lowered the nose to the runway. When the aircraft touched down, the pilot had his

feet up in the pedal stirrups. As the tailhook grabbed the wire, he was thrown forward as the Rhino rapidly decelerated. And he most likely inadvertently applied enough brake pressure with his toes to lock the wheels. Soon both main gear tires blew out.

Heels on the floor is a good idea any time the rubber meets the runway, but it's especially important during cable engagements.

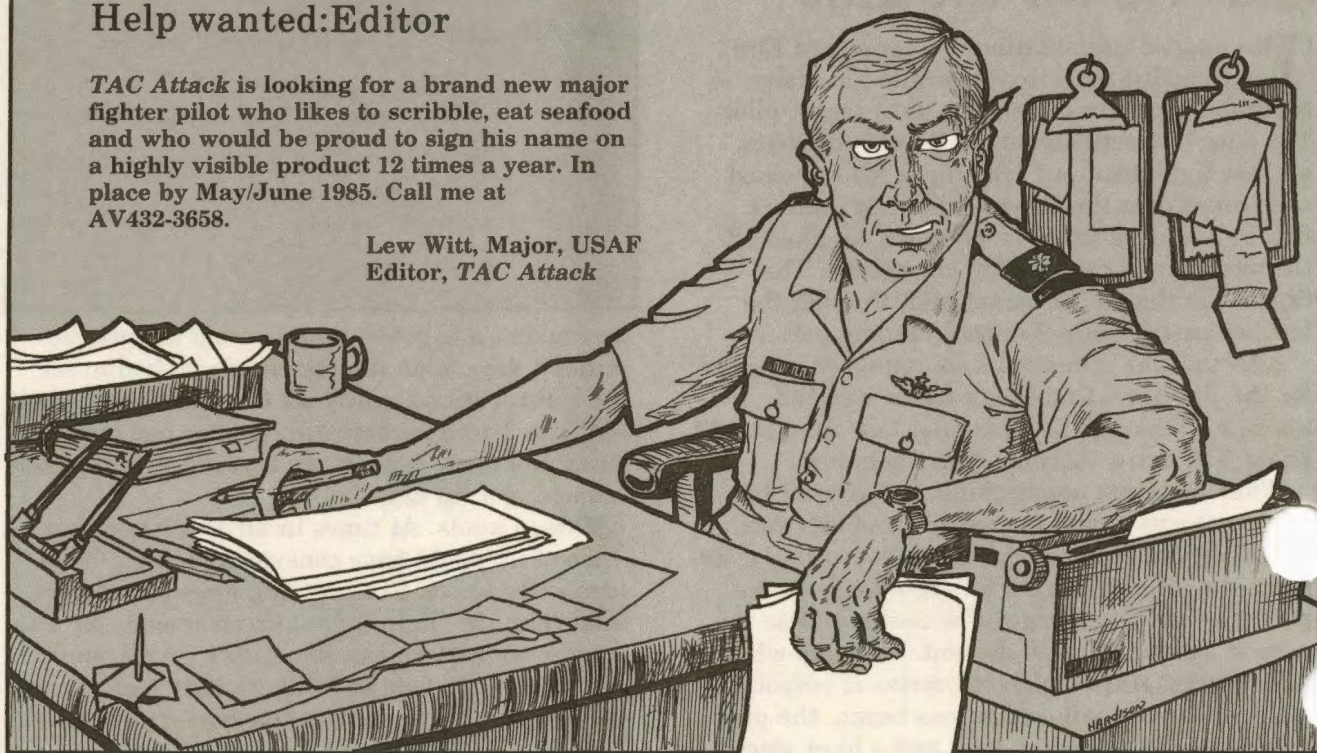
Blowing both tires during a pilot's first engagement is a fairly familiar story in the F-4 community. The wing flight safety guy couldn't believe anyone in his outfit hadn't heard it. So he took a poll. Of the 32 pilots he cornered, 20 had never made an approach-end arrestment. Of those 20, seven had never heard of the "heels-on-the-floor-technique." How does your unit compare?

Most of us have been known to drag our heels when we are coerced into doing something we're not wild about. If you're not wild about buying a pair of tires or taking an unscheduled trip through the mud on your first approach-end arrestment, (foot stomper) keep your *HEELS ON THE FLOOR*. Happy Landings.

Help wanted: Editor

TAC Attack is looking for a brand new major fighter pilot who likes to scribble, eat seafood and who would be proud to sign his name on a highly visible product 12 times a year. In place by May/June 1985. Call me at AV432-3658.

Lew Witt, Major, USAF
Editor, *TAC Attack*



TAC WEAPONS SAFETY AWARD OF THE QUARTER

MASTER SERGEANT TIMOTHY STALCUP has established an effective program for the Armament Systems Shop. His tools are continuous and aggressive education, inspection and training. His specialists are required to demonstrate job knowledge and quality performance before taking on any explosives operation.

Sergeant Stalcup developed a comprehensive self-inspection guide for the armament systems shop so that deficiencies could be identified quickly and corrected before they become hazards. The benefits were verified this quarter when more than three hundred explosives weapons suspension items were processed for repair, modification and inspection without a single incident.

During the relocation of the armament systems branch, Sergeant Stalcup identified several weapons safety hazards that had not been identified by civil engineering planners during refurbishment of the new armament systems branch building. All potential hazards were corrected during the contracting phase.



MSgt Timothy Stalcup
405 EMS, 405 TTW
Luke AFB, Arizona

The ultimate test of Sergeant Stalcup's safety initiatives was the 1984 TAC Management Effectiveness Inspection (MEI), which resulted in a rating of "Excellent" from armament systems and safety.

TAC GROUND SAFETY AWARD OF THE QUARTER

CAPTAIN JOANN M. DARLINGTON took over an additional-duty safety program, which was rated marginal, and turned it into an outstanding program, comparable to that of a full-time safety officer.

Captain Darlington ensures mishaps are investigated and reported in a timely manner. In addition to required annual inspections, she has implemented a strong program of spot inspections to find discrepancies before an accident occurs. The unit's checklists have all been reviewed and improved. And she runs an active seat belt check program and supervises the motorcycle safety program.

Captain Darlington has also instituted an aggressive, imaginative training program. She organized and implemented the supervisor's safety training course given at Indian Springs and assisted unit section chiefs in formulating AFOSH job safety training guides to help them train their personnel to recognize specific job-related hazards.

Captain Darlington regularly briefs safety topics at Commander's Calls, personally briefs all



Capt Joann M. Darlington
554 CSS
Indian Springs AF Aux Fld, Nevada

incoming unit personnel and regularly publishes items in the base newspaper and bulletin. With her aggressive program, Captain Darlington has achieved a significant reduction in mishaps: both on- and off-duty mishaps decreased in 1984 compared to the same period in 1983.

