

# TAC ATTACK

JULY 1983

GET THE FACTS  
STRAIGHT . . . Pg 4

get the facts straight: pg 4





# ANGLE OF ATTACK

It is my extreme pleasure to assume the duties as chief of safety and add my name to the masthead of *TAC Attack*.

I will use "Angle of Attack" as a forum for communicating safety philosophy directly to you, our readers. Of course, to be effective, communication must be two-way. We need your feedback on how we can make this publication more helpful and interesting. More importantly, we need your inputs on improving how we do our business. We solicit your telephone calls, cards, letters, and articles. We are committed to making *TAC Attack* a publication that will help you do your job better.

I'm a strong believer that safety is a by-product of doing things right. History is replete with examples of accidents directly following those who cut corners, fail to use tech data, are untrained for the job, or have an excessive desire to succeed at the expense of doing it right. This month we chronicle a few instances of the results of *not* doing it right. In each of these cases there was ample opportunity for one or several people to step into the situation and say, "Wait a minute, let's do it right." However, their failure resulted in serious mishaps.

In all of our units we can point with pride to hundreds of activities that occur daily resulting in excellent mission accomplishment. We have found that the safe operations are those which are done professionally by quali-

fied people who are properly using proven tech data. The lesson is clear -- safety is not an afterthought, or even the paramount thought -- safety is the result of professional mission performance. In short -- do it right and it will be safe.

Col Dick Ely's departure means the departure of five years of "corporate memory" and tremendous safety expertise. His departure is not TAC's loss because he remains assigned to TAC, going to Wright-Patterson to provide Systems Command with TAC experience, knowledge, and philosophy. We in TAC will continue to benefit from his service. Because of his strong leadership, it is my good fortune to assume the helm of a fine organization.

Harold E. Watson, Colonel USAF  
Chief of Safety





**ON THE COVER:**

**THE SOF WATCHES  
FROM THE TOWER**

# JULY 1983

DEPARTMENT OF THE AIR FORCE

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#### TACRP 127-1

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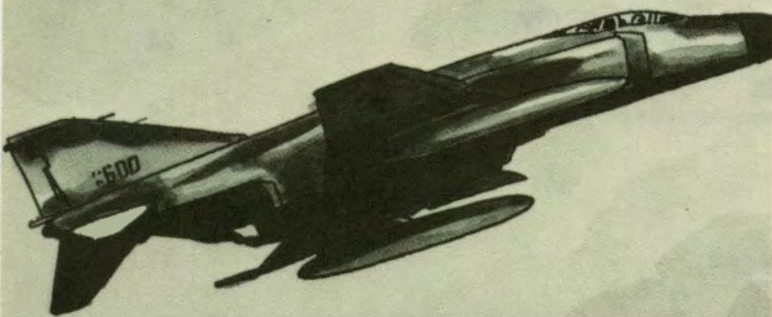
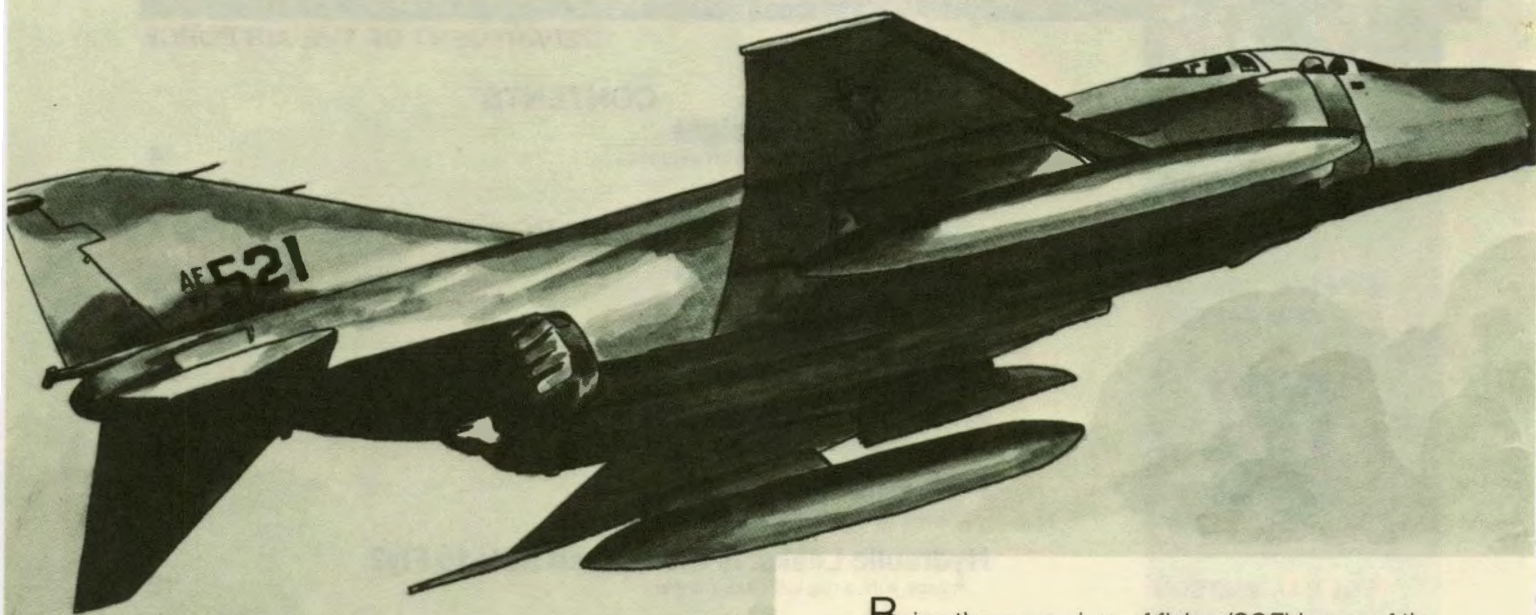
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# GET THE FACTS ST



Being the supervisor of flying (SOF) is one of the most important and difficult jobs we're given. To sit on the ground and understand what's taking place in someone else's airplane can sometimes call for the wisdom of Solomon. Over the years we've learned some lessons about what the SOF can and cannot do well. The following mishap, which happened several years ago in a land far away, contributed to our corporate knowledge.

A two-ship of F-4s was scheduled for a gunnery sortie at the range. Recovery weather at home base was forecast to be low enough to require an alternate, so the flight briefed alternate airfields, which we'll call Northwest AFB and West AFB. Middle Field was mentioned as an emergency field, but the weather and approach there weren't covered in the briefing.

The flight finished the work on the range and headed home. En route to the home TACAN, the flight checked with approach control for the weather. They were told the weather was 500 scattered, 1,200-foot broken, 3,000-foot overcast, visibility 2 miles in rain. So the flight lead asked for single ship approaches without specifying the type approach. The wingman split off and was first to make an approach.



# RAIGHT



As he began his approach, the wingman had 4,800 pounds of fuel on board. Flying the TACAN arc, the pilot and the WSO of number 2 talked over the type of approach they should fly. Normally the aircrews in this unit ask for a GCA while on the TACAN arc, so the pilot mentioned to the WSO that it was time to get a frequency for GCA. The WSO reminded the pilot that the week before several aircraft had been vectored too far left for a safe approach by GCA controllers. Approach control was manned by nationals of the host country, not American controllers. The WSO suggested they fly the whole TACAN approach; the pilot agreed.

They flew the approach within two degrees on the course direction indicator. As they broke out of the weather on final approach, they were two degrees right of course by their instruments. The pilot corrected to the left and looked left for the field. The correction put him left of course and the field was actually to his right. About one-half mile from the runway, the WSO spotted the field at their one o'clock position. He told the pilot. the pilot saw that they were in too close for a safe approach from that point, so he began to go around.

The SOF had heard the crew report 6 miles on final. That's when he first became aware that they

were flying a TACAN-only approach. He saw the airplane at about the same time that the crew had seen the field. The SOF called on tower frequency and told the aircrew to go around and get a GCA just as they started their missed approach. The SOF, who was also the aircrew's squadron commander, was rapidly losing confidence in them; he couldn't understand why they flew a TACAN-only approach when GCA was operational.

On their missed approach, the pilot turned slightly left from the northwest runway heading and intercepted the 290-degree radial outbound. He climbed to 5,000 feet and requested a GCA frequency. After contacting GCA, he was told to squawk code 1700. The aircrew then assumed they were under positive radar control. They continued out the 290-degree radial, waiting for GCA to turn them to downwind.

The SOF assumed they had turned south to intercept the GCA downwind. He asked them their fuel, and they told him 3,500 pounds. Then he devoted his attention to monitoring the flight leader's approach and landing. While he was watching for Lead, he took a minute to call the squadron ops officer, asking him to call the SOF at Northwest AFB and tell him he might be getting a diverted F-4 with minimum or emergency fuel. He also told the ops officer that he wanted the pilot of number 2 to be restricted to flying with instructor pilots only. That comment was another indication that he had lost confidence in the pilot's flying.

While the SOF turned his attention to the leader's approach, the GCA pattern controller's attention was also on the leader. So the wingman was allowed to continue out the 290-degree radial until he was 20 miles from the field before GCA asked his position. At 22 miles, GCA turned him to 130 degrees for downwind.

