# TAC ATTACK

JUNE 1976



... SEE PAGE 4



#### TAC ATTACK **JUNE 1976** VOLUME 16 NUMBER 6





FOR EFFICIENT TACTICAL AIR POWER

### TACTICAL AIR COMMAND

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LT GENERAL SANFORD K. MOATS

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#### **TACRP 127-1**

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### hazard awareness

Flight safety is but one facet of our total accident prevention efforts. Aircraft mishaps generate more publicity than other accidents because of the high dollar loss, reduction of our combat capability and the dramatic sequence of events revealed by the subsequent investigation. When our aircraft accident rate is high, as it is this year, it's easy to overlook another problem area that takes a terrible toll in lives each year ground accidents.

Although ground accidents don't result in the high dollar costs that aircraft losses bring, and the events surrounding these accidents aren't as dramatic, many TAC people are incapacitated or killed in ground mishaps each year. In fact, TAC ground accidents accounted for 16 fatalities so far this year, 11 more than we experienced in aircraft accidents during the same time period. How did these 16 people die\_ Three died in motorcycle accidents, five in private automobiles, three drowned, four died in private aircraft accidents, and one died in an Air Force jeep accident. With your help, these could be the 1976 TAC year-end statistics rather than the numbers through 20 May.

There is no simple solution for preventing ground accidents, but it basically boils down to this - safety awareness must become an unconscious part of our psyche. Whether driving a car, flying a light aircraft, or simply relaxing with your family on the beach - you must protect yourself and others with a "sixth sense" of hazard awareness. We don't need safety missionaries bent on saving the world. We do need people who are aware of threats to their well-being and are prepared to counter these hazards.

Earlier I expressed our goals in statistics, which are coldy impersonal. Let's not forget that behind each number is the face of someone who was in TAC ... someone we needed ... someone we could not afford to lose. Let's lower the numbers.

t. Khe

JOHN F. RHEMANN, Colonel, USAF Chief of Safety



### By Maj Joe A. Tillman

Aerospace Student II, Richard Lynch, ran the mission through his mind as he drove to the Flight Profile Bank. He parked next to a data window and slipped his profile card in the slot, pressed his right forefinger against the glass plate, and touched seven keys - TF 5-9 O-I-I. The whirring of the tapes was accompanied by a voice transmission.

"Good morning, Student Lynch, your profile today, Zero-One-One, consists of a singleship tactical mission on Range Oscar-Two. Your call sign is Alpha-Nine-Alpha. The low-level route, as depicted on the

printout, will be conducted as a modified 60 meter contour. with continuous photo-tracking and mapping. Emergency safe altitudes and E and E routes are outlined for each segment and are in accordance with Syllabus Tape Eleven. The weather throughout the route will be Cat Two-B with visibility 1.800 meters at target area. Your clearance has been accepted by Radar Central and Nellis Range Control. Your aircraft is Tango-Foxtrot-Five-Nine, number 2714. This aircraft has two minor discrepancies not precluding flight torn servo padding on station 12 and the ambient air pressure gauge was R and R'd. Please flight check the AAPG. Your spare is 1891. Have a good flight."

A/S II Lynch removed his card, tore off the computer printout, and removed the two tapes from the bank. He placed one of the cassettes into his car's player and put the other, with the printout, into his flight suit pocket. As he drove to Premission Checkout, he listened once more to the sortie profile - after all, this was his final phase II check.

As he relaxed on the couch in the Bio Office, he reread the computer printout. The Bio Scan helmet did its thing as the Life Support Technician checked his reflex, psychophysiological and chemical modes. His scores, all in the green, were entered on the printout and he suited up for the flight. As usual, he had trouble fitting the portable Bio Scan sensors in his gloves. "Damn nuisance," he muttered, and his frustration signaled the Mode Four needle to indicate in the "yellow" at the Para-Bio Center. His reaction was automatically recorded in his check/training record.

#### \* \* \*

Lynch settled himself into the cockpit. He dialed the route code into the Nav Center, and placed the profile tape into the Mission Monitor. The first item of the checklist appeared in the sequence window, "Bio systems and belts." Lynch pressed the button to the right of the window and the word "Complete" flashed on the screen.

"Scan and start" next appeared. He checked around the aircraft and pressed the "Start" button. The engine wound up, and a voice from the Tower confirmed engine start and gave taxi instructions. He again pressed the "Sequence" button. This time, however, the words "Check system panel" appeared. He saw the yellow light on the SOAP panel. Pressing the light, he heard "Your copper reading is two PPM above standard. This has been confirmed with Maintenance Standards and cleared for flight." The light went out, and the next checklist item appeared -"TAXI." Lynch pressed the "taxi" button and the starter rod and chocks retracted. The sequence window flashed "CLEARED."

As he began taxiing, "PRE-TAKEOFF" appeared in the sequence window. The systems were once again checked O.K., and the Tower confirmed his clearance into takeoff position. A simultaneous voice and visual display confirmed takeoff power clearance and sequenced countdown flashed in the window -"12-11-10." The



intercom voice calmly stated power was one percent above max. "Damn," thought Lynch, "a write-up for sure."

"Four ... three ... two ... one ... brake release." At about 50 knots, the nosewheel disconnected and the voice stated, "Burner ... now!" At 110 knots, the voice said, "Rotation ... now!" The gear and flaps retracted at 50 meters AGL and the engine settled at climb power as Lynch manually flew cross hairs to the ingress window. This critical maneuver was a potential bust item since the auto mode of the penetration leg required an accurate entry. A green light on the Nav Center flashed simultaneously with the sequence window "AUTO NAV" display. And Lynch relaxed Student considerably as he turned over the aircraft controls to the good graces of the mission tape.

The first 20 minutes of the

low-level route were uneventful. After the third leg, however, the TF-59 swerved to the right and began a rapid climb. As it leveled off at 600 meters AGL the throttle came back and the aircraft slowed to 250 KIAS turbulent air penetration airspeed - "Of course," thought Lynch, "must be a line of 'bumpers up ahead." The Comm Box confirmed this, and the aircraft urned towards the area of weakest radar returns. As he broke out of the line of showers, he knew he had to make a decision ... attempt a manual re-entry, or hope he was not out of navigational range for an auto return.