WEAPONS WORDS

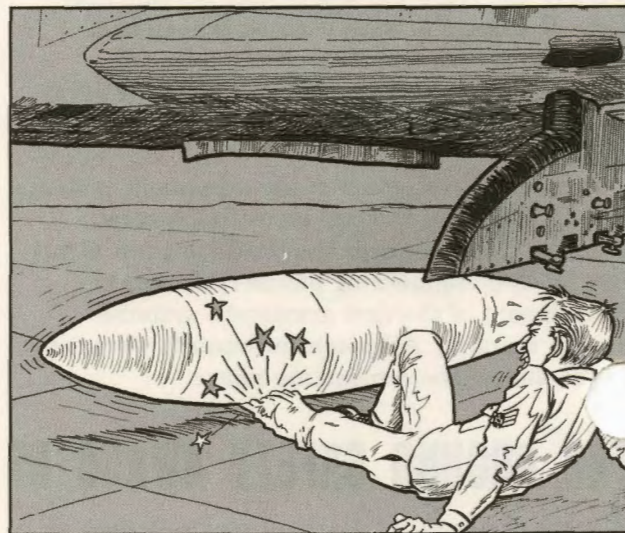
The rest of the story

An F-4 laden with two external wing fuel tanks and a centerline multiple ejector rack dropped six inert MK-82, 500-pound bombs on the range on its first mission. The Phantom flew its second trip still dragging the MER but without bombs. When the aircraft was parked for the day, a flurry of maintenance activity began.

A dearm crew removed the jettison cartridges from the 370-gallon wing tanks, removed the expended carts from the MER, and downloaded the MER. They noticed a 255 tag taped across the access panel to the centerline station and assumed it was already dearmed. Later, a second crew installed the ejector foot in preparation for uploading a centerline fuel tank.

Then a third crew, an APG team, uploaded the tank, but for some reason they didn't install the centerline tank safety pin. Finally, another weapons crew came out to perform the jettison check. When the worker in the cockpit flipped the red, guarded jettison switch, the 600-gallon fuel tank blew off and hit the worker who was underneath the Phantom and broke his ankle.

We may never know the answer to the obvious question, why the last crew didn't take a peek in the breeches to make sure there were no carts or a safety pin installed before checking the centerline tank's jettison circuitry. A fiction writer might be tempted to end the story by saying, "Well, they didn't do it by the book, so they paid the consequences." But the man with the broken



ankle knows it was real. So what other lessons are there here?

The 255 seal, like armament placards and the AFTO 781, is another form of communication. It's a visual signal left behind to inform the next crew that the centerline carts have been removed. Why would anyone inadvertently place the 255 tag across an access cover when the carts were still installed? How long had it been there, since the last flight, since last week?

Next, why didn't the crew that installed the ejector foot first check to see that the centerline breeches were empty?

Finally, why didn't the APG crew that installed the centerline tank first check to see that the centerline carts weren't installed? Or why didn't they stick the missing safety pin in the slot?

A number of these crews put a lot of faith in that bogus 255 seal. In doing so they not only deviated from their tech guidance, but also put themselves at risk. Wonder how their work passed inspection.



Looks like we've discovered a new way *not* to communicate with each other, with misplaced 255 seals. But the lesson is an old one: not following tech data, miscommunicating, and incomplete inspections can hurt someone. And this guy with the broken ankle was lucky; it could have been much more serious.

Sounds like several areas of interest for supervisors, doesn't it?

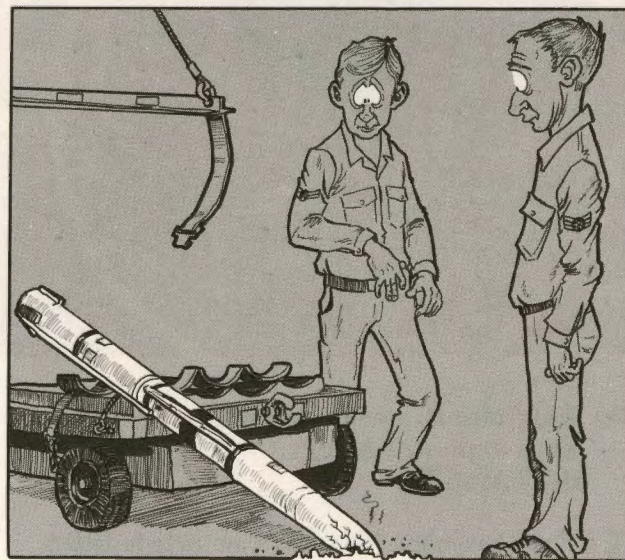
Crude coordination

A five-man weapons crew was about to finish moving a load of AIM-7 and AIM-9 missiles from one trailer to another. One of the five was driving the MJ-1 jammer that was rigged with a sling to lift the missiles. Two workers were standing at one end of the trailer near the nose of the last Sparrow that had to be moved, and the other two were near the aft end of the missile.

The crew had already attached the sling to the Sparrow when the crew chief realized the jammer was lined up off-center where it couldn't balance the load. So he told the workers on the other side to connect the aft end of the sling while he and a co-worker unhooked the strap on their end.

The crew chief's partner at the nose of the missile thought the aft strap was also unhooked (in fact, the trainee at the other end was still struggling to unfasten the aft strap's buckle); so he motioned the

driver to back up. Seeing the signal, the driver turned around to see where he was backing and drove the jammer away from the trailer. Since the aft strap of the sling was still connected to the Sparrow, the missile went with him. Crash! The missile fell to the ground, and its radome shattered.



What went wrong? The airman giving signals to the driver *assumed* (didn't check) that the other end of the Sparrow had been disconnected. And the driver relied solely on one man instead of making sure that all the workers were ready.

We can be the best individual team members on the block—but if we don't work together and communicate well, we're just a bunch of individuals in one another's way.

Controller's view of a minimum fuel

GCA



By Maj John R. Lockhart and
MSgt Dale A. Kirtley
HQ TAC/SIF

In the November 1984 issue, an article titled "Between a Rock and a Hard Place" encouraged pilots to request practice "minimum fuel GCAs." The idea is to get practice for pilots and controllers in a shortened, tight pattern resulting in an expedited landing under instrument conditions. We wholeheartedly endorse this practice; however, it must have the right name on it to make sure the controller gives you what you need. Minimum fuel GCA doesn't describe it.

First, let's take a look at the controller's book; hence their understanding of what "minimum fuel" means:

Use of the term 'minimum fuel' indicates recognition by a pilot that his fuel supply has reached a state where, upon reaching destination, he cannot accept any undue delay. This is not an emergency situation but merely an advisory that indicates an emergency situation is possible should any undue delay occur. A minimum fuel advisory does not imply a need for traffic priority. Common sense and good judgment will determine the extent of assistance to be given in minimum fuel situations. If, at any time, the remaining useable fuel supply suggests the need for traffic priority to ensure a safe landing, the pilot should declare an emergency and report fuel remaining in minutes. [This tracks with the Airman's Information Manual (AIM).]

Now, let's check the use of the term GCA. Contrary to popular belief, GCA and PAR are not synonymous. A GCA is not a type of approach, but a type of facility that provides radar air traffic control services. These services include, but are not limited to, vectors to instrument final approach courses, and Precision Approach Radar (PAR) and Airport Surveillance Radar (ASR) approaches.

Having described the terms "minimum fuel" and "GCA," we can see that technically a request for a minimum fuel GCA is not a request for a short, tight pattern with a PAR approach. However, some controllers, particularly those at our fighter bases, interpret the request this way because they *know* what the pilot really wants. There is no guarantee that asking for a minimum fuel GCA will get the same result at different locations.

Use the tips and insight from the November article; they are good. To make sure it's understood, the request should be for a "practice emergency fuel pattern, PAR approach." ➤

TAC FLIGHT SAFETY AWARD OF THE QUATER

CAPTAIN ERIC R. PUSCHMANN is an exceptional flight safety officer. He quickly sorts the trivial from the significant and keeps digging until he finds the ultimate "why."