After Lead had landed, the SOF came back to the GCA frequency that the wingman was on. He expected to find them about ready to turn final approach. The SOF asked GCA, on their frequency, what the position of number 2 was. GCA replied that the wingman was on the 210 radial at six miles. That puzzled the SOF. He reasoned that either the pilot was incapable of flying in weather or else the GCA controller was vectoring them unnecessarily and the



## GET THE FACTS STRAIGHT

pilot was doing nothing about it. So he called on the radio to the aircrew, "What are you doing?"

The crew recognized the voice of their squadron commander. They began to wonder what they really should have been doing. The pilot responded, "Trying to get a PAR." Immediately afterward, the GCA controller told them to descend from 5,000 feet to 4,000 feet.

Now the SOF was really perplexed. In his experience the descent to 4,000 feet had always taken place on a dogleg to base with a heading of 090 degrees. He assumed that they were on a 090 heading. But if they were on the 210 degree radial at 6 miles, heading 090 degrees, they were going to be in too close for a safe approach. The SOF asked what their fuel was. The pilot answered that they had 2,400 pounds.

The SOF had figured when the aircrew went around from their first approach that they would be a decision height for this approach with 2,500 pounds of fuel on board. He estimated that it would take 1,500 pounds of fuel to divert to Northwest AFB, using optimum techniques. So they should have been able to shoot the approach, divert to Northwest AFB if they had to, and still land with about 1,000 pounds of fuel. But now that wouldn't work out.

Believing that the pilot didn't know what he was doing or else was not under positive GCA control, the SOF ordered them to divert. He told them to climb immediately on a northwest heading and proceed direct to Northwest AFB. He also told them to climb to 30,000 feet and remain there until they were 60 miles from Northwest AFB, then to make a 250-knot emergency descent to the field. He added emphatically that he didn't care what anyone told them, they were to climb up, proceed direct to Northwest AFB, and make a straight-in full stop. The weather at Northwest was good, he said.

The pilot followed orders. He immediately turned northwest and started a 350-knot climb. The WSO called the SOF and asked whether they should jettison their empty 370-gallon fuel tanks. The SOF told them not to jettison at that time because he didn't know what the tanks would hit. Then the WSO told the SOF that they had 2,000 pounds of fuel remaining and he didn't think they could make it to Northwest AFB. Just then the Fuel Low Level light came on, so the pilot tried to correct the amount to 1,800 pounds. But the SOF didn't hear his call. He as-

sumed the airplane was passing 16,000 feet with 2,000 pounds of fuel. Actually, they were at 6,000 feet in their climb.

From there on, the aircrew was on its own. During the climb, the WSO eventually convinced the pilot that they had to jettison their tanks, so they did. The pilot climbed at 350 knots all the way to Flight Level 325. Neither he nor the WSO attempted to figure optimum climb/cruise information using the checklist. After leveling off, the pilot pulled the power back for a very short cruise at altitude. Then at 54 DME from Northwest AFB, he started down at 250 knots and half-nozzle. Shortly afterwards he pulled the throttles





to idle. At 45 miles they had 600 pounds of fuel remaining on the indicator.

At 42 miles the Northwest approach controller asked them if they wanted to land at Middle Field, which was ten miles away. The WSO asked for the weather at Middle Field. It was 2,000 broken, 3,000 overcast, 4 miles visibility in light rain. Never having flown an approach to Middle Field and remembering the strong order by the SOF to go to Northwest AFB, the aircrew decided to bypass Middle Field and continue to Northwest.

Northwest approach advised the aircrew to expect a visual approach, but the pilot insisted on a

GCA. So they were vectored to a three-mile final. The engines flamed out at 2 1/2 miles, and the crew ejected. They both survived with minor injuries.

Obviously, there were a lot of errors made in this mishap. The crew based their original decision not to get a GCA on incomplete information. The poor vectoring the week before had taken place when controller training was in progress, not with fully trained controllers. With only two miles visibility, the field was below minimums for the TACAN approach. Maybe if they had flown a GCA, the incident would never have happened.

The divert was also poorly flown. They almost made it to Northwest AFB. With better technique, they might have landed.

But finally, we have to question the way the SOF handled the whole situation. He was the pilot's squadron commander and was well aware of the pilot's lack of experience. But he let that opinion cloud his understanding of what was really happening. He made assumption after assumption without finding out what was really going on in the cockpit and in the pattern. He wasn't asking the right questions of the right people: tower, approach, the pilot—the folks who had the information and wherewithal to effect a safe recovery. At the end, based on erroneous information, he gave an inappropriate directive to the aircrew. The aircrew responded to the authority of the SOF without making him completely aware of the facts and circumstances of their predicament; they followed what they should have sensed was an unsafe course of action.

TAC's supplement to AFR 60-2 defines the relationships between the SOF, air traffic control, and the aircraft commander. The SOF assists the DCO in directing the activity of unit airborne aircraft to ensure the safe conduct of the flying operation. But the directions must be based on factual, timely, and objective information to determine a correct course of action. That's not what happened in this case. Instead, the SOF cut across appropriate communications channels and did not ask for the right information.

This happened a while ago, and we've learned from it. But maybe all of us, pilots and SOFs, ought to review our responsibilities in the relationship between aircraft commander and SOF. Finally, we must know the tech order and the regulations. ➤





# TAC

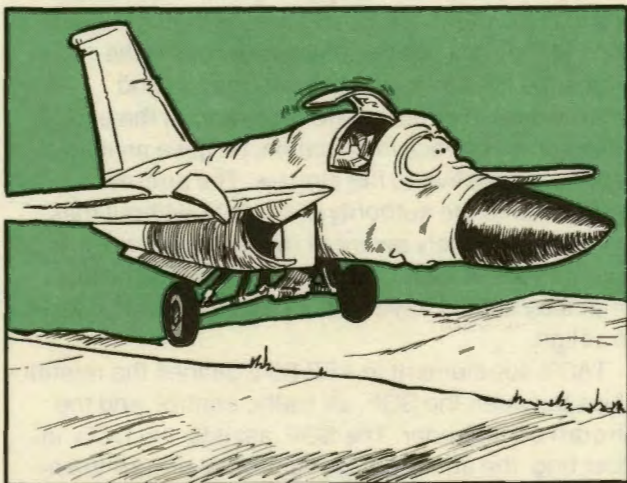
tac tips

## tips

INTEREST ITEMS,

## Warning Light Isn't Enough

During preflight, the canopy warning light on the F-111 checked good. The WSO closed the right canopy before the pilot taxied. After the end-of-runway checks the pilot closed his canopy. The cockpit pressurized normally, and the warning light was out. But after liftoff, at about 180 knots, the right canopy hatch flew open. The aircrew brought the airplane



around and landed as soon as they could. The canopy stayed with the airplane, but afterwards the right hatch was found to be sprung and had to be replaced.

When the WSO had closed the canopy, he hadn't fully closed the handle even though it looked closed. Actually, the right canopy hatch handle was about one inch from being fully closed. The handle and lock tab were resting on top of the safety latch locking mechanism. The canopy hatch was all the way down, but the locking tabs were not yet overcentered.

Overcentering takes place during the last part of the handle's travel.

The warning light went out and the cockpit pressurized because the lock tabs were fully engaged, despite the fact that overcentering was incomplete. During takeoff roll, airframe vibrations and air loads caused the hatch locking tabs and hatch handle to open, allowing the hatch to then open.

The dangerous thing is that this situation gives little warning of the problem. This unit has submitted a change to the flight manual to warn aircrews to pull on the handle to make sure the lock tab is engaged in its latch. The canopy warning light doesn't ensure a locked canopy.

## Virus Victim

An F-16 pilot was flying his second mission of the day. About an hour into the mission, he began to feel bad. He suddenly felt tired, and his legs seemed to be very heavy. He returned to his home field and landed OK; but while taxiing back, he began to shiver from the chills. He parked the airplane and climbed out, continuing to feel worse. As he was walking in, a squadron van offered him a ride. He climbed in the van and asked to go to the hospital instead of the squadron.

At the hospital he was admitted for observation. A check of the airplane's oxygen system showed no discrepancies. Initial evaluation of the pilot in the emergency room also ruled out hypoxia, along with hyperventilation and hypoglycemia. Continued observation in the hospital showed that the pilot was suffering from a viral infection.

The virus infection was compounded by poor nutrition: the pilot hadn't eaten in 20 hours. Dehydra-

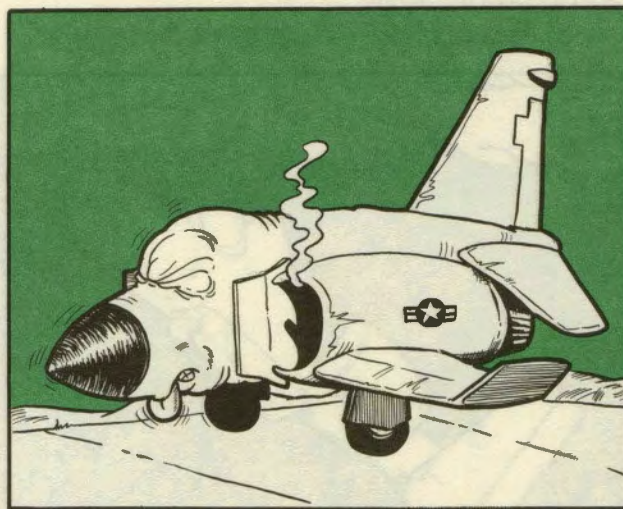


## MISHAPS WITH MORALS, FOR THE TAC AIRCREWMAN

tion, fatigue from a long day, and the stress of adverse weather and demanding missions contributed to the severity of his symptoms.