"What the hell," he thought, "that's what I'm paid for ...." He took command of the aircraft and turned to an approximate heading to the next checkpoint. Setting the Nav System to reentry, he flew the cross hairs to get the aircraft within Auto Range. Mentally crossing his

### THE AUTO MODE

fingers, Lynch pressed the "Auto" button. The aircraft banked left and dove towards the ground. Since he was in the clouds, he concentrated his attention on the aircraft's radar altimeter ... 500 meters, 400, 300, 200 ... he broke out of the clouds at 150 meters; the aircraft leveled at 50, and realigned itself to course.

"There it is! Checkpoint Four, big as hell ... my errors must have cancelled out!" The rest of the route went well, and Lynch had time to replay the range information tape. It called for two simulated passes on SAM sites and a strafing run on a moving convoy. The first bombing run would be a 500 KTAS level delivery at 100 meters on auto. The second pass and strafe run would be in manual mode. His auto bombing run resulted in a shack, but he had a little trouble with his manual deliveries. "Not bad enough to bust the ride," he thought, "but I'll hear about it at debriefing."

He manually flew the recovery profile to just short of the initial approach fix, then dialed the letdown plate code number into the terminal mode of the Nav Center. As the computer established the aircraft in the holding pattern, a signal from the ground Radar Center established an expected approach clearance time and displayed this information in the sequence window. Lynch could see that line of showers, the one that gave him fits on the low-level route, moving towards the field. He hoped he would beat the bad weather back in. The auto ALS was good, with tape commands

resulting in a touchdown 800 feet from the end of the runway, seven knots high on airspeed. "Better write that up." thought Lynch and switched the Comm Box to "781 Record." "ALS airspeed at touchdown seven knots high." The write-up was recorded with pertinent data from the flight recorder and he keyed the Nav Center for a Radar Center Approach. The weather was now moving in, and he was in and out of the scud layer on downwind.

On final, as the RCA controller fed electronic signals to the ALS computer, the Squadron Mission Controller called. Lynch told the SMC to standby until he completed the RCA. After manually taking control of the aircraft on the touchand-go, he called SMC and told them to go ahead ...

"Alpha-Nine-Alpha, this is Mike-Charlie-One-Three, we have a weather advisory ...."

Lynch switched his comm system to "Record." "Go ahead, One-Three."

"O.K., Nine-Alpha, a weather system is moving into our area. Suggest you divert to Luke. We indicate you have 3,500 pounds of fuel remaining. You are cleared, and the Auto-Divert Route is set in button Four on your Nav Center."

"A-h-h-h Rog, One-Three, that's cutting it a little close on fuel ... I'm going to make a full stop here ...."

"Understand, Nine-Alpha, but you better get it on the ground ... the ceiling is coming down to 60 meters, vis 200 meters and winds from 280 at 15, gusts to 30. Punch button Six for update."

Lynch began to sweat and his anxiety was recorded on his Bio Scan chart - redlined. "If I try an auto approach, the damn Weather Avoidance Mode will go Able-Sugar trying to keep me out of the cells ... better try a manual approach with ALS readout ... Jeez, it's gettin' bumpy!"

On final, Lynch tried to center the pitch and bank steering bars, but the turbulence caused him to overcorrect. He was so wrapped up in trying to keep the bars centered, he failed to see WIND SHEAR, 30 METERS AGL, 30 KTS" appear in the sequence window. His airspeed was fluctuating 10 knots on either side of normal approach speed as the voice warning system broadcast, "Decision Height, take over visually or execute missed approach!"

"I have the strobes ..." Lynch said, to nobody in particular.

Just then the TF-59 settled sickeningly and he jammed the throttle forward, but it was too late. The aircraft hit the overrun so hard Lynch's inertial reel locked and his right hand was driven from the stick. The left main collapsed. When the wing tip contacted the runway, the aircraft slewed to the left then skidded sideways for 300 meters before the nose gear collapsed. It then slid backwards off the right side of the runway. His inglorious nose-first exit onto the muddy infield was followed by a record-setting 100 meter dash to the arriving crash vehicles. The aircraft, miraculously, did not catch on fire, but did suffer major-category damage. . .

Aerospace Student II Lynch left the office after providing the Accident Investigation Team his version of the accident. The board members sat silent until one of them, the Electronics Data Evaluator, stood up and stowed the numerous recordings, computer readouts and visual recording tapes into a large black briefcase. "Well, there you have it, gentlemen. It's obviously one more case of a well-meaning young jock ignoring the advice of the best Electronic Pilot Support Systems ever built. Fifteen million dollars of scrap iron is the result of one bad judgment."

The young Flight Safety Officer, who had kept his silence until now, disagreed, "Jim, I don't think it's that simple. Maybe Rick just couldn't hack it because he's spring-loaded to the 'AUTO' function. Maybe we've designed machines so damn capable, our jocks are forgetting how to drive an aircraft. Maybe ...."

"Whoa! Hold it, Bobby." The EDE specialist sat back down. "I think we're going backwards here. Look at the historical aspect of aircraft accidents." He dug into his briefcase, withdrawing a sheaf of papers. "Seventy-five years ago, in 1923, the Air Force accident rate, based on accidents per hundred thousand hours of flying time, was 430. In 1953, it was 24. In 1973, it was 2.3. Last year, we had a rate of 0.7 -- 43 accidents. Thirty-six of these accidents were caused by human factors. Pilots ran into thunderstorms, made bad landings and just plain screwed up in 1923 ... and they are still doing it today. Sure, flying training programs have improved, but the real difference ... the real improvement in our accident rate, has resulted from improved technology."

"Your statistics are impressive, Jim, but if you eliminate all pilot judgments, you've eliminated the pilot. Unless we give the aircraft back to the pilot, how the hell is he supposed to operate when



things turn brown?"