For example: initial investigation of an EF-111 electrical fire identified a cannon plug below the throttle quadrant as the source. Closer inspection indicated that the dielectric material had broken down allowing a short circuit. Several more aircraft were checked and similar problems were found. Recognizing that there was nothing unique about the throttle quadrant area, Captain Puschmann expanded the check to other areas and found the same deficiency. Based on his findings, this type of connector was replaced on all EF-111s.

Captain Puschmann's most significant contributions involve terrain following radar (TFR) 68% altitude violations. This malfunction is one of the most serious safety problems in the F-111, yet investigations are rarely able to pinpoint the cause. However, in one of the wing's mishaps, a switch was found in the set clearance plane (altitude control) switch. Closer inspection revealed evidence of shorting. After reviewing TFR wiring diagrams and discussing his findings with ALC specialists, Captain Puschmann determined that shorting in this switch can cause the TFR computer to command a significantly lower altitude than the one selected by the crew. This was the first single point failure mode discovered for this insidious malfunction and provided an ex-



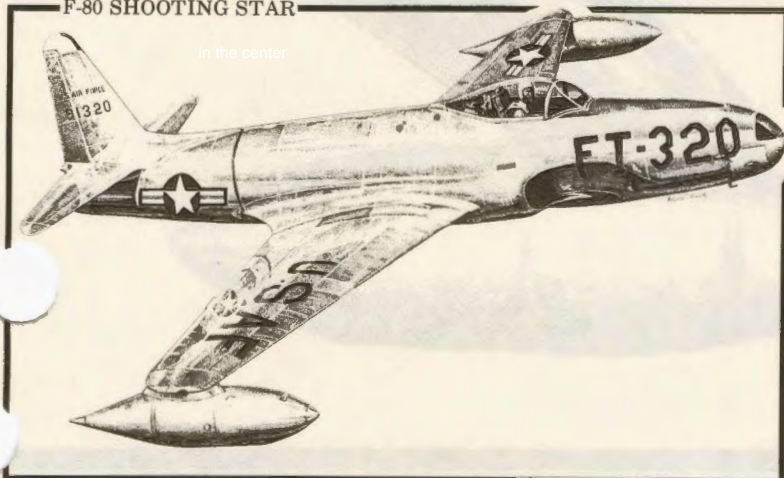
Capt Eric R. Puschmann
366 TFW
Mountain Home AFB, Idaho

planation for the numerous "undetermined" 68% violations.

In addition to the thoroughness of his mishap investigations and the quality of his reports, Captain Puschmann had been a prime mover in improving safety programs in both operations and maintenance. During a recent TAC MEI all six of the squadron safety programs were rated "Excellent," and Captain Puschmann's additional-duty flight safety officer training program was singled out for praise.

IN THE CENTER

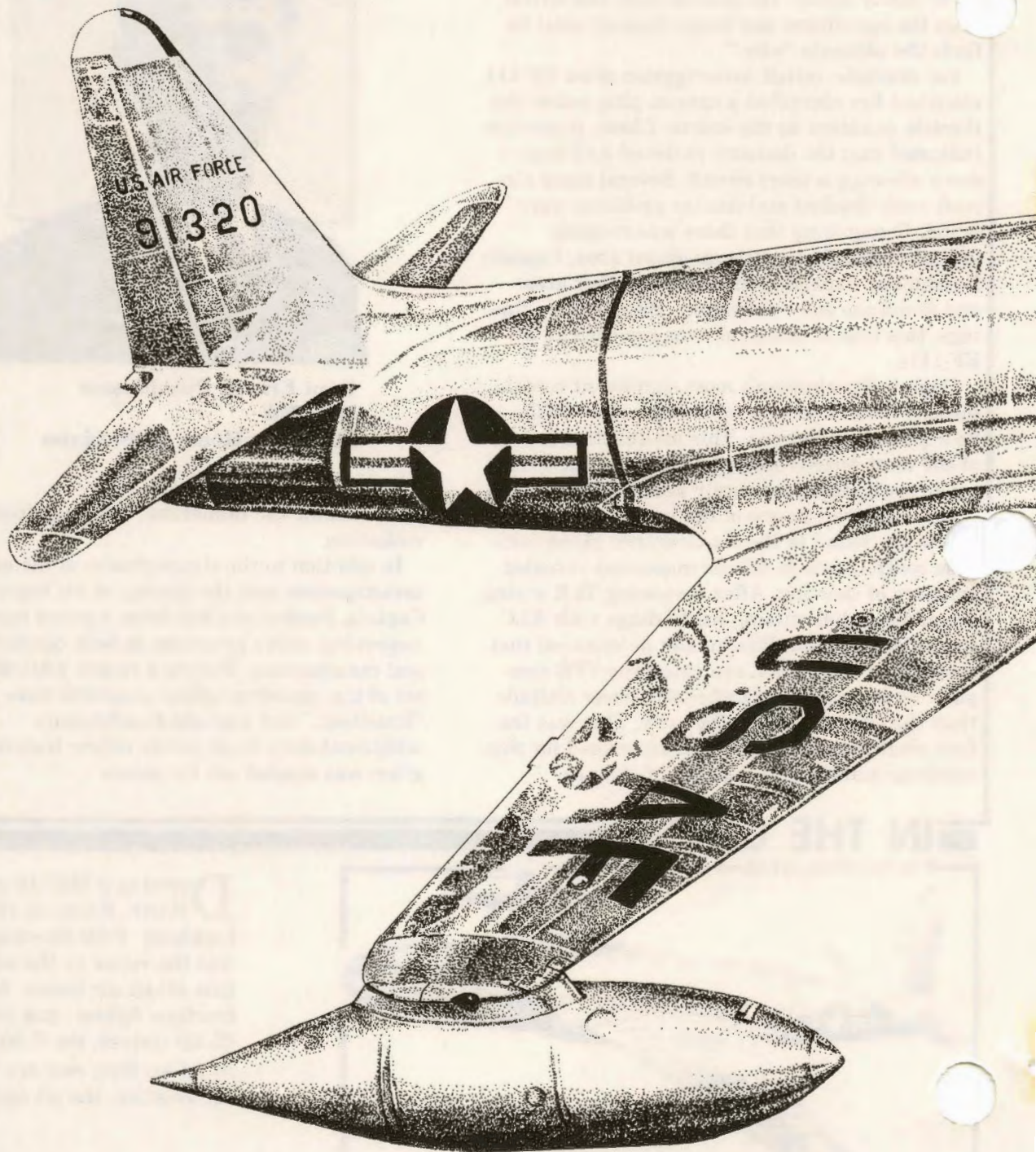
F-80 SHOOTING STAR



Downing a MiG-15 over North Korea in 1950, the Lockheed F-80 Shooting Star was the victor in the world's first all-jet air battle. As a frontline fighter, and later as a (T-33) trainer, the F-80 ushered in an exciting new era in combat aviation, the jet age.

Top Speed: 582 mph
Length: 34 feet, 6 inches
Wing span: 38 feet, 10 inches

F-80 SHOOTING STAR





BLOOD AND GUTS

By Capt Allen E. Kohn
63 TFTS
MacDill AFB, Florida

Lieutenant Swave stared blankly at his line-up card as I stepped quickly through the special subjects for our O-dark-30, two-ship, surface attack mission: "*Midair Collision/Bird Strike*—stay heads up for light aircraft and watch for birds on the low level; have a plan. *Spatial D*—if you get it, get on the gauges and let me know. *Out of control . . . ad nauseam*."