The pilot has since recovered from the virus with no complications. But if the weakness and shakes had come upon him during a more demanding phase of the mission, he might have become one of those unknown-cause losses.

Maybe we can't do anything to protect ourselves from viruses, but we can see to it that our bodies are properly nourished. And even a minor ailment deserves a visit to the flight surgeon. In our business, complications can really be severe.



parently this unit—or at least this pilot—doesn't follow Dash One procedures. The Dash One clearly states that the crew chief will hand the pin bag to the aircrew member for stowing. That's why this story belongs here. If the pilot had been more concerned about his ejection seat being ready for flight, the incident never would have happened.

### F-4 Swallows Seat Pins

Most of our stories about foreign object damage are in "Chock Talk," but this one belongs here. Read it and you'll see why.

The aircrew arrived at their F-4 with plenty of time to do a good preflight. They strapped in with six minutes left before their start-engine time. The crew chief helped both the pilot and the WSO strap in. He pulled the WSO's seat pins, but he didn't pull the pilot's face curtain pin. That pin remained installed; the pin bag was lying on the left canopy rail.

The pilot started engines normally. When he taxied a crosswind from the right blew the pin bag off the canopy rail. The bag went down the left intake. Its velcro fastener came apart, and six seat pins were sucked into the intake. Four of them entered the compressor and did extensive damage to all stages of the engine.

The pilot had never taken the time to ask whether his seat pins were pulled. *He took it for granted. Ap-*

### Reversion Perversion

Two A-10s were flying a surface-attack tactics mission with Mavericks underneath a ragged 1800-foot ceiling. As the weather deteriorated, they knocked off the tactics work and began to egress the area. Lead descended to 250 feet at 300 knots. The wingman turned to position himself in formation at about 400 feet above the ground.

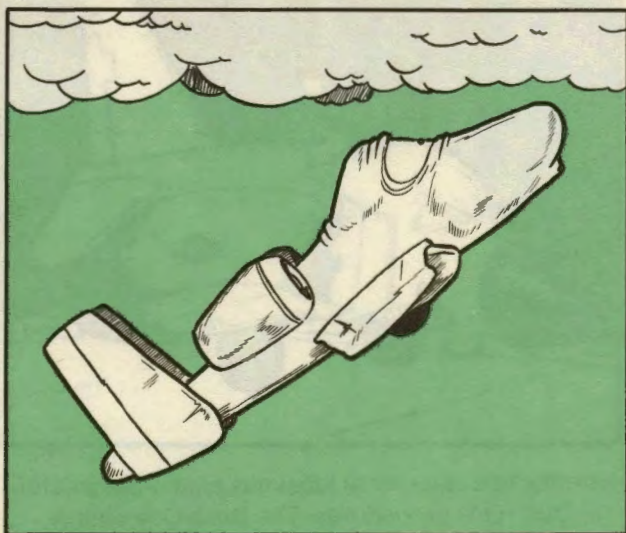
As the wingman was rolling out of his turn, he reached back to turn off the videotape recorder. He



## TAC TIPS

moved a switch aft and then noticed a flashing heads-up display and Master Caution light. Out of the corner of his eye, he could see that some other lights were lit on the caution light panel. Then the nose of the airplane pitched down. The pilot pulled back on the stick and got the nose pointed up. At the same time, he tried to roll the airplane level, but the control stick wasn't effective in roll. Using rudders, he was able to level the wings.

He climbed until he was just below the overcast,



then pushed the nose over to stay out of the clouds. He glanced at the hydraulic gages, which appeared normal. Then he checked the flight control panel and saw a Left Aileron Jam light, so he moved the switch toward the light, disconnecting the aileron. Glancing back at the hydraulic gages, he noticed that the hydraulic pressures were now at zero. He reached over to put the flight control switch in manual reversion. But he found the switch already in manual reversion. The pilot moved the flight control switch back to normal and regained normal flight controls. Then he reengaged the left aileron, flew home, and landed without any more problems.

It looks like the pilot moved the flight control switch during egress when he meant to move the videotape recorder switch. The confusing indications on the hydraulic gages and the jam light took

place during the 14 seconds it takes to transition to manual reversion.

This is the second time in recent months that a pilot has unintentionally selected manual reversion while turning off the videotape recorder on egress. (More correctly, this is the second incident that we know of. Who knows how many times it has happened without being reported.) The two switches are shaped the same and require the same type of motion. But the switch for the videotape recorder is six inches to the rear and four inches to the right of the flight control switch.

Until the hardware can be changed to distinguish the two switches, maybe we ought to check that we have the right switch before we turn off the videotape. Yet flying formation below 500 feet doesn't seem to be the most opportune time to be looking at switches. Can't the switch wait for a better time?

## Write About Your Bad Feelings

While doing advanced handling maneuvers, an F-4E pilot started to pitch back into a slice. After the slats extended, the aircrew checked their G-meters. The front cockpit showed 8.2 Gs and the rear cockpit indicated 7.5. The aircraft returned to base and landed. Afterwards, it was impounded.

The over-G caused a fuel leak in the right wing where it joins the fuselage. Other than that, the damage was limited to a group of nut plates that needed replacing.

Two months before, this same airplane had been involved in another over-G. Both pilots who were flying during the over-G incidents reported that the airplane seemed to be very sensitive in pitch. Other pilots in the squadron who had flown the airplane agreed that it was pitch sensitive. So the maintenance troubleshooters checked the pitch control system and the autopilot. They found a failed pitch system amplifier and a failed autopilot control amplifier. When those were replaced, the pitch sensitivity problem was solved.

Of course, the problem could have been solved much sooner. If one of those pilots who said it felt pitch sensitive had taken the time to write up his feelings in the 781, we might have avoided both over-Gs. At the very least, we should have been able to prevent the second incident.



# AIRCREW OF DISTINCTION

On 26 January 1983, MAJ CHRISTOPHER S. LONG was flying an F-4D on a single-ship transition and desensitization sortie with an inexperienced student weapon systems officer (WSO) in the back seat. After flying through several maneuvers, Major Long saw the fire warning light for the left engine illuminate. He pulled the left throttle to idle. The left engine instruments fluctuated, and the utility hydraulic pressure dropped to zero. He turned the airplane towards Homestead Air Force Base and shut down the engine.

Major Long was facing one of the most difficult emergencies in the F-4—landing with an engine out and the utility hydraulic system failed. The inexperienced WSO was unable to provide much help. On top of Major Long's other problems, the Master Caution light began to flash, the telelight panel stopped functioning, and the fuel gage began to cycle continuously.

Declaring an emergency, he began a single-engine descent and contacted the supervisor of flying (SOF). The aircrew was over water about 60 miles from Homestead. They felt two thumps. Unable to check the outside of his aircraft, Major Long thought the thumps were from the left engine. Actually, both 370-gallon external fuel tanks had jettisoned because of fire damage to wire bundles in the left engine bay.

Without a qualified WSO to help him with the checklist, Major Long set up for a long, straight-in approach and began slowing for emergency gear lowering. As he descended through 6,500 feet and slowed below 300 knots, the airplane began an uncommanded roll to the left. He tried to recover, but the airplane wouldn't respond. The crew were prepared to eject;

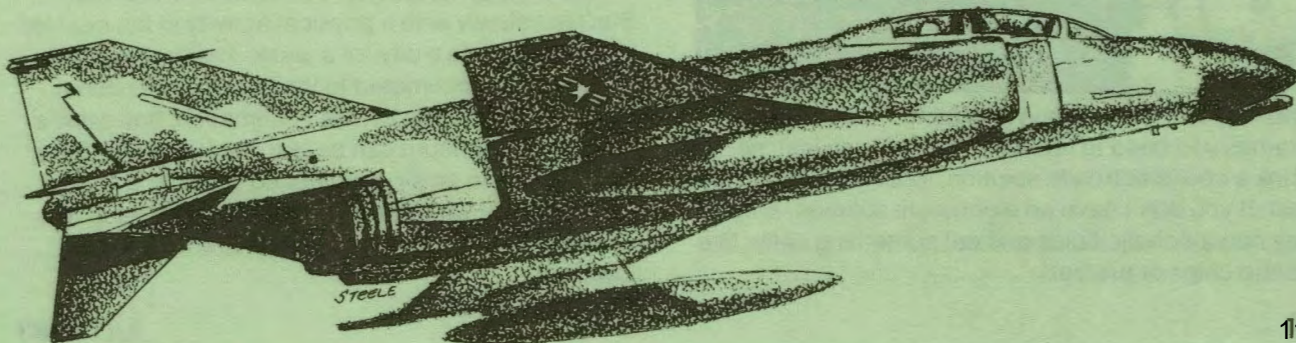


**Maj Christopher S. Long**  
309 TFTS, 31 TTW  
Homestead AFB, FL

but Major Long was able to lower the nose, accelerate above 300 knots, and regain control of the airplane.

While still above 5,000 feet, he blew the gear down. Coordinating and confirming all checklist procedures with the SOF, he flew final approach at 250 knots, then bled off the airspeed to 230 knots at touchdown, intentionally landing 2,000 feet down the runway past the approach-end arresting gear. He used emergency brakes for directional control, lowered the tailhook, and engaged the departure-end BAK-12 gear at 150 knots. The airplane stopped, and Major Long and the student WSO climbed out normally.