"I want to tell you ... all of vou, about a new system under development at Electronics Development Command." The Data Evaluator once again dug into his briefcase. "Right now, we are testing an Auto Divert System that will permit the Squadron Mission Controller to divert aircraft without the pilot's assistance. The computer automatically computes the aircraft's fuel state, divert base and en route weather conditions, and programs the Nav Center to place the aircraft into the divert base's ALS window for approach and landing, Just think of the advantage to the field commander ... and it will take a load off the pilot's mind to know

"What!" the Safety Officer jumped to his feet. "You mean to tell me a guy on the ground, with the help of electronic wizardry, is going to be able to send a pilot to another base without the pilot's assistance ... that's bloody ridiculous!"

"Bobby, I hate to tell you this, but we're toying with the idea of making the system non-interferable - not even by the aircraft operator ...."

The young captain stared at the EDE. His ashen face tightened and he quietly excused himself. The entire investigation team flinched when the outer office door slammed shut.

The room was once again silent except for the shuffling of papers as everyone, except the EDE, packed up their paperwork. The electronics man shrugged helplessly. "How else are we going to eliminate these dumb accidents? How are we supposed to ...."

Before he could finish, he was alone.



interest items, mishaps with morals, for the TAC aircrewman

One sword keeps another in the sheath. George Herbert

### (V)IP

The instructor pilot is a very important person. If you don't believe me, just ask one. Seriously, though, the IP has a tough job. He's a fatherfigure, psychologist, teacher ... and damn good pilot. Unfortunately, his concern with these first three images sometimes adversely affects the latter. Sometimes the IP is so busy instructing, he lets his own proficiency slip.

We review many incident/accident reports that involve instructor pilot errors. There are several reasons for this. Many high-risk profiles (stalls, adverse/yaw, unusual attitude recoveries; back-seat landings) that many of us see once during upgrade training are routine to the IP. IPs fly functional check flights and other missions that require the squadron's best. There is one more reason some IP-involved accidents occur instructors sometimes get non-proficient. This may sound contradictory, but it's true. One incident in TAC, involving an instructor pilot, resulted in the following unit action:

"Sorties are being scheduled for the specific purpose of increasing instructor pilot proficiency."

It is not unusual for IPs to fly several consecutive missions without getting any stick time. If this sounds familiar, you had better start stealing some stick time from the student. You owe it to yourself .... and him.

### ZAP

The flight was a two-ship air-to-mud mission. Everything was normal until reaching the range entry point when the flight was notified that the range was closed due to weather. Thunderstorms few to scattered, were located between the gunnery range and "Homeplate." Returning to base, tops of the thunderbumpers were estimated to be above 40,000 feet and still growing. Due to their height and length, the flight lead chose a path between two radar returns. While in the clouds, the wingman observed lightning strike the lead Phantom. During postflight inspection, the lens cover and bulb for the left and right position lights were found to be broken on both aircraft. In addition, a small pinsize hole was found in the tail section of the leader's right external fuel tank. The cost .... \$214.20 and 28 manhours.

We were lucky ... this time. Each year, the Air Force loses aircraft and aircrews due to thunderstorm penetrations. A short quote from TAC Supplement 1 to AFR 60-16 is appropriate:

There is no peacetime mission in this command which requires intentional penetration of a thunderstorm. When penetration of observed or reported thunderstorms appears to be unavoidable, pilots will delay a scheduled mission or proceed to a suitable airfield predicated on mission requirements. Aircraft enroute will hold until able to proceed or divert to a suitable alternate. Aircrews will use all available facilities (PFSV, radar, PIREPS) to avoid areas of thunderstorm activity. Nuff said.

### LAU-68S GO PCS ... AGAIN

The Oscar-Deuce departed his holding point and completed the range checklist procedures prior to directing the fighters to the prebriefed target. While on base leg, the pilot positioned his armament switches to fire a marking rocket. On final, he turned on the master arm switch, and when delivery parameters were met, pressed the pickle button. What happened? One each LAU-68 rocket launcher went PCS.

The pilot recovered the O-2 from the dive and rechecked his armament switches. At this time, he noted that the rocket fire/drop switch was in the "drop" rather than the "fire" position.

Another identical incident happened 11 days later at a different location. The FAC marked several targets with four rockets from the right LAU-68. After the fourth pass, he safeJ the right side and armed the left. During the next hot pass, he pickled the left LAU-68 off the aircraft.

The pilot immediately safed all armament switches before noting their position. After landing, the pilot stated he probably placed the left pylon switch to "drop" instead of "fire." Since he was uncertain, a functional check of the system was performed. No discrepancies were found.

These two incidents cost the Air Force over \$1,600 and jeopardized the lives of personnel on the ground. Take the time to insure the armament switches are set properly. It may save an embarrassing moment ... could even save someone's life.

### SICK? SEE A SURGEON

When are you, as an aircrew member, incapable of hacking a mission because of illness? In most cases, you are the only one who can make that decision. Sure, the Flight Surgeon can ground you, but he has to see you first. If your symptoms aren't obvious to others, you can get away with flying even though you shouldn't ... usually.

A recent fatal aircraft accident revealed that the pilot failed to obtain medical assistance despite the fact that physiological incapacitation may have been a factor in the accident. Don't fool around with self-medication if you feel under the weather - you've got good medical experts as close as your Flight Surgeon's office. Use them.



### AIRCREW QUIZ

The following quiz is designed to test your familiarity with various information contained in Flip Publications, AFR 60-15, and AFR 60-11. Score one point for each correct answer. A total of 15 points is possible. If you get less than four correct, don't go near the flight line. Four to six correct answers, you can fly in field grade weather. If you hacked six to nine, you're cleared in hot. More than nine correct? You should be teaching the Instrument Refresher Course. Watch out ... it's not easy. Answers are on page 30.

1.