Lieutenant Swave began to show some interest as I got to the meat of the mission and began briefing the target area and element attacks. It promised to be a good mission: two F-16s with plenty of gas and practice bombs; a scenic low-level on a clear, crisp autumn morning; and some challenging targets on the tactical range. By step time, we were both eager to go out and do some dam-

age to those dummy tanks and SAM sites.

The early morning sun was behind us as I gave Viper 2 the run up signal and checked my own engine instruments. I released brakes and felt the reassuring acceleration of the afterburner even though the aircraft was dragging a lot of hardware (a centerline tank and six inert MK 82 500-pound bombs). Viper 2, similarly configured, delayed his takeoff roll for 20 seconds to take spacing.

Passing 2,000 feet in the climbout, I expected a visual call and was startled to hear my wingman exclaim, "Viper 2 has a problem; I'm declaring an emergency."

"Viper 2, what's your problem?" I asked as calmly as possible.

"Bird strike," he answered excitedly. "My canopy is covered with blood."

I made a 180-degree turn in time to see Viper 2 climbing to low key.

"Viper 1 is two miles in trail with a visual. How's your engine?" I queried.

"The engine instruments look good," was the reply. "I'm gonna land from this SFO (simulated flameout pattern)."

"Tower, this is Viper 1. Viper 2 has an emergency. He's approaching base key for a full stop."

As tower asked for souls on board, fuel status, and armament, Two called base key for a full stop.

I was on normal downwind abeam the touchdown point when I saw Two over the approach lights executing a go-around in full afterburner. "Viper 2, why don't you land?" I asked.

"I couldn't see anything out the front of the canopy. I was really sinking into the overrun; I needed burner to save it."

"Viper 1 will join up with you on outside downwind and lead you on a formation approach. I'll take you down to the flare and then go around."

Although Two couldn't see out the front of his canopy, the side of his canopy was clear enough to fly on the wing. The formation approach was un-



eventful. The landing was rough but controlled, and Viper 2 was able to bring the heavyweight Falcon to a stop prior to the departure-end cable.

Later, back at the squadron, Lieutenant Swave and I discussed the emergency to determine the lessons we had learned. We agreed on one point: properly analyzing priorities after a bird strike is critical.

- After takeoff, at 500 feet and 300 knots, the engine is the primary concern. If it stagmates or fails because of internal damage, the only alternative is to zoom and eject.

- If the engine is operating abnormally (but is still supplying thrust), then it may be necessary to jettison the stores and attempt to intercept some point in the SFO pattern.

- If the engine is operating normally, an expeditious landing may still be required. However, it should be made from a well controlled approach consistent with the amount of aircraft damage.

Lieutenant Swave's decision

to attempt an SFO from low key while retaining the stores was not a good one. Controlling a heavyweight F-16's sink rate during an SFO is difficult, even with ideal conditions. In this case, it almost turned a

If the situation is dire enough to land immediately from an SFO, then the stores should be jettisoned.

minor bird strike on the radome and canopy into a major mishap.

If the situation is dire enough to land immediately from an SFO, then the stores should be jettisoned. If engine operation is normal, then

climbing to high key may be the best option. At high key the situation can be analyzed and the stores jettisoned if necessary.

After the status of the engine is determined, other aircraft damage can be assessed and appropriate checklist procedures completed. A chase aircraft can assist in determining the amount of damage and can lead a formation approach if necessary. In our situation, a wing approach was the safest way to get Viper 2 over the runway threshold where he could land visually.

Ed note: Lt Swave's lesson sounds a lot like a practical application of the three basic rules of coping with an aircraft emergency. More than one pilot has tripped over step three and tried to land his heavyweight bird-killer sooner than practical. ➤

Capt Kohn, the 63 TFTS flight safety officer, is an F-16 RTU/IP at MacDill AFB, Florida. The 1975 graduate of the University of Michigan has about 650 flying hours in the Falcon.

CHOCK TALK

chock talk

incidents and

INCIDENTS AND

No visible means of support

By Capt Guy C. Fowl
HQ TAC/LGMF-15

During F-15 IOT&E (initial operational test and evaluation) some years ago, an unknown specialist (we think it was Murph) invented an ad hoc, time-saving shortcut called the F-15 no-visible-means-of-support procedure. The procedure involves removing the pin from the nose gear's drag brace without first placing jacks under the aircraft. The advantage of Murph's insight include clearer access to the Eagle's nose-wheel steering unit and a considerable savings of time and effort.

Since his assignment helping the Eagle make it through IOT&E, Murph has been transferred and worked around the world. Strangely enough, the no-visible-means-of-support procedure has

been employed five additional times during the period. Each time, it's worked as advertised—it's saved time and effort. And each time, the nose gear collapsed, and the Eagle took it on the chin.

You see, if the aircraft is not on jacks when someone pulls the pin from the drag brace, two things can happen, both bad. The nose gear will collapse forward, or it will collapse rearward. Either way, structural repair at depot has been the Rx each time it's happened. And we all know what's happening to doctor bills . . .

An ounce of prevention is worth a pound of repair bills. Don't use the no-visible-means-of-support procedure. Use the tech data.

A wet bird never flies at night

During a long cross-country mission, the seal of the oil filler cap on a T-33 allowed oil to siphon out. After landing when the goo was discovered all over the engine bay, a seasoned supervisor pronounced sentence — to the wash rack. The T-bird received a thorough scrubbing. Then, its engine was run to dry out all the wet parts, and the aircraft spent a cozy night in a warm hangar. Next morning, the aircraft was towed back out to the ramp where the temperature was below freezing.

After a short but adequate preflight (most of us believe that sub-32-degree weather is no time for



INCIDENTALS WITH A MAINTENANCE SLANT

a mini-phase inspection), the pilot climbed aboard and cranked the engine. When he placed the throttle to idle, the exhaust gas temperature zoomed past 1,000 degrees before he could react and shut down the engine.

Even though the wash had been done by the crew, moisture infiltrated the emergency fuel solenoid. Later, it froze when the aircraft was taken out into the cold. With the solenoid frozen, both normal and emergency fuel was delivered to the engine's combustion chamber when the throttle was placed to idle for start.

When washing out an engine bay in the dead of winter, just about every aircraft has a favorite part or two that requires a little special wrapping attention to keep it from icing up later. Now we know in the T-33 it's the emergency fuel solenoid. How about your bird?

Get a grip

The F-111 has some panels up near the nose of the aircraft that cover large equipment bays. Electrical components (line replaceable units, circuit breakers, wire bundles) of many important aircraft systems are tucked away within the bays. Because of their importance to the health and welfare of the Aardvark, inspecting these equipment bays is a maintenance preflight requirement.

The actual inspection is easy—it's simply a matter of raising the panels and taking a

peek inside to make sure everything appears in order—the circuit breakers are not popped, no evidence of wires burning, etc. The hard part seems to be buttoning up the fasteners.

Because the panels are opened frequently, the fasteners get quite a workout. And these are not your average run-of-the-mill Dzus fasteners—they're the heavy duty kind with a hex hole in the middle that require a speed wrench to install and remove. They also have a self-locking feature that not everyone has mastered.

That's only part of the problem. The fasteners come in slightly different sizes. So when a fastener wears out, the wrong size fastener can be installed in its place if someone isn't careful. Then, after vibrating along with the aircraft for awhile, it can back out. If that happens when the engines are running, guess where the fastener goes?