Later investigation showed that a failure in the afterburner fuel pump had caused the fire and loss of utility hydraulic pressure. The fire had also damaged wire bundles and lower fuselage panels and had caused secondary fires from oil and hydraulic lines that resulted in extensive engine damage. Major Long's superior airmanship in handling this difficult situation prevented loss of the airplane and possible loss of life. He has earned the Tactical Air Command Aircrew of Distinction Award.





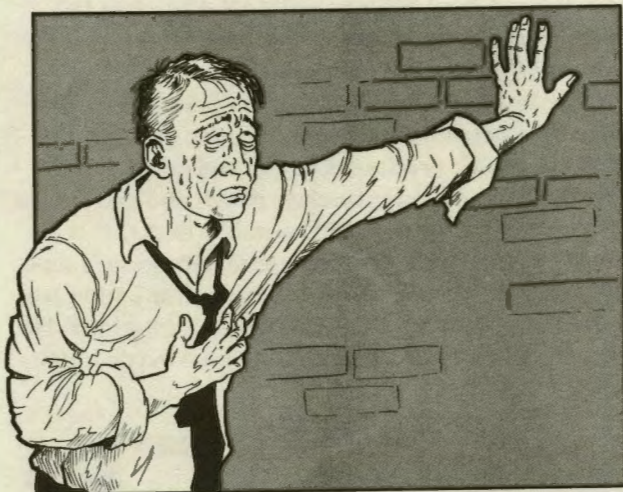
# DOWN TO EARTH

## Heat Stress

After working or playing outside on a hot day, have you ever felt dizzy or had muscle cramps? If you have, then you probably had a reaction to heat stress.

Heat stress is a combination of environmental heat and physical activity that produces body heat. You have to have both to create heat stress. The body reacts according to the degree of heat stress, and sometimes a heat-related illness occurs. There are three heat-related illnesses: heat cramps, heat exhaustion, and heat stroke.

Heat cramps occur after hard physical activity in a hot environment. Loss of water is a factor, but lack of salt intake is what causes the cramps. Legs and stomach are where you'll probably get the cramps,



and they will follow heavy sweating. To treat heat cramps you need to replenish the salt you lost; so drink a cool electrolyte solution, loosen clothing, and rest. If you don't have an electrolyte solution, drink any non-alcoholic fluids and eat something salty, like potato chips or pretzels.

Heat exhaustion (also known as heat collapse or heat prostration) takes longer to develop and results from loss of fluids and salt. Symptoms include profuse sweating, weakness, rapid pulse, dizziness, nausea, headache, and possible unconsciousness. Treat it by resting, drinking a cool electrolyte solution or any other non-alcoholic fluids, and cooling the body.

Heat stroke is the most dangerous of the heat-related illnesses. It's a failure of the body's cooling mechanisms. Symptoms of heat stroke are the same as heat exhaustion except that with heat stroke there won't be any sweating, the skin will be flushed, and the body will be hot. Some people can collapse from heat stroke without any warning symptoms. Heat stroke is a medical emergency. Get the person to a hospital or doctor immediately. In the meantime the important thing to do is cool the body. Cool the body with water, bring the person into an air-conditioned room or put them in the shade, and remove as much clothing as possible.

You can prevent a heat-related illness by drinking plenty of fluids, increasing salt intake, wearing lightweight or light-colored clothes, and taking frequent breaks from the heat to cool down. Salt tablets are not recommended—eat salty foods; and alcoholic beverages are not recommended fluids because alcohol will dehydrate you even more. To combine the fluids and salt, you can buy an electrolyte solution at the grocery store.

It also helps to become acclimated to the heat. Start out slowly with a physical activity in the heat for about two hours a day for a week. That's all it takes. Once you're acclimated to the heat, it takes about two to three months to lose acclimation; however, a measurable amount can be lost in a few days. If you stay indoors in an air conditioned room for a whole weekend or if you have just returned from a trip to a cooler climate, expect your heat tolerance to be lowered.





## Excuses, Excuses

James Stahly of State Farm Insurance Company collects strange reasons people have given on insurance accident forms for being involved in an accident. Here are what he considers some of his better ones:

"Coming home, I drove into the wrong house and collided with a tree I don't have."

"A truck backed through my windshield and hit my wife's face."

"I had been driving for 40 years when I fell asleep at the wheel and had an accident."

"I saw a slow-moving, sad-faced old gentleman as he bounced off the roof of my car."



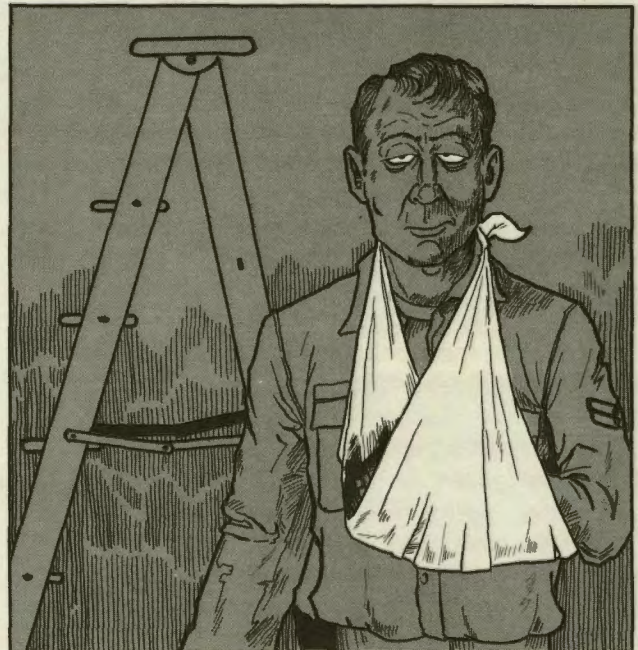
"As I rounded a curve, I felt a sudden rush of air. When I looked over, my wife was gone."

—Courtesy of *Family Safety*,  
a publication of the National Safety Council

## Think About It

An airman was sent to get some file folders that were located in a storage area about 10 feet above a latrine; so he got a step ladder and climbed up. While he was up there, someone moved the ladder to get to the latrine. Instead of calling for someone to put the ladder back when he got ready to come down, the airman decided to step onto a nearby soda machine and slide down. As he slid down the side of the soda machine, the ring on the finger of his left hand caught on a hinge and pulled the end of his finger off. His entire finger had to be amputated.

It's hard to believe that a ring could be a safety hazard, but it's certainly worth thinking about. And, while you're thinking: if it takes a ladder to get up, it takes a ladder to get down.







**Crumby Toasters.** If you let bread crumbs build up in your toaster, you may toast more than your breakfast. Most toasters have trays on the bottom for easy cleaning, so clean them regularly.

**Charcoal.** Serious fires have started by spontaneous combustion of charcoal. Store it in a ventilated, dry place, away from the house. If it gets wet, don't bring it inside; use it outside or get rid of it.

**Who's the Fish?** If you get snagged with a fish hook past the barb, the Red Cross recommends that you cut the line, bandage the wound, and go to a hospital to have it removed. Don't remove it yourself.

**Air Conditioners on Boats.** Make sure there's a safe distance between the generator exhaust and the air conditioner intake on your boat. Otherwise, on hot, calm days, the air conditioner could suck carbon monoxide fumes into the cabin.

**Don't Sink at the Dock.** Is your bilge pump working? Regularly clean the bilge and pump strainer, check for leaks, and insure there's an adequate power source for the pump. An adequate power source means regularly recharging and servicing the battery; making sure your bilge pump is connected to a power source, even with the master switch turned off; and checking for blown fuses, shorted out wiring, and corrosion of wires and switches.

**Boating Rules of the Road.** When two boats approach head-on, each must go to the right and pass left side to left side. When boats cross at right angles, the boat on the right has the right-of-way. When overtaking or passing, the boat being overtaken has the right-of-way. Rowboats and sailboats have the right-of-way over powerboats unless they are overtaking a powerboat.

**Medications and Hot Weather.** If you take tetracycline, tetracycline cousins like minocin and vibramycin, or sulfa drugs like septrin, bactrim, gantrisin, and gantanol, too much sun could cause skin blotching or sun poisoning. On the other hand, if you take diuretic drugs like hydrochlorothiazide (hctz), lasix, dyazide, or nygrotin, activities in high or intense heat could cause electrolyte imbalance. If you're taking any drugs, check with your doctor about the effect of those drugs in sun and heat.

**Swimming Pools.** Don't let anyone dive into an above-ground swimming pool, warns the National Swimming Pool Foundation. A swimmer won't be able to glide out and up safely. One out of eight serious spinal-cord injuries is from a diving accident. And be careful when handling swimming pool chemicals, especially powdered chlorine. When it's combined with water, hydrochloric acid is formed and serious burns could follow.

**A Note to Golfers.** Don't give those golf balls with broken surfaces to small children to play with. If the outer surface is peeled off, the fluid core might explode.

**Diving Boards.** Check that they are level. If a board is tilted up, a diver could hit it coming down. If the board is tilted down, a diver could be thrown out beyond the diving area.

**Burglaries.** Most burglaries occur between 9:30 a.m. and 3:30 p.m. when there is no one home. Access is usually through unlocked or unsecured doors, windows, and garages. Burglars also get tip-offs from newspaper ads, obituaries, and social announcements—make sure your address isn't in them. And if you're home when someone breaks in, don't confront them. Some of us might feel like antiques, but we can't be replaced.