The dots surrounding the airway are:

- a. Official time zones
- b. Area of heavy precipitation
- c. Airway restriction (airway penetrates special use airspace)
- d. a and c

**2.** Which enroute low altitude US Chart does not contain a legend?

a. L-1, L-2 b. L-27, L-28 c. L-15, L-16 d. L-7, L-8

**3.** You are flying a low level and see a downed aircraft. On the ground near the wreckage is the symbol  $\checkmark$ . This means:

- a. Require fuel and oil
- b. Am proceeding in this direction
- c. Airman 1C requires help
- d. Require firearms and ammo

### 4. Match the following Flip symbols:



**5.** While scanning the horizon for bandits, you suddenly spot a friendly which had sneaked cleverly into tight formation on your left wing. The other jock is waving his hand back and forth in front of his face and right ear. He's telling you he's having problems with his:

- a. Fuel system
- b. Cockpit temperature
- c. Radio
- d. Muscle control

**6.** You're taxiing your Phantom into its parking spot and the marshaler gives you this signal:

### He's telling you:

- a. Turn to right
- b. Look what the mascot did
- c. Turn to left
- d. Move ahead



### A Bad Place to Be

By Maj Gary M. Burge 123d TRW/SE Standiford Field (ANG) Louisville, Ky

entered the anvil at Angels three seven. Dropping out the bottom I had scarcely eleven. The minutes between seem like hours on end, Boxed in by the weather I thought was my friend.

> The airspeed is up ... whoops, now it's down, The altimeter says we're approaching the ground. Reliving those briefings, through which I had shored, Thanks to Thor's mighty roar, I'm no longer bored.

> > The static is deafening, lights flashing so bright, The hail drumming fiercely like a gun in the night. Now my eyesight is failing, or is it my mind? Halp me, my Buddha, get out of this bind.

> > > The DO, himself, met my craft on the ramp, Recording the fact that my suit was still damp. But that wasn't the end, he really was sore, It was my end he was after, 'cause I bent his Fox-Four.

> > > > "Aha, "scoffed the SOF, and Mobile quickly agreed, "Busting regs without thinking is what did in his steed. At the Commander's debriefing my backside was warm. But it sure as hell beat that ol' thunderstorm.

> > > > > Recounting this tale to the powers that be, I felt very humble, and on bended knee I repent, I believe, and now I can see -Thunderstorms are indeed, a bad place to be.

### THE GREAT SURVIVAL KIT BOOM - AGAIN

Two IR specialists were working inside the cockpit of a Photo-Phantom when one of them dropped an allen wrench behind the "D" handle on the front right side of the rear cockpit survival kit. The crew chief was notified and shown where the wrench was located. The crew chief decided to remove the survival kit pack in order to retrieve the wrench ... without calling for egress specialists. He removed the pin from the emergency harness release handle, cleared all pin lanyards from the seat portion of the bucket and raised the emergency harness release handle 2 to 3 inches, at which time, the guillotine cartridge fired ... as designed!

Once again, we've managed to fire a survival kit. As we've stated before - the kit will work every time, if the handle is pulled.

Please ... take our word for it. When in doubt, call in the experts.

### IT'S A LONG WAY DOWN

The airman was hand-cleaning the backbone of a Phantom. In an effort to reach the vertical fin, he leaned over to one side, lost his grip, and fell to the concrete ramp. The good news was that the crew chief landed on his feet. The bad news was that he sustained injury to his right leg, hip, and back.

This accident may not have occurred had maintenance stands been utilized. It's a long way down from the top of an F-4, F-15, F-105, etc. It

may take a little longer to get a maintenance stand ... but it can save you from a nasty fall. By the way ... did you know falls are the second largest cause of accidental death in the U.S.? Automobile accidents are in the lead with drownings running third.

### DO THE JOB RIGHT

The Sluf had returned from an air-to-ground gunnery mission with a hung BDU-33. During postflight inspection, the MER breech gun was discovered missing. The MER was removed and the release linkage was inspected for wear or evidence of malfunction. No abnormal wear was noted, and all parts were found to function properly. However, a small amount of unburned powder residue was found within the MER ... this is abnormal. In order to get residue where it was found, the breech gun would have to be moving out of the MER as the ejector cartridge fired. Low back pressure in the breech gun would result if the breech gun was not locked into position, or the latching mechanism malfunctioned, allowing the breech gun to move substantially aft as the cartridge fired. There was no evidence of a nonstandard cartridge charge which might have overpowered the latch mechanism and caused latch separation. Munitions had received a post-load inspection and an end-of-runway (EOR) inspection ... but no one discovered the improperly installed breech gun.

What's it take to prevent a dropped object? Just follow the Tech Orders ... in other words, do your job right. It's that easy.

### F-100 Super Sabre

The Hun . . . first of the modern century series . . . first operational fighter to beat the speed of sound . . . primarily designed for air-to-air, the Hun found its home on the deck - close air support and ground attack - for the friendlies . . . first of the fast FACs - the Mistys - in SEA . . a welcome sight to many a ground pounder to look up

and see a flight of four rolling in . . . versatile, rugged, lethal . . . the Hun is still a great lady among fighters.

in a straff for the



vious upstream protection existed). Unfortunately, there were two jobs under way at the same time and instructions were inadvertently and improperly given to restore power to the lines without coordination with the crew at the utility pole. When the power suddenly came on, there was a blinding flash. However, the grounding wires and other protective measures taken by these airmen protected them from certain electrocution. These professional airmen worked by the book with full respect for the hazards of their job. They are alive today -- and that's **GOOD.** 



the good, the bad, and the ugly

> By Lt Col Gerald B. Hurst Comdr, 834th CES Hurlburt Field, FL

Recently at a TAC base, two young Civil Engineering airmen assigned to the Exterior Electric Shop were called upon to perform repair work on an electrical distribution power pole. Both airmen were first-termers with less than three years service. There were five different safety devices between the source of electrical power and the job site: power to the the utility pole had been cut by two open switches at two separate substations, and there were three circuit breakers which would also provide protection. Both airmen conscientiously followed checklist procedures and installed proper grounding wires as called for by the book (even though they were aware that the pre-