Not too long ago, someone secured the panels after preflighting an F-111. When the aircraft taxied out for its second mission, the EOR (end of runway) team noticed a missing fastener on panel 1102. They had the pilot shut down the left engine. A maintenance crew came out and replaced the fastener. We may never know why, but no one took the time to check for FOD inside the intake.

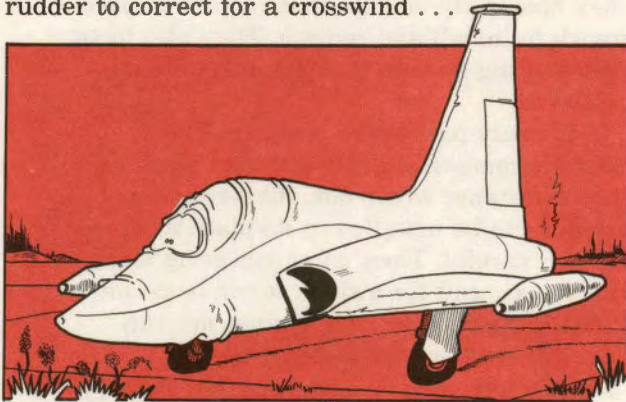
When the aircraft returned from the mission, the crew chief found engine damage during his post-flight inspection. While looking for what might have caused the FOD, the running torque (self-locking feature) was

checked on all the fasteners on panel 1102. Eleven weren't secure, and the remaining two were the wrong size . . .

Almost everyone who works on airplanes for a living has to open and close panels at one time or another. And most outfits conduct courses on fastening panels. Maybe more people need to go—to get a better grip on the problem.

Shifty characters

When an AT-38 pilot landed and slowed his aircraft to taxi speed, he tried to turn left onto the usual taxiway—but the left rudder pedal wouldn't budge. The right pedal worked fine. But whoever designed the airfield more or less dictated that pilots turn left from that position. This pilot finally coaxed the aircraft off the runway and shut down in the dearm area. Good thing the wind was calm and he didn't need a shot of left rudder to correct for a crosswind . . .



Troubleshooters found a nut was missing from one of the bolts in the rudder control assembly. With the nut backed off, one of the rods attached to the rudder control pulley jammed, allowing only right rudder movement. The nut, its washer and cotter pin were found lying in the bottom of the compartment. What happened?

Three flights earlier, a worker on day shift replaced part of the rudder assembly. Before he completed the work, however, it was shift change time. Before departing, he installed the upper bolt, one of two bolts in the assembly. He put the cotter pin through the bolt but didn't spread the

ends. When the swing shift mechanic who inherited the job began working, he installed the lower bolt and assumed that the upper one was complete. So did the inspector who signed off the work.

Unlike surgeons, most of us don't stay around long enough to complete every operation that we begin. That means someone else will often complete it. We need to make sure our changeover briefings are thorough enough to prevent unfinished business from falling through the crack.

Just checkin'

By Mr. R. A. (Rick) Bleasdale

In the thirty years that I have worked, taught, designed, and served as a technical advisor to all branches of the service in the field of life support systems, I have not seen a checklist that spans an entire field as completely as this one that I have carried since 1955. Even though this was written with the parachute rigger in mind, I believe the basic concept is there for everyone who works on any aircraft system. Every time I have felt pressure, for whatever reason, to rush a job, I had only to look at this little reminder, and the reason for the pressure would not seem so important.

Lest We Forget

Pack every parachute as though you were going to jump with it.

Allow for human frailties and look for mistakes. Remember that the aircrewman's life is as important to him as yours is to you.

Always be sure. Never leave anything to guesswork.

Chance is a fool's idol. Never depend on it. Hunt for trouble. Don't wait until it corners you.

Unless you would jump with a parachute that you worked on, why should you expect an aircrewman to jump with it.

'Til people grow wings, they will need parachutes that they can depend on.

Everytime an inspector makes a mistake or oversight on a parachute, there is a potential murderer loose.

Surely it isn't going to be you.

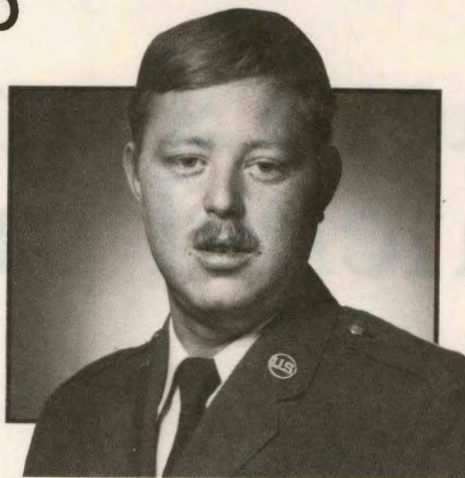
Mr. Bleasdale is a life support systems technical advisor for Northrop, stationed in Europe.

CREW CHIEF SAFETY AWARD

As an F-15 was being defueled, the centerline tank started leaking. Fuel streamed under the aircraft and around the defuel truck parked at its six o'clock. Soon the fuel spill spread past the truck across the ramp toward the aircraft parked in the next row. The truck operator tried to shut off the engine, but it wouldn't stop. So he used the emergency shutdown switch. As the engine shut down, it backfired through the exhaust and ignited the fuel on the ramp. The truck was immediately engulfed in flames.

A fire truck, parked in front of the mishap aircraft, was already on the scene for the fuel spill and was able to extinguish the fire around the defuel truck. However, when the fire began spreading toward the next row of aircraft, the fire truck couldn't spray directly on the fire because the defuel truck was in the way.

SENIOR AIRMAN JAMES E. HUBBARD recognized the immediate danger and ran from his aircraft, which was two rows from the scene, positioned a halon fire extinguisher on the far side of the de-



SrA James E. Hubbard
33 AGS, 33 TFW
Eglin AFB, Florida

fuel truck and extinguished the rapidly expanding fire. Thank you Airman Hubbard for your quick action. You've earned the TAC Crew Chief Safety Award.

INDIVIDUAL SAFETY AWARD

From April to August 1984, STAFF SERGEANT MICHAEL F. O'BERRY, a flight line support equipment technician, was temporarily assigned to the Ground Safety Office as the wing motorcycle safety instructor. The motorcycle program wasn't in very good shape when he took charge: it had previously been conducted by volunteer instructors, so there was a lack of continuity and consistency.

Sergeant O'Berry reconstructed the program. He appointed unit motorcycle monitors and conducted numerous meetings to disseminate safety material, train the monitors and coordinate their activities to avoid duplication of effort.

Sergeant O'Berry made spot inspections of motorcycles entering the main gate of the base. He found many improperly registered motorcycles and numerous drivers who had not attended the mandatory motorcycle safety course. Those drivers who had not completed the course were scheduled on the spot.