# SHARPENING THE FALCON'S TALONS

The F-16 Fighting Falcon is receiving its first major depot-level modifications through a program called Pacer-Loft I.

Pacer-Loft I is a package of 150 possible modifications that enhance the avionics and weapons delivery systems in the Air Force's multimission fighter.

The modifications are being installed on 140 F-16A and B model aircraft at the Ogden Air Logistics Center, Hill AFB, Utah.

F-16s are manufactured in blocks of planes in a similar configuration. Technical advances are incorporated in the system's design on the production line, so the modification requirements vary from plane to plane.

Pacer-Loft I is designed to bring those F-16s manufactured in Blocks 1 and 5 to the Block 10 configuration. Aircraft in this program were manufactured in 1978, 1979, and 1980.

"When the airplane leaves our depot, it will be a Block 10 airplane electronically," said Ken Adams, F-16 Planning Section, Aircraft Division, at Hill AFB.

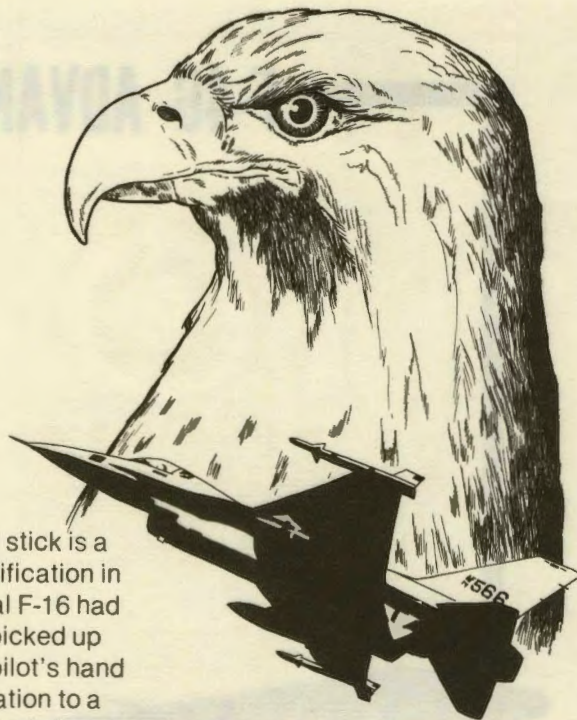
Maj. Bob Barrett, Ogden ALC test pilot for the F-16, said, "One of the modifications puts in a movable stick that gives better response and the pilot a better feel of the airplane. It's always been a fun airplane to fly, and the changes just make it easier."

The movable control stick is a major Pacer-Loft I modification in the cockpit. The original F-16 had a stationary stick that picked up the pressure from the pilot's hand and relayed the information to a computer for flight control. A new control stick with some flexibility was designed to give pilots a better feel of flying the airplane.

To make this change, workers on the maintenance production line remove the stick component and send it to General Dynamics for modification. The cockpit hardware and wiring on the planes are then modified to match the new stick configuration.

Workers remove the "black boxes" containing computer parts and ship them to the manufacturer for modifications. They then install the wiring and hardware changes to match the improved components returned by the manufacturers. Operational checks on various systems such as the radar and flight control are also done by the workers.

The improvements organize the control configuration so a pilot can easily switch from a plane made in one of the production blocks to one made in another. Prior to Pacer-Loft I, changes made in the cockpit area were not matched to the configuration of earlier models.



Up to 17 F-16s at a time can be accommodated. Eighty-nine planes have been modified so far, and the program is scheduled for completion in August.

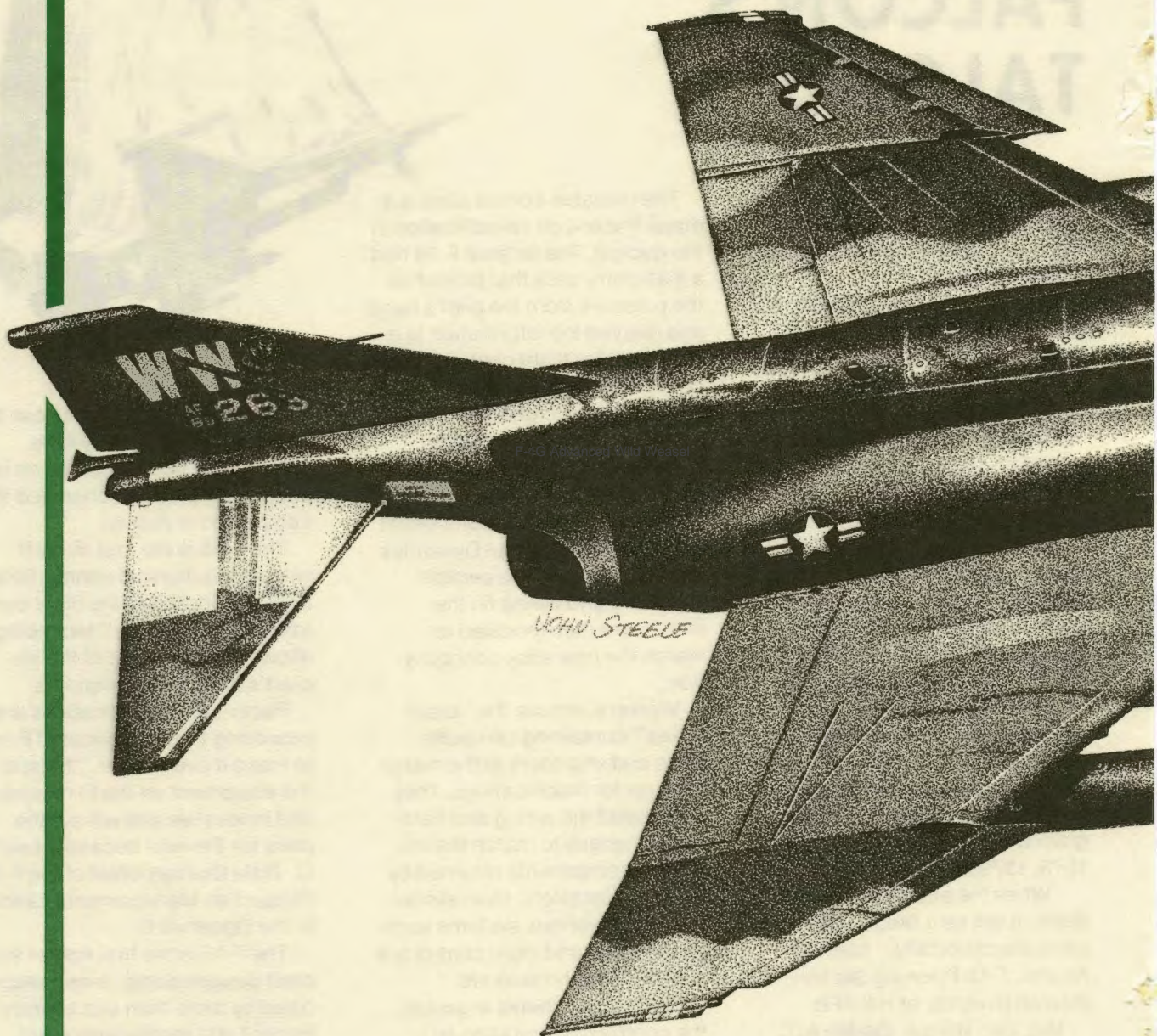
The F-16 is the first aircraft with no mechanical connections from the cockpit to the flight controls. Its "fly by wire" technology allows a pilot to control the aircraft's flight with computers.

Pacer-Loft I modifications are improving the sophisticated F-16 to make it even better. "Most of the equipment on the F-16 is new and innovative and will set the pace for the next decade," said O. Dale Quinlan, chief of the F-16 Production Management Branch at the Ogden ALC.

The F-16 is the first fighter aircraft designed and co-manufactured by more than one country. Pacer-Loft I modifications are also being incorporated on planes from the same production blocks in Belgium, Norway, Denmark, and The Netherlands. Those planes are being modified in European depots. (LOGNEWS)



# F-4G ADVANCED WILD WEASEL



JOHN STEELE







# HYDRAULIC LEAKS: Is the



**By TSgt Robert E. Ostenfeld  
127 TFWMAQ**

Just picture yourself as a crew chief on the flight line, helping an aircraft commander preflight for an early morning sortie. During the walkaround, the pilot notices hydraulic fluid leaking from a fitting. You are asked by the pilot, "Is the aircraft safe to fly?" You then respond, "Sure, I saw that leak during my preflight inspection, it's only a static leak."

But is the aircraft safe to fly? Can you prove without troubleshooting or referencing technical man-

uals that the leak is within limits? Can you effectively and positively determine the exact problem without applying full aircraft hydraulic operational pressure? The answer is no. No technical order will tell you that an aircraft is safe to fly with fluid leaking from a hydraulic fitting.

I do not mean that you cannot have hydraulic leaks in your systems. You can; but within the tech order hydraulic limits for specific components. These hydraulic components are individually identified in the T.O. giving the maximum leakage rates. You will find, however, that the maximum leakage rates given are for individual hydraulic components



# aircraft safe to fly ?

and not for general hydraulic nuts, plugs, bolts, or fittings.

For some unknown reason, some of us are under the impression that, in some cases, hydraulic leaks from nuts, plugs, bolts, and fittings are serviceable and within limits. This is not correct and is against technical order directives.