Airman Jones was at home off-base and decided to clean and perform some repairs on his .22 caliber bolt-action rifle. Jones had owned the rifle for many years and was familiar with firearms much the same as any American youth who has participated in rifle shooting activities. He worked the bolt to check whether there was a cartridge in the rifle and supposedly seeing none, closed the bolt and proceeded to work on the rifle. A crack in the rifle stock was cause for concern, and in order to inspect the rigidity of the stock, Jones placed the rifle butt on the floor. While sitting on a couch with the muzzle pointed at his abdomen, he applied pressure to the barrel to determine the degree of play in the broken stock. Suddenly the rifle accidently discharged. The .22 caliber bullet entered his lower abdomen, passed through his kidney and liver and exited from his back. He was alone at the time, but was able to call for assistance and was rushed to the hospital for surgery. Luckily, there was no extensive damage to vital organs, and the airman recovered. Not a tragic incident - but label this scene **BAD**. safety measure had been grossly disregarded. The NCO was dead - this incident can only be described as **UGLY.** 



Several years ago, a Senior NCO of the 666th Fighter Squadron went out to disarm an ejection seat. Sergeant Smith had several years experience in egress systems and was NCOIC of the Egress Shop. He climbed the aircraft ladder and proceeded with the disarming. As the sergeant was leaning over and above the seat, the egress system fired. The seat, in its upward path, ripped away the canopy and catapulted him approximately 40 feet from the aircraft where he impacted the concrete ramp. Sergeant Smith was killed (probably dead before hitting the ramp). Investigation determined that Smith had failed to insert the safety pin prior to disconnecting a critical system actuator. Further, since no checklist could be found at the scene, it was assumed Smith had worked without penefit of the required checklist. A time-honored

Mishaps like the three described have happened in various forms and situations over and over. Anyone with a few years in the Air Force can recall similar accidents in which procedures were disregarded and good safety practices were not employed. Perhaps we dwell too much on the BAD and the UGLY, and do not emphasize the GOOD. In day-to-day activities of accomplishing our Air Force mission, there are countless instances that go unnoticed in which people did the right thing and nothing happened but the desired end result - and that's the way it should be. But accidents and tragedies will continue until emphasis and respect are placed on safe operating practices by you, the individual. In addition to loss of Air Force dollars, it is your neck! Which is your choice ....

the GOOD, the BAD, or the UGLY?

## DUV7\_DI7 PHYZ-BIZ

By Lt Col Harold Andersen HQ TAC Physiological Training Coordinator

### THE GREAT AMERICAN PASTIME

he "Great American Pastime" - is it baseball? Football? Basketball? Not by a long shot! The real favorite pastime, for Americans of all ages, is sunbathing: exposing the bod to the glorious sunshine ... at the beach, while boating, attending sporting events, lounging or working in the backyard. Summer clothing, these days, is designed to expose vast expanses of naked (and unprotected) skin to the sun. This exposure contributes to, and is an essential part of, two other pastimes: girl-watching (by guys) and guywatching (by girls). It also contributes to skin problems. The short-term problem is sunburn and over the long-term ... skin cancer.

The main objective of all this sunning is to acquire a "tan" which should/must be "deep," "even," and "bronze" in nature (read the ads for suntan lotions). Tanning is done by certain wave lengths of ultraviolet light which stimulates the production of melanin, a brown/black pigment, in the skin. This is a slow process. As far as is known, no preparation will produce a tan faster than would otherwise be possible. "Suntan" preparations cannot accelerate the rate of deposition of melanin. This is a function of a number of factors ... but is not stimulated by smearing greasy kid stuff on the outside!

While the "tan" is being acquired, the sunbather should avoid sunburn. Many people believe it necessary to suffer through a case of sunburn in order to tan, but this is not so. The burning rays of the sun are of a different wave length - some of the ultraviolet that hits the skin will cause tanning, some will cause a burn. It would be nice to block out burning rays and let tanning rays pass through to the skin, however, no preparation has yet been found which can accomplish this ... the wave lengths are too close together. When the redness of sunburn subsides, the residual tan is not a product of the sunburn; what you see is the tan that was acquired at the same time as the sunburn.

The best procedure is to tan slowly and avoir

burning. It's not difficult to do, but it does require some timekeeping: Start with a 15 - 30 minute exposure, use 15 minutes if the exposure occurs near midday and longer exposures for early A.M. (before 10) or in later afternoon (after 4). The second exposure can be increased by 50% of the first day's exposure (22 - 45 minutes), and follow the same procedure for the third and succeeding exposures. Remember, some body parts tend to burn more easily than others, not only lips, ears, nose, but also back of knees, kneecaps, and tops of the feet.

There are a number of factors which, when known and understood, can assist the sunbather in making intelligent exposure decisions. City sun tends to be less potent than desert sun because the dirt, smog and other pollutants in the city atmosphere act as ultraviolet filters. Haze or clouds will retard burning - but make no mistake about it, you can get a sunburn on a cloudy day if the exposure is long enough. Latitude is an important factor; the sun's rays are more nearly vertical as we proceed south towards the equator, so that an exposure which is safe in Maine would cause a burn in Florida or Puerto Rico. Time of day is also related to the slant of the sun's rays. Since they are more nearly vertical at noon, the burn potential is greater. Finally, the type of skin being exposed: fair "Scandinavian" skin is more easily damaged than darker "Mediterranean" skin.

The role of suntan preparations should be to control the exposure. If you plan to be out all day, protect all exposed parts once you have completed your allowable exposure time. Cover up with liberal applications of a reliable, effective screening agent and wear lightweight protective clothing.

In picking the screening agent, those which contain "PABA" (para-aminobenzoic acid) are among the best. Baby oil offers negligible protection. Zinc oxide can give good sunburn protection if applied liberally to those small sensitive areas (nose, ears, lips, etc).

Statistically speaking, the millions of Americans who seek "fun in the sun" each year are leaving themselves wide open to skin cancer. This is the most common form of cancer ... making up about one-third of the new cases of cancer diagnosed each year (about 300.000

### TAC ATTACK

new cases of skin cancer per year)!