During the period that Sergeant O'Berry was assigned to ground safety, the enormous backlog of motorcycle safety training was almost elimi-



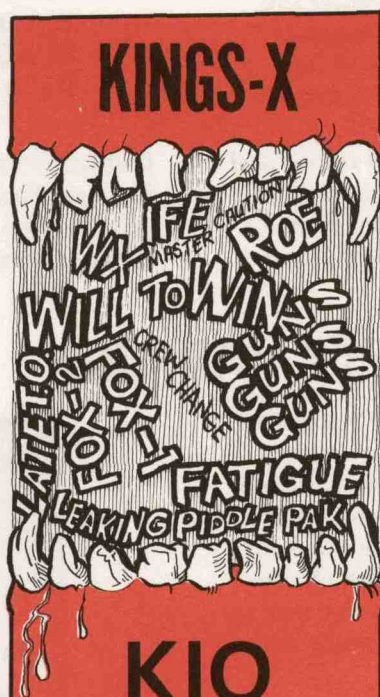
SSgt Michael F. O'Berry
27 EMS, 27 TFW
Cannon AFB, New Mexico

nated. And by publishing articles in the base paper and the daily bulletin, he made the motorcycle safety program highly visible. Although he is no longer assigned to ground safety, Sergeant O'Berry continues to stay actively involved in the program.

here's another nickel on the grass

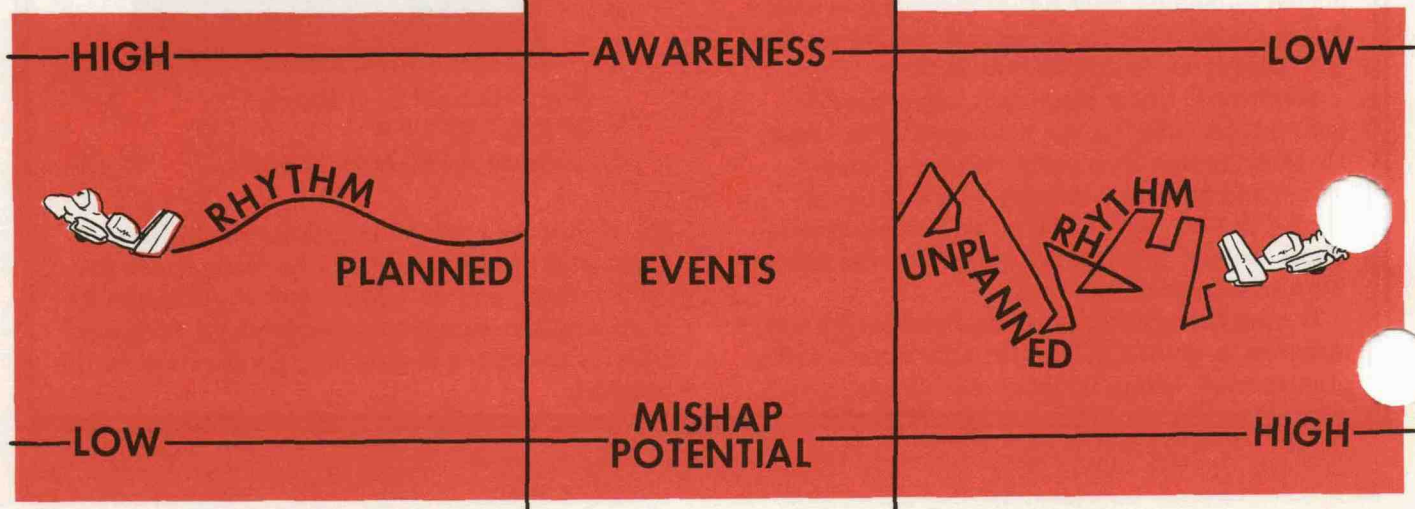
By Col Coupe De Ville
Chief, TAC Flight Safety

Think back to the last mission you *really enjoyed* — just plain *fun*. It went just as briefed, didn't it? Like clockwork. The flight lead was on top of every inch of the way. He set the pace or created a rhythm for the mission. And because of it, you were aware of everything that happened. And in most cases, you were well ahead the entire flight. The rhythm wasn't broken, or if it was, the leader took the time to regain it. As a result, your awareness remained high. And when your *awareness is high*, *mishap potential is at its lowest*.



The amarougeians* are preventing me from writing clearly. So let me try a picture.

The optimum mission is flown in the area to the left where awareness is high—reflecting the smooth rhythm of a well planned mission. This pushes the mishap potential to the low probability side. Now as unplanned events begin to occur, such as a last minute crew change, poor range weather, a Master Caution light, etc., the rhythm of the mission changes. When this occurs, what happens to our attention? Right, it's focused on the change. With channelized attention, what happens to our awareness? It goes fast, and as a result, our potential for becoming a 1985 statistic goes up faster.



But being the wise old fighter pilots that we are, we build in a King's X. It's called "Knock it Off."

Look what happens when you call KIO. You immediately put yourself back in the neutral zone while you sort out the problem, make changes, read the checklist or whatever it takes to regain your rhythm. No matter what comes along, if you *take the time—take the time—take the time* to regain your rhythm, you also stock up on awareness which helps prevent smart fighter pilots from becoming dumb fighter pilots. The key to being smart (vice dumb) is *awareness*.

Some of us have been fortunate in that we have outrun the Grim Reaper—even though every now and then it was a close race. Most will agree that had we been aware of what we were getting ourselves into we would have called a KIO long before the race began.

But that's a problem too. We ourselves become so *familiar* with our environment that we tend to lose our sense of awareness that something could go wrong.

Let's look at some things that went wrong in 1984. I don't believe there are any new



hazards; we just need to take the ones we already know about more seriously. In our business, as one wise old Cajun put it, "You pays to learn," and if we're smart, we should only have to pay once, right? Well, why do we continue to pay (sometimes the ultimate price) to learn that—

- Manhandling the pole to get a kill during a slow fight may result in a departure.
- A rapid pull on the pole can put you into dream-land—sometimes forever.
- To make a greaser, first put the gear down.
- In any two-engine jet, there's a 50-50 chance of shutting down the good engine—if we rush.
- Some two-engine jets won't fly on one engine with the speed brakes open.
- Before we raise the gear, the jet needs to be safely airborne.
- Fuel checks in flight can save a great deal of embarrassment—or worse.
- Channelized attention kills young and old alike.

I didn't dream these up—each one of these was a lesson we learned the hard way in 1984 when something went wrong.

When something does go wrong in flight, we need to make our decisions on the conservative side. If we do, we buy ourselves the time to make adjustments to the mission plan and regain our rhythm. That's *essential* during an IFE. And as the little smiley-face in the figure shows, he's flying on an awareness high—the only high every commander wants his troops to maintain in the air.

The key element in my book is awareness. If we are going to prevent any mishaps from occurring during 1985, we must be aware of the hazards, take the necessary steps to avoid them and, in taking the steps, we must set the pace or create a rhythm for the mission that fosters awareness.

One last nickel. We need to continually remind ourselves that after we strap on the jet, we are about to do the most important thing in our career as fighter pilots—fly. Of course, we are trained to fight too, but any amarougeian* can fight—it takes a good fighter pilot to do both; so first things first. ➤

*Editor's Note: Col De Ville has promised a follow-on article to define exactly what an amarougeian (pronounced AM-UH-ROO'-JAN) is.



EMERGENCY SITUATION TRAINING

SITUATION: While screaming along at tree-top level with your hair on fire, you notice a Master Caution light. @#%*&! Utility hydraulic failure. Weather at the nearest divert base is 600 and 2. Home 'drome is clear and 7 but 200NM east. So you run the checklists, drop the gear, flaps and hook, and prepare to snag the approach-end cable at the divert base. In the weather on 8 mile ILS final, you notice your left engine's oil pressure falling and won't hold 12 PSI at idle. What'cha gonna do now, Ace?

OPTIONS: **A.** Shut down the left engine IAW the checklist for engine oil failure.

B. Plug in the burner on the good engine, accelerate above 250 knots and hurry in for an approach-end arrestment.

C. Raise the tailhook, land on the first brick and lower the hook again (after passing the first wire) to engage the departure-end cable.