Crew chiefs, aircraft mechanics, and specialists have developed their own terminology and maintenance practices when repairing hydraulic fittings that are leaking. Some examples are—

“Rag wrenching” or “evidence removing”—an incorrect maintenance practice of wiping fittings

clean with a shop towel to remove any evidence of hydraulic fluid leaking.

“Smoking/Reefing”—an incorrect maintenance practice used to tighten “B” nuts that are leaking. This is usually done without a torque wrench and with pressure on the system.

“Allowable, minor, or static leakage”—incorrect terms to justify leakage from hydraulic fittings. Allowable, minor, or static terms are only applicable to specific hydraulic components listed in T.O.’s giving the maximum allowable leakage rates.

All of the terminologies mentioned as examples are against T.O. 1-1A-8 directives. In turn, they cause needless aborts, hydraulic system failures, and lost manhours. As maintenance managers, we must ensure that aircraft hydraulic systems are maintained correctly. Here are some tips that might help you.

Ensure that all suspected hydraulic fitting leaks are pressure checked. Correct discovered leaks in accordance with the particular aircraft’s technical order.

If a leak is discovered from a tube assembly when pressure is on the system, you should never torque, as this will tend to cut the flare without adding any appreciable torque to the fitting. This means tighten fittings without pressure applied and follow tech data to maintain proper torque.

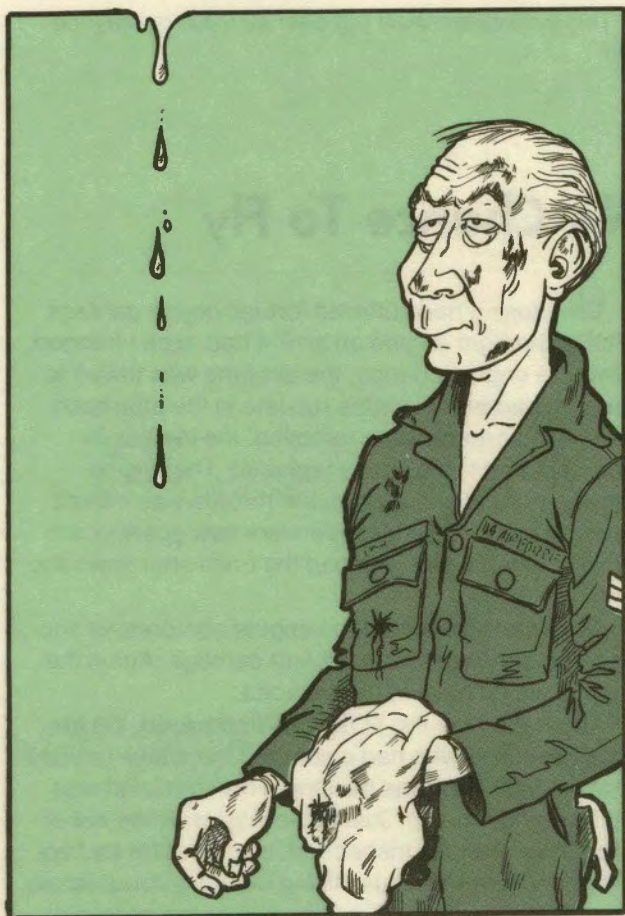
Be familiar with all hydraulic system component leakage limits.

Make sure all hydraulic components are within T.O. limits and allowable fluid leakage is monitored closely.

Look and keep track of the condition of the aircraft’s tubing and fittings. This will prevent future line and fitting leaks.

Do not just remove and replace damaged hydraulic fittings. They can be repaired in some cases. In addition, be familiar with tubing damage limitations in accordance with tech data.

When unsure or in doubt about aircraft hydraulic leaks, refer to your hydraulic tech order and the Structural Hardware Manual, T.O. 1-1A-8, Section 13.





# CHOCK TALK

Incidents and

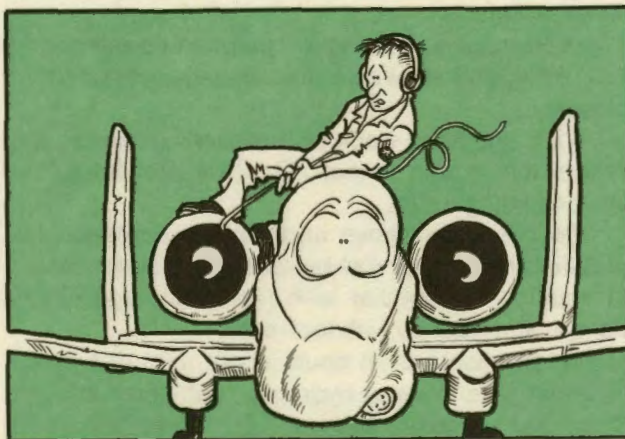
## INCIDENTS AND

### The Long And The Short of It

After going through a 200-hour phase inspection, an A-10 was towed to the engine trim pad and tied down. The left engine was trimmed first; then the right engine was started. After the right engine ran for a few minutes at military power, the ground crew could see that the engine needed to be trimmed.

The aircraft mechanic in the cockpit pulled the throttle back to idle. An engine mechanic brought a ladder over and put it in front of the right wing. He climbed up the ladder, stepped over the slat, hopped up on top of the fuselage, and walked to the rear of the aircraft between the engines, dragging his communications cord behind him. Both engines were at idle.

The engine mechanic began to adjust the T-5 amplifier on top of the right engine. Suddenly his communications cord was pulled from his earphones; the cord was sucked into the right engine, ripping the other end of the cord out of the ground communications receptacle.



The ground safety observer quickly signaled the aircraft mechanic in the cockpit to shut down both engines. The mechanic did shut them down, but it was too late. The comm cord knocked out nine sets of engine fan blades.

The whole incident could have been prevented by simply following the tech data. A remote trimming device should have been attached to the engine before it was run. The crew took what they thought was a short cut, and their supervisor let them violate the tech data.

This particular *short* cut cost \$27,000 in the *long* run.

### No Chance To Fly

Because it had suffered foreign object damage (FOD), the right engine on an F-4 had to be changed. After the engine change, the airplane was towed to the trim pad for an engine run late in the afternoon. Its intake screens were removed, the intakes inspected, and the screens replaced. The engine started normally; but when the throttle was moved forward out of idle, the supervisor saw sparks coming from the tailpipe. He had the crew shut down the engine.

A check showed that the engine compressor section had suffered foreign object damage. Again the engine would have to be replaced.

About the time the FOD was discovered, the engine specialist who had inspected the intake noticed that his flashlight was missing. This specialist was undergoing training. Just as he was crawling out of the intake after his inspection, an instructor had approached him to discuss filling out the aircraft forms. Distracted by the discussion, neither the specialist



# INCIDENTALS WITH A MAINTENANCE SLANT

nor the instructor properly checked the intake area before replacing the screen. Guess where the flashlight was.

We've got to finish one job before we get distracted by another. And as supervisors, we need to let our workers finish the job they're working on before we distract them. If we have to interrupt a job, we'd better make sure we start over in the checklist at a point well before the interruption.

Otherwise, we'll have more incidents like this. And it's awfully discouraging when we can't even get a sortie on an airplane between FOD incidents.

## F-4 Stuck Throttle

As he pulled off from a dive bomb pass, the F-4 pilot noticed that when he moved the left throttle, it had no effect on the left engine. The engine rpm stayed at 100 percent. The aircrew decided to divert to a nearby recovery base. On final approach, the pilot shut down the left engine by turning off the

engine master switch. Then he made a successful single-engine landing.

About a month earlier, the throttle control box was found to be worn. It was removed and replaced. During this work the main fuel control crossover shaft was installed wrong. The crossover shaft has a quarter-inch groove in it about 1/2 inch from the end. The crossover shaft fits into the throttle control torque shaft universal, and a quarter-inch bolt is supposed to go through the universal and seat in the groove in the crossover shaft. That bolt holds the two shafts together.

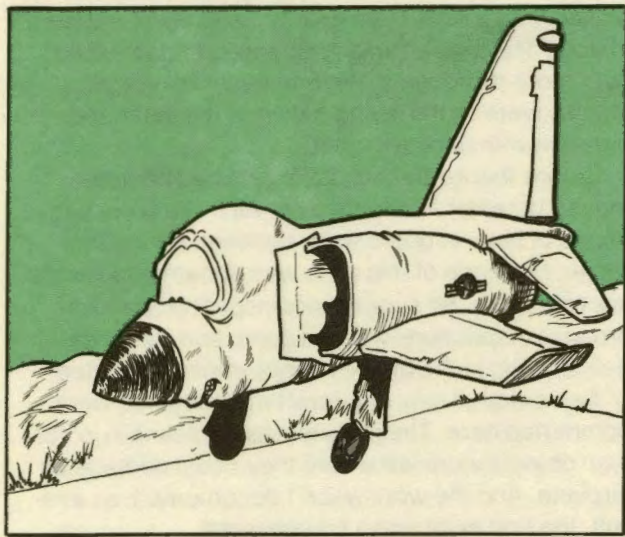
When an engine specialist installed this crossover shaft, he didn't push it far enough into the universal shaft. It stopped short of the bolt holes. The bolt then was inserted into the universal; and since it went all the way through, the specialist assumed the bolt was seated in the groove. After inserting the bolt, the specialist didn't check the integrity of the two shafts.

A supervisor inspected the work done by the specialist, but he also neglected to check the integrity of the shafts. The supervisor signed off the red-X in the forms.