There are several types of skin cancer caused by overexposure to the sun, a couple of which are malignant. Squamous cell carcinoma and basal cell carcinoma account for approximately 97% of all skin cancer cases (and about 30% of deaths from skin cancer). Malignant melanoma, which recently has been tentatively linked to sunlight overexposures, accounts for the rest ... 3% of the cases, but 70% of the deaths. Skin cancer is relatively easy to diagnose, which probably accounts for the comparatively low death rate (about 1% of yearly cancer deaths, or 5,000 lives lost).

Even if you are lucky enough to escape skin cancer, don't assume you are home free. Other detrimental effects from sun on the skin include: premature aging, wrinkling, slackness, thickening and keratosis (hard, horny wartlike growths). All result in ugly, senile-type skin, even in otherwise young and middle-aged adults.

Finally, if you are on prescribed medication, you should check with your physician to be sure it will not increase your sensitivity to the sun's rays. There are many substances which will cause you to burn with shorter exposure: salicylates, barbiturates, thiazine tranquilizers (Thorzine), throzide diuretics (Diuril), a urinary antibiotic (Ne Gram); also tetracyclines (Declomycin), and sulfonamides. To top it off, some perfumes which contain oil of bergamot or oil of citrol will increase your sensitivity!

Herpes simplex is a virus which causes, among other things, "fever blisters" or "cold sores." Sunlight has long been recognized as one of the most common precipitators of these

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on, the fever blisters which may develop will most likely have the opposite effect.

While you're pursuing the "Great American Pastime" this summer, use a little care and commonsense. Don't overexpose yourself - especially on those first excursions to the beach, and control your exposure to the sun with a good "suntan" preparation. You'll look and feel a lot better.

PAGE 2 OF 4 PAGES SERIAL NO. CREW CHIEF ORGN LOCATION MDS BUCKAFB RI F-4E 4447 73-001 RWRENCH TRANSFERRED BY 1674650 CORRECTIV Flight #1. Q. IFR door was of IAW 200 utility hildraules T.O. and to . AEBE: 160KIAS, 25000 # 6W. DATE CORRECTED AUTO -ALLE LERATION 15/06/6 ORRECTED BY INSPEC HRGhocko May SMS TRANSFERRED TO DATE DISCO JCN TAG NO TRANSFERRED EY WDC DATED 5/06/ 1670 DISCREPANCY CTION Fod 0445 Gwc-1. Card va 3-5 Sterrel DATE CORRECTED 16/06/6 DN DATE DISCO WDC JCN TAG NO 16/06/6 1689 CORT While this article is directed towards F-4 jocks, it applies to all PDM facilities...check it out. DATE CORRECTED Ed TED B ALC after years in operational squadrons, I can attest to the fact that this is not an uncommon attitude. However, since assigned to Flight Test at Hill AFB, I've learned quite a bit about the system ... and the factors which contribute to How many times have you heard aircrews or these complaints. I've also picked up on some crew chiefs voice complaints such as, "This airinformation which never gets to the aircrew or plane just got back from IRAN and it's in worse the crew chief. I'd like to pass on a little bit shape than before it left," or "My bird got back about how the Depot Maintenance Program from the depot three weeks ago and it's still in the hangar"? Having recently arrived at Ogden First of all, the old IRAN concept (Inspect, Repair as Necessary) is no longer in existence. Now we call it PDM (Programmed Depot Maintenance). Hard to believe, maybe, but this is **JUNE 1976** 

### Depot Maintenance

considerably more than the typical Air Force nomenclature change. Commanders and maintenance honchos are aware of the change, but I don't think all line crews understand the difference. Under the old IRAN procedure, the aircraft was thoroughly inspected and any discrepancies were fixed at the depot. Now, the only items fixed at the depot are those negotiated by the customer (TAC/ANG/etc). Exceptions are safety of flight items which are always fixed. Spiraling labor cost is the primary reason for not repairing every discrepancy. The customer MAJ-COMs cannot afford the current \$26.00 plus/hr labor rate at the depot for maintenance items which can be accomplished at the field level.

What does this mean to the TAC aviator and maintenance people? It means that when an airplane is picked up at Hill, everything won't be perfect. For example, the only INS requirements are normally a platform and heading reference. The only radar requirement is a basic navigation capability ... will it paint or not? It also means that when the aircraft arrives at home station, it will probably be down for a period of time while items carried forward in the 781A and H are cleared. We also get many aircraft in for special project work, which don't undergo PDM. Emodels in for leading edge slat modification may have only that project and safety of flight items accomplished. On a number of older C- and Dmodels, we are performing a connector replacement project. All the electrical connections in the aircraft, in the vicinity of 3200, are replaced. This modification work has drastically affected the economic situation at the depot. So many manhours are committed to mod projects that a significant number of formerly required tasks have been deleted from the normal PDM work package.

Our working philosophy here in the Flight Test Branch is to be as thorough as possible. When we FCF an aircraft, we write up everything we find unsatisfactory. Even though many items may not be repaired, we feel that the customer should know exactly what kind of product he is getting. It's not uncommon for us to write up 25 to 30 squawks on a first-hop FCF. These discrepancies may range from missing decals and light bulbs to mach acceleration and flight control problems. Flight test aircrews must be satisfied with the aircraft before it is sold back to the user. We review all corrective action and agree to all carried-forward items. It generally takes two to three flights to satisfy this final quality check.

The delivery crew, bringing an airplane to Hill for PDM, or any project for that matter, can really improve the end product of work accomplished by thoroughly writing up any problems encountered en route. It is much easier for our maintenance people to repair most systems while the aircraft is on the production line rather than waiting for us to find the problem during flight testing. This also helps to save flow time on the aircraft while it's here, an results in getting it home sooner. We also suggest that when picking up an airplane to return home, the aircrew should thoroughly review the forms, paying particular attention to items carried forward. The launch crew foreman or any of the aircrews at Flight Test will be able to answer any questions which may arise.