D. Park the left throttle at 80-90 percent and land ASAP.

DISCUSSION: Option A sounds official enough, but it would seriously compound the

emergency. You'd be looking at single engine + utility failure in the weather. Option B is flawed for several reasons: accelerating for controllability would be necessary if you had single engine + utility failure (you don't), but *not* in burner; 250+ knots would be way too hot for the approach-end cable (not to mention gear and flaps); and hurrying all of eight miles probably won't save enough oil to matter. Option C is the longest answer, but it's not right either. With utility hydraulic failure, it would take six guys with crow bars and a chain to raise the hook. Option D is probably the best answer for this little session of "you bet your life." The Dash One says the engine may last up to 4-5 minutes under these circumstances—that's hardly a money-back guarantee, but it's worth a shot. Besides keeping you from shutting down the engine and making matters worse, option D produces less asymmetric thrust than an engine in idle—a consideration on final in the weather.

Option D may be the best option, but it's not a panacea. That left engine *could* seize before you touch down. What's your plan then? ➤



When One Person Smokes, Everyone

Smokes. The latest surgeon general's report states that nonsmokers in a room with smokers may inhale 3 to 5 mg of nicotine an hour and achieve a blood carbon monoxide level equivalent to that of smoking one cigarette per hour. If you're a smoker and you feel irritated after reading this, then here's a few lines devoted to the negative effects of cigarette smoking. _____

Eye Injuries and Baseball. The National Society to Prevent Blindness says that baseball-related accidents account for more eye injuries among kids aged 5 to 14 than any other sport. The society recommends that batters wear helmets with attaching face guards. The guards don't obstruct vision and may actually bolster player confidence by reducing the tendency to be ball-shy. If you want more information, write the National Society to Prevent Blindness, 79 Madison Ave., New York, NY 10016.

Selecting a Good Running Shoe can be Confusing. Here's some more information to ponder. Dr. Herman Falsetti, director of medicine at the University of Iowa and consultant to the U.S. Olympic cycling team, says that hard-soled shoes can be hazardous to a runner's health. Anyone who runs at least 10 miles a week is not only bruising the blood vessels on the bottom of the foot, but the iron-rich blood cells within the vessels as well. This can cause a serious blow to the body's iron level. Dr. Falsetti recommends wearing soft-soled shoes which reduce impact and cut down on wear and tear of not just the foot, but the body's overall hematological count. And

Steven Cook, director of orthopedic research at Tulane University in New Orleans says a shoe loses most of its ability to cushion after 200 miles. He also found that there wasn't much difference between a \$30 shoe and a \$70 shoe. They both had about the same absorbency level — about 50 percent of the original.

Joggers Have Fewer Bugs. Dr. Joseph Cannon, a University of Michigan researcher, thinks he knows why regular exercisers have fewer diseases than less active people. After a four-mile run, body temperature can elevate to 102 degrees and stay high for several hours after a workout. This may work the same way a fever does, making the white blood cells work faster killing off viruses. High temperatures also decrease blood levels of iron, which microorganisms need to grow. If you're sick now, don't go out and run — rest is best. But *moderate* physical exercise could prevent those little buggers from getting the best of you.

New Prescription Medicines. Ask your doctor about a new antibiotic called *Augmentin* the next time you get a sinus infection or a throat or urinary-tract infection. It's a combination of amoxicillin, a penicillin derivative, and potassium clavulanate. And for allergy sufferers, there's a new antihistamine called *terfenadine* (sold as Seldane) that offers relief of symptoms without drowsiness. In clinical trials, terfenadine didn't dry out the mouth, nose or throat like other antihistamines, and one dose lasts for 12 hours.

Formaldehyde in the Home. Formaldehyde is one of the most common chemicals found in indoor air pollution. It's in plywood and particleboard, carpet backing, personal care products (shampoo has it), and household spray cleaners, insecticides and paints. For more information about this indoor pollutant, send a stamped, self-addressed envelope to Formaldehyde Leaflet, Consumer Federation of America, 1314 Fourteenth St. N.W., Washington, D.C. 20005 — it's free. And don't think this isn't a serious topic. NASA is worried about it too — those space stations are super airtight. They discovered that three house plants, the spider plant, golden pothos and nephthytis, remove formaldehyde gases from the air. Spider plants worked best; however, it will take about 70 spider plants to purify air in an 1800-square foot home with a gas stove.

DOWN TO EARTH

Excuses, excuses

Here are some of the favorites that turned up in a statewide contest in Georgia to determine the wildest excuses given police officers for speeding:

"Give the ticket to my husband. He's the one telling me how to drive."

"I know I'm speeding, but I'm thinking about buying this car and I want to see if it holds together."

"I just left the hospital emergency room where I got a shot that will knock me out. They told me to get home quickly."

Courtesy Tom Dodds, *Family Safety*, Fall 1984

Carbon monoxide poisoning children

During the last decade, the American Academy of Pediatrics has noticed a sharp rise in carbon monoxide poisoning of children five and younger.

Dr. Regina Aronow, director of the Poison Control Center at the Children's Hospital of Michigan at Detroit, says that because of economic hard times, many families have put off repairing furnaces and cars. As a result, gas leaks are not being detected and children are being slowly poisoned. Children are more easily affected by carbon monoxide because their brain tissue is still developing.

Some families are using unvented space heat-

ers in tightly insulated homes to save heating costs. This system depletes the oxygen supply in a home while producing carbon monoxide.

Children who are being slowly poisoned have symptoms often mistaken for flu: intestinal disorders, headaches, and lack of energy. To avoid being poisoned, Dr. Aronow says, space heaters should always be vented to the outside, ovens and gas ranges should not be used for heat and a window should be opened slightly when a car's heating system is being used.

Eat right-fly safe

By Col Rich Pilmer

HQ ARRS/SG

Scott AFB, Illinois

In the mid-1800s, when sailing duties took them away from fresh fruits and vegetables, British sailors were required to drink fresh lime juice daily, hence the name "limeys." The lime juice contained vitamin C which prevented scurvy, a dietary disease.

Dietary diseases, like scurvy, are much less commonly encountered today. However, problems can still occur if you don't eat well-balanced meals. Here's a chart of minimal requirements for daily vitamin allowances from the U.S. Department of Health, Education, and Welfare. What's unique about this version is the symptoms column — the standard medical deficiency symptoms have been replaced with symptoms that could affect your flight safety.