The tightened bolt provided enough clamping force to hold the crossover shaft in the universal for 14 sorties before the shaft separated on this sortie. When the two shafts became disconnected, the throttle could no longer control the engine. That situation was foreseen in the tech order, which includes a caution to "assure the bolt engages undercut of crossover shaft after installation to prevent throttle from becoming disconnected."

Ironically, the same specialist who had neglected that caution happened to be sent TDY to the divert field to fix the airplane. He's the one who discovered and reported his own error in installing the bolt. That embarrassing experience probably drove the point home better than any lecture on tech order compliance could have.

The rest of us can get the lesson without the embarrassment—if we take it to heart.



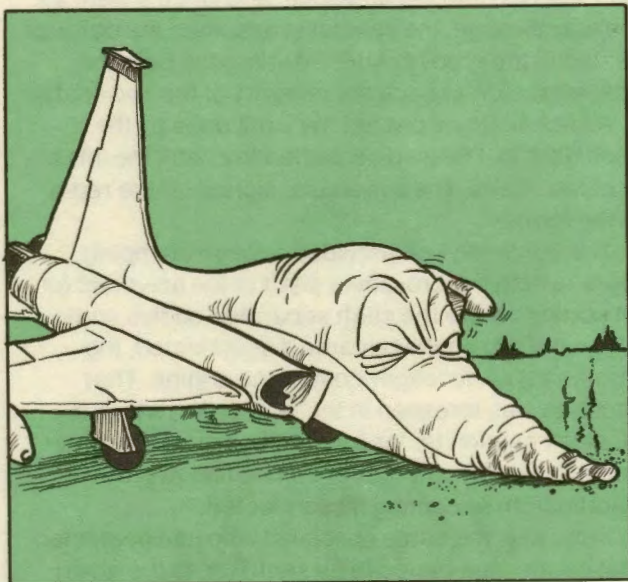


## **CHOCK TALK**

### **F-5 Landing Gear Collapses**

Before starting an F-5E, the pilot confirmed all switches normal with the gear handle down. He had three green lights indicating the gear was down, but the red light in the gear handle was on, and the landing gear warning horn was sounding. The landing gear alternate release handle was in the reset position. These are the same indications that a pilot normally sees before shutting down after the crew chief has opened the gear doors.

The pilot didn't have the crew chief check the position of the gear door switch, but he tried to signal to the crew chief about the red light in the handle. Thinking that the pilot was pointing to a missing bulb, the crew chief gave the pilot a thumbs-up. The pilot started the left engine. As soon as the utility hydraulic pressure built up, the nose gear retracted. The airplane's nose settled onto its pitot boom and



nose gear door. The pilot aborted the start and climbed out of the airplane.

The day before, the landing gear had twice failed to extend normally in flight. The handle had to be cycled to get the gear down. Maintenance troubleshooted the problem that night but could not duplicate

the malfunction. However, after this incident the gear system was again investigated. This time the investigators found that two microswitches in the gear handle control box were sticking in the up position. Two other microswitches were out of tolerance. Because of the bad microswitches, the control box was sending a gear-up command to the selector valve no matter what the position of the handle was.

Both the pilot and the crew chief did a poor job of preflighting. They both failed to check that the gear door switch was normal. The cockpit indications should have been understood as a warning that either the gear door switch was open or the gear was unsafe. They both missed the warning.

But besides those obvious errors that showed a lack of understanding of the system, we're still bothered by something else in this mishap. Why was it that the troubleshooters the night before couldn't find the bad microswitches? Must we wait until after a mishap to conduct a really thorough investigation?

### **Two Cardinal Sins**

During a 4-G pullout from a bombing run, the aircrew in an F-111 heard a loud bang. They checked the engine instruments; everything appeared normal. So they returned to base and made a normal landing.

Afterwards, foreign object damage was found in the right engine. Several first stage fan blades were nicked, and a rivet stem was stuck in the upper blow-in door. The aircraft was impounded and checked over more thoroughly. Several rivet stems and shanks were found laying between the inner and outer blow-in door segments.

Before this sortie the intake skin had been removed to repair a defective rib. All three outer segments of blow-in doors were removed during the repair. But none of this work was documented in the aircraft forms. So supervisory inspections and in-process inspections weren't done, and the loose rivets laying in the blow-in doors went undetected.

Two cardinal sins of aircraft maintenance were committed here. The job site wasn't cleaned up; foreign objects were left where they could damage an airplane. And the work wasn't documented; as a result, the first error wasn't discovered.



## CREW CHIEF SAFETY AWARD

**A1C JOHN WHORLEY** of the 1st Tactical Fighter Wing, Langley Air Force Base, Virginia, is this month's winner of the Crew Chief Safety Award. He is an EC-135 crew chief with the 1st Aircraft Maintenance Unit, 1st Equipment Maintenance Squadron.

During a preflight inspection of an EC-135, Airman Whorley found an aft body fuel sump drain that was leaking. He tried several times to reseal the drain but couldn't because something was clogging it. He removed the old drain and found some tiny coal-like granules. Airman Whorley then had the fuel tested; the granules turned out to be charcoal. The aircraft was grounded and further investigation revealed a large foreign object in the tank.

Airman Whorley's attention to detail and concern for safety averted the loss of this EC-135 and prevented contamination of other aircraft scheduled to be refueled. He has earned the Tactical Air Command Crew Chief Safety Award.



**A1C John Whorley**

## INDIVIDUAL SAFETY AWARD

**MSGT JUAN M. MESA**, squadron safety NCOIC with the 354th Equipment Maintenance Squadron, 354th Tactical Fighter Wing, Myrtle Beach Air Force Base, South Carolina, is this month's winner of the Tactical Air Command Individual Safety Award.

Sergeant Mesa noticed a fire in the carport of a family housing unit. He ran to the house to warn the occupants of the fire, and at the same time he told someone to notify the fire department. When everyone was out of the house, Sergeant Mesa started to fight the fire. Using a garden hose, he fought the fire until the heat became too intense. But his efforts contained the fire to the carport area until the fire department arrived.

Sergeant Mesa's actions reduced the severity of the fire and prevented personal injury to the occupants. He has earned the Individual Safety Award.

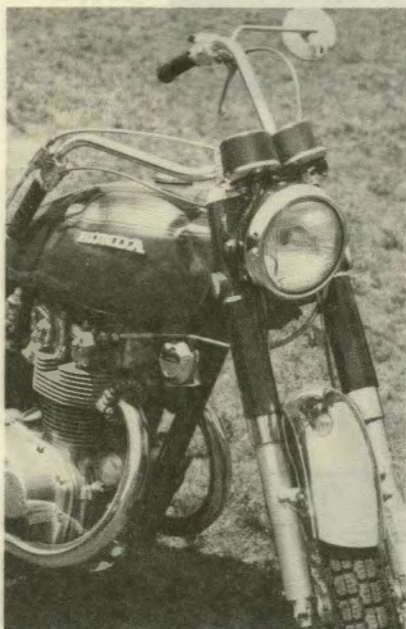


**MSgt Juan M. Mesa**





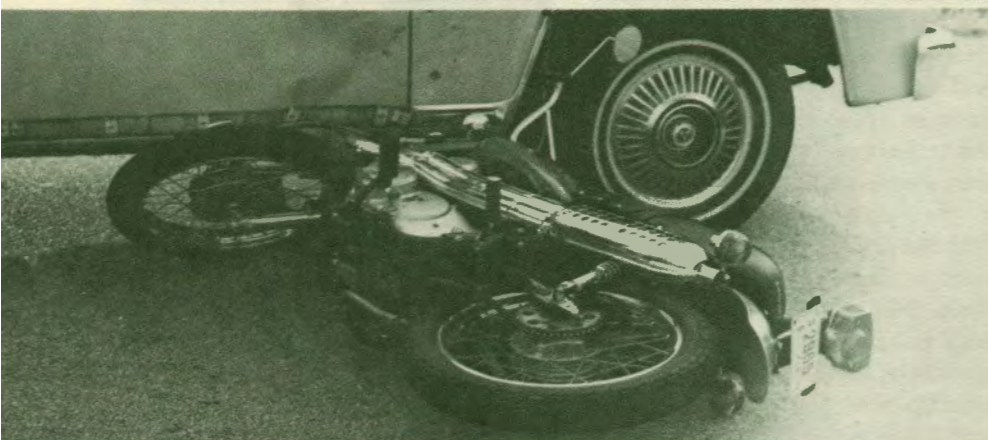
# THE MOTORCYCLIST'S



We bikers are sometimes our own worst enemies! After all the numbers were counted at the end of last year, we learned that 84 percent of all Air Force personnel killed in cycle mishaps died because they made an operator error!

Although stats can sometimes be deceptive or misinterpreted, that statistic should make us all stop and think. Why did 49 bikers make driving errors that cost them their lives? Death is a high price to pay for one error on the road. The reasons can also be found in those year-end stats. Bear with me a minute and check out these numbers: 49 percent of those killed were under the influence of alcohol; 59 percent of the fatal crashes were the result of excessive speeds; 49 percent failed to negotiate a turn.