If we can help with any problem either arriving or departing from Hill, we can be contacted on 361.4 MHz during normal hours. We have the capability to provide SOF or emergency assistance if required. We also provide a local area departure briefing prior to returning home with a PDM aircraft. Stop in and see us at Flight Test. It takes about 5 minutes to cover pertinent local area flying considerations. Finally, we are here to insure that people in the field are getting the best possible product. We want you to be satisfied.



# MISS!

By Capt Marty Steere TAC/SEPP

he flight of Phantoms was performing a night ground attack mission on one of TAC's air-toground gunnery ranges (inside a restricted area). The mission progressed normally until the 30degree bomb event. Number two was on final for a 30-degree pass when the range officer called out traffic southeast of the bomb circle. Due to darkness, the range officer could not accurately determine the distance from the range or the altitude of the aircraft.

Number two aborted his pass at approximately 3,700 feet AGL. Just prior to bottoming out on the pulloff, the jock in the front cockpit saw a light aircraft in the left front quarterpanel. He continued his pulloff and started a left turn. The light aircraft passed approximately 100 feet below the F-4. The light aircraft, without strobes or a rotating beacon operating, pressed on.

Since it was dark, and because it was not under ARTCC control, the light aircraft was not identified. During that same night, the range officer observed four other light aircraft in the vicinity of the range complex.

Hurling your body toward the ground at night is exciting enough without having to dodge bugsmashers. And don't think this was the first time civilian aircraft have penetrated restricted airspace. Last year, Caliente EW range was the scene of another near-miss. Imagine the surprise of 'ole Blue Two in fighting wing, going 850 fps and up pops a twin Cessna, co-altitude, 12 o'clock and 1,500 feet. Not a whole lot of time to decide which way to go and get away from the other aircraft.

While there are many good, experienced civil aviation pilots, there are also many more who are inexperienced. Flying is fun ... but expensive. Because of this, many private pilots don't fly frequently enough to hone their skills to a fine edge. These pilots may not know where restricted areas are located, what the hazards of a particular restricted area are, or have good clearing habits. If an inquisitive private pilot, on a night pleasure flight, sees airborne flares and bright little fashes on the ground ... he may investigate further.

Because of the high potential for midair collisions near TAC bases, TACR 60-3 was published on 22 September 1975. This regulation established the midair collision avoidance program within TAC and is encumbent on TAC units participating in flying operations. OPR for the reg is TAC Director of Air Traffic Control and Director of Operational Plans and Support (DCF/ DOX), and it is directed mainly towards wing staff members. However, you, too, can get involved. Some TAC wings plan to host an annual "Fly-In." General aviation pilots are invited to fly into a base for a weekend. Briefings are conducted on the wing's mission, training areas, departure and arrival routes, the flight characteristics of their aircraft. Some wings give simulator rides to the civilian pilots so they can become familiar with the complexity of TAC fighter aircraft. If your wing is hosting one of these gatherings, make sure you attend. Talk to the civilian pilots about your problems when flying a tactical mission. The exchange of information is healthy and the civilian pilots are most receptive.

Whether or not you decide to participate in direct communication with your civilian counterparts, here's a few things to think about. Look for light aircraft to be where they shouldn't, at any altitude, in any weather condition, even in restricted airspace. Use everything you have available to avoid other aircraft ... radar, traffic advisories, and every eyeball in the flight. Even if you do all the right things, I'm still not guaranteeing you won't ever have a near-miss ... but it'll sure give you better odds.

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# TACAN FIX to FIX

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

QUESTION: What are the procedural steps for performing a TACAN fix-to-fix maneuver? ANSWER: It is generally accepted that there are no procedural steps defined for the TACAN fixto-fix maneuver. AFM 51-37 does, however, provide the following guidance as a starting point for pilot technique:

1. Tune the TACAN equipment.

2. Initially turn to a heading approximately halfway between the head of the bearing pointer and radial on which the desired fix is located.

3. The initial heading may be refined by rolling out on a heading nearer the bearing pointer if the desired fix is nearer the TACAN than your position. Conversely, you should roll out on a heading nearer the desired radial fix if further from the facility than your present position.

4. Determine a precise heading by visualizing the aircraft position in relation to the desired fix on the RMI or similar instrument. This will establish a no-wind heading to the desired fix. Apply any known wind drift corrections.

5. Adjust aircraft heading as necessary and proceed to the fix.

It is apparent from the above guidance that the real key to a successful maneuver lies in the determination of a precise aircraft heading (Step 4). There are several well known techniques like the "Pencil Method" or the "Percentage Method" which will assist the pilot in the selection of a suitable initial heading. Once the initial heading has been selected, however, there is a very useful techique called the "RATIO METHOD" which is worthy of your consideration. The technique is essentially a means of evaluating your initial or

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subsequent fix-to-fix solution headings. The technique can be demonstrated by the following example and visualized on the accompanying sketch.

Assume that you want to intercept the 080° radial at 40 DME. Following AFM 51-37 guidance, you arrive at an initial fix-to-fix heading, perhaps further refined by the "Pencil" or "Percentage" Method. In order to use this technique, note your present position in terms of the radial and DME upon which you are located. In this example, let's assume you are on the 040° radial at 60 DME and you want to hit the 080° radial at 40 DME. At this point, you have a 20 DME difference (60-40 - 20) and are 40° from the desired radial (080 - 040 = 040). This gives you a ratio of 20 to 40 or 1 to 2. If, in fact, your heading is correct and you are proceeding in a straight line fix-to-fix to the 080° radial at 40 DME, this "RATIO" must remain a constant. So. to use the "RATIO METHOD," continue on your present heading and check the ratio again at a convenient time when your present position has changed. Let's assume we check the ratio when

must have changed to 50 (40 + 10 = 50; 10 DME/20° = 1/2). If the DME is greater than 50, your initial heading is incorrect (you have not decreased the DME rapidly enough) and should be adjusted by a turn towards the bearing pointer. If your DME reads less than 50 (you have decreased your DME too guickly), you must adjust your initial heading by turning away from the bearing pointer towards the desired radial. The amount of heading change required depends on the magnitude of the error and varies with groundspeed and distance from the TACAN station. Experience has shown that a change of 5 to 10 degrees will generally provide satisfactory results under most circumstances. If your DME reads 50 (in which case, you really don't need this aid), the ratio will be a constant 1/2, and your present heading is taking you in a straight line towards the fix. Make corrections when course errors become apparent, repeat the "RATIO METHOD" as often as convenient and proceed direct to the fix. >

order to have the same ratio (1/2), the DME



### EMERGENCY SITUATION SITUATION TRAINING, F-105

By Maj Al Adams 35th TFW/DOV George AFB, CA

### SITUATION:

You are number two Wild Weasel on a SAM suppression mission during a RED FLAG strike on the Nellis Tactical Range. It's been "burner," "jink," "break," and "take-it-down" ever since you checked in on the strike frequency. The SAMs, MIGs, and Triple A are all alive and well on the Tonopah EW Range today.