Vitamin	Physiological Role	Deficiency Symptoms	Some Major Food Sources	RDA
Water Soluble Thiamine (B ₁)	Coenzyme in carbohydrate metabolism	Fatigue, heart attack	Whole grains, organ meats, yeast, nuts, pork	1.5 mg
Riboflavin (B ₂)	Coenzyme in protein and carbohydrate metabolism, as part of FAD	Eye or skin problems	Milk, cheese, eggs, liver, yeast, leafy vegetables, wheat germ	1.7 mg
Niacin (B ₃)	Coenzyme in energy metabolism, part of NAD and NADP	Fatigue, assimilation problems	Whole grains, yeast, liver and other meats	20.0 mg
Pan- tho- nic ine (B ₆)	Coenzyme in many phases of amino acid metabolism	Anemia, hypoxia, decreased resist., cardiovascular disorders, G tolerance less	Whole grains, kidney, liver, fish, yeast	2.0 mg
Pantothenic acid	Forms part of Coenzyme A	Anemia, hypoxia, decreased resist., cardiovascular disorders, G tolerance less	Present in most foods, especially meat, whole grains, eggs	10.0 mg
Biotin	Coenzyme in decarboxylation and deamination	Muscle pains (rare)	Egg yolk, liver, yeast	0.3 mg
Folic acid	Coenzyme in formation of nucleotides and heme	Anemia, hypoxia	Leafy vegetables, liver	0.4 mg
Cobalamin (B ₁₂)	Coenzyme in formation of nucleic acids and proteins	Pernicious anemia grounding	Liver and other organ meats	6.0 ug
Ascorbic acid (C)	Vital to collagen and intercellular cement for bone, teeth, cartilage, and blood vessels, maintains resistance to infection, frees iron to make hemoglobin	More colds, flu. Ear blocks, sinus pains, trapped gas sickness. Altobaric vertigo	Citrus fruits, tomatoes, green leafy vegetables	60.0 mg
Fat-Soluble A (retinol)	Formation of visual pigments; maintenance of normal epithelial structure	Decreased night vision, night blindness	Green and yellow vegetables, dairy products, egg yolk, fruits, but ter, fish-liver oil	5,000 IU
D (calciferol)	Increases absorption of calcium and phosphorus and their deposition in bones	Possible decreased tolerance to ejection bone injuries	Fish oils, liver, egg yolk, milk and other dairy products, action of sunlight on lipids in the skin	400 IU
E (tocopherol)	Antioxidant; protects red blood cells, vitamin A, and unsaturated fatty acids from oxidation	Anemia, hypoxia	Widely distributed, especially in meat, egg yolk, green leafy vegetables, seed oils	30 IU
K (menadione)	Needed in synthesis of prothrombin, which is necessary for blood clotting	Decreases ability to survive hemorrhage in survival situation	Green leafy vegetables, synthesis by intestinal bacteria	not established

mg = milligram ug = micrograms IU = International Units

LETTERS

Dear Editor

The article "Into the Wind" in your December TAC Tips section was an interesting and informative one. I do have trouble with the last sentence though. Having attended Course S-V86A (Water Survival) at Homestead AFB, Florida, in February 1982, I strongly disagree with the statement "roll onto your back and release. . ."

At Water Survival, we were instructed to "spread the legs, arch the back and release." As I see it, all rolling onto your back can possibly do is add to the deterioration of an already bad situation. There is no gain realized by rolling onto your back, whether in water or on land. You waste precious seconds and leave yourself open to more abuse than is necessary.

Apparently, the author of this article has not attended Water Survival or made a parachute landing, intentional or otherwise.

Feet and knees together, knees slightly bent, hands on riser just above fittings, eyes on the horizon, prepare to do a PLF, has always worked for me.

TSgt James M. Gilmore
173 TRS Life Support
Nebraska Air National Guard
Lincoln, Nebraska

Dear Editor

Reference article "ECM (PTooney) Pod and Donuts" in the November 1984 issue reminded me of the practice that used to be in effect at Langley. The BAK-12 cable was held in position at four tie-down points across the runway. Nylon rope looped through a steel rod eyelet set in small holes in the concrete held the cable down and prevented any cable bounce. During an engagement, the rope would simply break or untie. I cannot remember a missed engagement (departure or approach end) that could be attributed to the rope tie downs.



Since the runway resurfacing at Langley, I do not know if this is still practiced. However, based on my experience, I believe that the cost to install the loops and maintain the system would be absolutely minimal compared to any damage caused by cable bounce.

ROBERT ACKERMAN, SMSgt, USAF
Supt Operations Support
HQ Space Command
Peterson AFB, Colorado

Dear SMSgt Ackerman

Thanks for sharing your ideas. According to TSgt Vance in the power production branch here at Langley, the BAK-12 TO (35E8-2-5-1) doesn't preclude tying down the cable. And attachment 3 of TACR 85-2 shows how to tie down the BAK-12 cable as you described. Several units do tie down their cables; others with cable/pod contact problems may want to take a look.
ED

Dear Editor

Your Fleagle input to the December '84 TAC Attack really said it all. My compliments on an outstanding description of the special joy the holiday season provides each and every one of us. Re-run it every year, to remind us of our obligations to our fellow man.

Sincerely
Maj George B. Pyfrom

TAC TALLY



CLASS A MISHAPS
AIRCREW FATALITIES
TOTAL EJECTIONS
SUCCESSFUL EJECTIONS

TAC		
JAN	THRU JAN	
	1985	1984
2	2	2
1	1	3
2	2	0
2	2	0

ANG		
JAN	THRU JAN	
	1985	1984
1	1	0
0	0	0
1	1	0
1	1	0

AFR		
JAN	THRU JAN	
	1985	1984
0	0	0
0	0	0
0	0	0
0	0	0

TAC'S TOP 5 thru JAN 85



TAC FTR/RECCE		
class A mishap-free months		
41	58 TTW	(F-16) Luke AFB, AZ
30	405 TTW	(F-15) Luke AFB, AZ
24	1 TFW	(F-15) Langley AFB, VA
23	33 TFW	(F-15) Eglin AFB, FL
21	23 TFW	(A-10) England AFB, LA

TAC AIR DEFENSE		
class A mishap-free months		
144	57 FIS	(F-4) Keflavik, Iceland
97	5 FIS	(F-106) Minot AFB, ND
94	48 FIS	(F-15) Langley AFB, VA
53	318 FIS	(F-15) McChord AFB, WA
44	87 FIS	(F-106) KI Sawyer AFB, MI

TAC-GAINED FTR/RECCE		
class A mishap-free months		
153	188 TFG	ANG(F-4) Ft Smith, AR
145	138 TFG	ANG(A-7) Tulsa, OK
144	917 TFG	AFR(A-10) Barksdale AFB, LA
122	114 TFG	ANG(A-7) Sioux Falls, SD
111	183 TFG	ANG(F-4) Springfield, IL

TAC-GAINED AIR DEFENSE		
class A mishap-free months		
127	177 FIG	ANG(F-106) Atlantic City, NJ
93	125 FIG	ANG(F-106) Jacksonville, FL
76	119 FIG	ANG(F-4) Fargo, ND
60	107 FIG	ANG(F-4) Niagara Falls, NY
51	147 FIG	ANG(F-4) Ellington AFB, TX

TAC/GAINED Other Units		
class A mishap-free months		
186	182 TASG	ANG(OA-37) Peoria, IL
170	110 TASG	ANG(OA-37) Battle Creek, MI
166	USAFTAWC	(many fighters) Eglin AFB, FL
158	84 FITS	(T-33) Castle AFB, CA
100	552 AWACD	(E-3A) Tinker AFB, OK

CLASS A MISHAP COMPARISON RATE

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

TAC	1985	3.5																	
	1984	3.4																	
ANG	1985	4.2																	
	1984	0.0																	
AFR	1985	0.0																	
	1984	0.0																	

JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC

FLEAGLE

YA' KNOW, DIS NITE
FLYIN' CAN BE A BIT
MISLEADIN' AND FRIGHTNIN'.



WOW! THAT CLOUD
BANK LOOKED JUS'
LIKE A BIG TREE.

SPEAKIN' OF CLOUDS, THAT SURE
IS A THICK ONE UP YONDER.



GREAT GOBS OF
GOOSE U FAT!



NEX DAY



YA'DON'T GROSE NO, MOST
FLEAGLE WUZ LIKELY HE WUZ
TRYIN' T'COME TRYIN' T'MISS THAT
DOWN THAT HILL HILL ALL TGEATHER.
WITHOUT SKIS?