Thud 02 is Bingo and, after three attempts through the comm jammer, lead acknowledges with a wing rock and turns for home. The combat egress is fine, but why can't you catch up? A glance at the gauges shows only 97% RPM and low EGT with the throttle at military. How do you keep up with the rest of the Weasels?

**OPTIONS:** 

- A. RTB in minimum burner
- B. Jettison external load and fly home at 97%
- C. Select Emergency Fuel

D. Call Los Angeles Center for a tanker ANALYSIS:

Option A would probably get you halfway home in a hurry. Liberal use of afterburner in the target area is probably the reason you were the first to Bingo. The reduced RPM dictated going outboard with the throttle early in the battle.

Option B is probably a good choice if you're

convinced that it's a good single engine philosophy to "not mess with it as long as it's still running." Ninety-seven percent is the approximate power setting required to fly final in an F-105G. Now that you are clean, it should be no sweat, right?

How about option C before you do anything drastic, like punching off the stores? The Dash One says that the emergency fuel system should be used any time failure of the normal fuel control system is suspected. The system may be selected at any RPM or throttle setting. The only limitation that would apply to your RTB is to move the throttle slowly to avoid exceeding RPM and EGT limits. Burner is still available should you need it.

The D choice has few possibilities. The last time a tanker was there when you needed it was on the way back from "Downtown." If this was really your day and a KC-135 did come by trolling for thirsty Thuds ... could you hang on with only 97% RPM? Besides, your problem is power, not fuel (assuming you eliminated option A).

Old Thud Drivers have to be wise. It's smart to select emergency fuel when you suspect a fuel control problem. Don't hesitate to use an alternate method when the primary may be on the blink.

### TACTICAL AIR COMMAND



### Maintenance Safety Award

Staff Sergeant Gary K. Baldwin, 834th Avionics Maintenance Squadron, 1st Special Operations Wing, Eglin AF Auxiliary Field No. 9, Florida, has been selected to receive the Tactical Air Command Maintenance Safety Award for this month. Sergeant Baldwin will receive a certificate and letter of appreciation from the Vice Commander, Tactical Air Command.

### TACTICAL AIR COMMAND





Airman Terry Smith, 23d Organizational Maintenance Squadron, 23d Tactical Fighter Wing, England Air Force Base, Louisiana, has been selected to receive the Tactical Air Command Crew Chief Safety Award for this month. Airman Smith will receive a certificate and letter of appreciation from the Vice Commander, Tactical Air Command.

### TACTICAL AIR COMMAND



### Ground Safety Award of the Quarter

Staff Sergeant James C. Crenshaw, 823d Civil Engineering Squadron (Heavy Repair), Eglin AF Auxiliary Field No. 9, Florida, has been selected to receive the Tactical Air Command Ground Safety Award for the first quarter 1976. Sergeant Crenshaw will receive a certificate and letter of appreciation from the Vice Commander, Tactical Air Command.









### RESPONSES FROM THE FRONT

#### Fleagle

Your picture on page 12 of the April issue is undoubtedly one of your finest poses. Next to the A-7D, you are my favorite bird. Suggested topics for future back cover studies are: wingman considerations/capabilities or near-miss/midair hazards. You look sierra hotel in your "fighter bird" gear. Keep up the great work.

### Capt Fred Drake 23 TFW/SEF, England AFB LA

#### Dear Fred

Glad you liked my svelte stance ... I know I'm sleeker than a Sluf! I've talked to my pen pal, Stan Hardison, and we're trying to incorporate your ideas. How about a story from some of your A-7 buddies?



#### Fleagle

Recently one of our tactical aircraft returned from another base with the following info write-up in the 781: "Postflight and preflight not accomplished due to lack of experienced personnel." The immediate thought that came to mind is "have we so reduced our personnel in an effort to save money that we can't afford a preflight or postflight of our aircraft." The enroute supplement stated that transient alert service at that base was available 24 hours daily. It did advise us to expect extensive delays for minor maintenance and servicing between Friday afternoons and Monday mornings and holidays. Maybe if this and other units are so short on maintenance and transient alert personnel, they should put out the word to the world so we don't plan on stopping there.

Anonymous

#### Dear Anon

Your Fleaglegram leaves a few questions unanswered, such as the type of aircraft, time of the week the aircraft transited the base, whether or not the limited service had been "notamed," and whether or not the aircrew performed the required inspections. I agree that if full transient services aren't available, this information should be available to the aircrew, but it's not only the flight crew's responsibility to insure the checks are completed, in many cases, the Dash-One requires them to physically perform the checks. Most aircraft Dash-Ones and/or checklists outline the required preflight, postflight, and servicing instructions. For fighter-type aircraft that don't carry Tech Orders, T/A will have them available. Money is short and manning cutbacks are affecting everybody. It would be worth the aircrew's time to get familiar with aircraft inspection requirements before they launch on a TDY.



Answers to AIRCREW QUIZ								
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OTHER UNITS								
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MAJOR ACCIDENT COMPARISON RATE 75/76 (BASED ON ACCIDENTS PER 100,000 HOURS FLYING TIME)

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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
IAU	76	2.9	8.6	9.0	7.3					1			
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