Now I know that we love to blame all of our problems on the road on the car drivers, but those





# WORST ENEMY

By TSgt Donald G. Stormoen  
388 TFW Ground Safety

numbers say that isn't necessarily the case. Again we ask why? Why did that Air Force motorcycle rider drink, speed, and then fail to make that turn? The answer, or at least part of the answer, could be in education—or lack thereof. Because, you see, only nine percent of those dead riders had attended a formal, hands-on cycle safety course like the Motorcycle Safety Foundation (MSF) Better Biking Program. This program teaches even experienced riders how to react properly in an emergency situation. Reacting properly is the key to surviving. Dr. Harry Hurt, himself a biker, studied over 900 bike mishaps and found that in over 75 percent of them, the biker made the wrong move or no move at all to avoid the mishap. In view of these stats, we are going to have to start rethinking our attitudes on riding if we are to survive.

Another part of the answer could be harder to get at. How many of us can truthfully say that we know—

- how fast we can really stop that muscle-bike of ours;
- how to use out-tracking to avoid a road hazard;
- what happens to the attitude of the bike when we grab a handful of brake after coming into a corner too hot;
- what lane position is right in all situations?

How many of us use the following?

- The two-second following distance rule (or do some of us think that we can out brake that car driver, so we tail gate?)
- A head check before passing or making lane changes
- The lane split when traffic is heavy

How many of us would be dumb enough to lend our bikes to a buddy not knowing how well he or she can ride? (Six of last year's fatalities were on borrowed bikes.) And if you can believe it, 14 of those killed were riding without helmets!

Without trying to sound like a know-it-all, I think I may have another answer to those whys. It is our ego that gets us bikers into most of our troubles. I can remember that my first ride on my first bike took all of 2.5 seconds! At the age of 16 my ego would not allow me to admit I did not know how to ride. So I popped the clutch, twisted my right wrist while the front wheel clawed the air, and the bike bounced off from the garage wall as I watched from the prone position. Real dumb—right? You bet it was dumb. But it is the same kind of ego that allows a biker to get drunk, borrow a "friend's" bike, and take off.

I may have sounded pretty negative about our chances on the road, and I may have stepped on a few attitudes, but my only concern is for us, the bikers. Let's swallow some of that pride, admit

that we may not know it all, and get some more training. After all, we are in a constant training mode to learn our jobs, so why not apply that same concept to something as complex as riding that new high-tech motorcycle? (By the way, 80 percent of the fatal crashes involved bikes over 500 cc.)

So let's clean up our own act before we throw stones. Sign up for that Better Biking program or MOST II course at your base. If there isn't one in your area, write to the Motorcycle Safety Foundation, Chadds Ford West, P.O. Box 279, Chadds Ford, PA, 19317, or call toll-free 800-441-7676. Or better yet, offer your commander or safety office your assistance and become involved, become an MSF Instructor.

If you are ever in the area, stop in, and we'll talk scoots; or call me at AUTOVON 458-3402. ➤

**Editor's Note:** A couple of other statistics have gotten our attention, too. Nearly half of the operators involved had less than six months experience on their bikes. Eighty-four percent were under 25 years of age. And 96 percent of the Air Force operators in fatal motorcycle accidents last year had not attended a certified, hands-on motorcycle skills training program. Those numbers are trying to tell us something—are we listening?



# WEAPONS WORDS

## Arming Out of Sequence

An F-15 loaded with AIM-7F missiles needed some maintenance work with electrical power on. So all the missiles were safed and umbilicals disconnected. After the maintenance job was completed, a weapons load crew was tasked to reconnect the umbilicals and rearm the missiles. The job was a little different than the normal missile loading routine, but the load crew chief didn't take the time to brief his crew on how to coordinate their tasks. Instead he simply told the number 2 man to connect the umbilicals and the number 3 man to arm the missiles.

The number 2 man was slightly delayed. By the time he got to the airplane, the number 3 man had already armed three of the AIM-7s. So the number 2 man started to work on one of the armed missiles. Since the missile was armed, the release/lock mechanism was not protected by a safety pin. The load crew chief saw that the number 2 man was working on an armed missile; he warned him of the danger but didn't stop the operation. When the number 2 man tried to extend the umbilical, he actually inserted his ratchet into the release/lock mechanism by mistake. He rotated the ratchet, and the missile crashed to the ground.



The drive socket for the release/lock mechanism looks like and is located near the umbilical extension/retraction drive. It can be easily misidentified. However, if the safety pin were installed, the mechanism could not have been actuated. That's why the sequence of steps in the tech order is to first connect the umbilicals, then arm the missiles.

Even though the situation was a little out of the ordinary in this case, the load crew chief could have ensured that the correct sequence was used by simply telling the number 3 man to wait until the umbilicals were connected before arming the missiles. At the very least, he should have stopped the operation and started over when he saw the number 2 man working on an armed missile.

## F-16 Gun Jam

An F-16 on a dart mission fired 90 rounds from its nose gun on the first pass. Everything seemed normal. The pilot set up for a second pass; this time when he pulled the trigger, he heard a loud pop. He immediately let go of the trigger and safed the gun. Return to base was uneventful.

When the gun was installed, the weapons crew had not adjusted the conveyor elements in the gun system chutes correctly. So the elements jumped the track and became jammed in chute A. As the gun system rotated rapidly during firing, chute A was torn apart, and the bracket support was pulled away from the access unit. That stopped the gun's rotation. The pop the pilot heard was probably the chute coming apart.

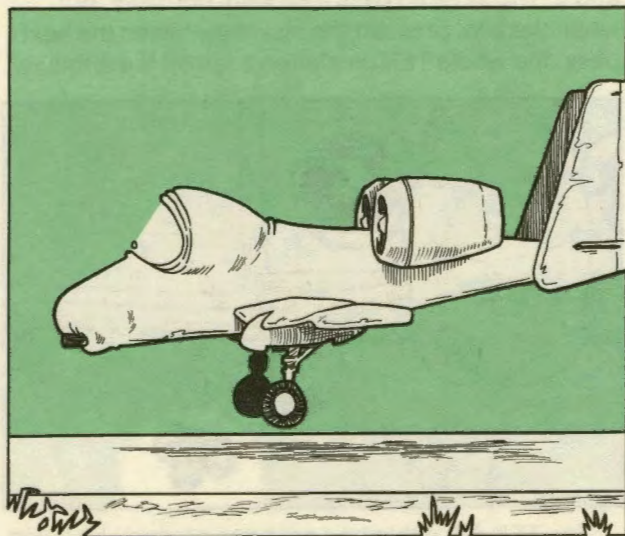
Better training can help prevent errors of this kind. But this unit also recommended more in-process inspections by load crew supervisors during the installation of a gun system. That should help make sure that the training has taken hold.





## Gun Gas Residue Overheats Engine

An A-10 on a surface-attack training mission was on its third hot strafe pass when the Right Engine Hot light and the Master Caution light both lit up. The pilot immediately started to climb. Seeing that the engine temperature was 1,100 degrees Celsius, he pulled the throttle to idle. At idle the temperature dropped to 1,000 degrees, and the rpm fell to 56 percent. The low rpm triggered the automatic start cycle for the right engine, so the pilot shut down the right engine. He landed at a nearby emergency field.



Borescope inspection of the engine later showed no damage but did reveal a large accumulation of gun gas residue on the compressor blades.

The tech data requires water washing the engines after every 2,800 rounds fired through the gun. Local instructions in this unit called for doing the water wash and the 3,000-round gun lubrication inspection at the same time, whether scheduled, unscheduled,

or during phase inspection. Maintenance operating instructions also created procedures for using MMICS to insure that the engine washes and gun inspections were done when they were due.

This particular engine had been recently overhauled. It had only flown 63 hours since it was installed on the airplane. But weapons flight's munitions records showed that the gun had fired 6,700 rounds from the time the engine was installed until the time of the overtemp. Although the gun had fired more than twice the 3,000-round limit, the engines had not been washed.

A closer look showed that the records of round expenditures in MMICS was not up to date for most of the aircraft in this unit. So most of the water washes were being done during phase inspections, or else they were scheduled by flight hour accumulation. The system wasn't working because weapons, scheduling, and documentation workers weren't complying with the written procedures. And the unit supervisors weren't ensuring compliance.

We know we have a problem with ingestion of gun gas in the A-10 engine. Residue buildup reduces the stall margin of the engine, leading to compressor stalls and flameouts. Water washing the engines is the only way to prevent that.

Cleanliness may not be next to godliness, but in the A-10 engine it comes right after fire, fuel, and air. Even with MMICS, it's up to us to make sure that the information on rounds fired gets to the people who keep the engines clean. In other words, we have to communicate with each other to get the job done.

## Crossed Wires Blow Tank

Configured with a centerline tank, a TER, and a SUU-20, an F-16 flew a surface-attack mission. With the SUU-20 selected on the first radar laydown pass,



## WEAPONS WORDS

the pilot pressed the pickle button prior to the release cue. The centerline tank immediately fell off the airplane. It hit in some mud flats on the gunnery range. The airplane returned to base with no damage.



When the weapons release system was tested on the ground, troubleshooters discovered a firing voltage on the aft breech of the centerline pylon MAU-12 whenever one of the other stations was selected, Master Arm was set to Arm, and the pickle button was pressed. With the pylon removed, the aircraft system checked out fine.

The pylon was taken to the shop and tested on the 75500 weapons tester; it failed. The wires to two pins at the fuselage-pylon disconnect were reversed. These reversed wires allowed the current to flow to the aft breech, bypassing the normal routing, as soon as power was available—that is, when any station was selected, Master Arm was armed, and the pickle button was pressed.

Several months earlier, the pylon had been modified to comply with a TCTO replacing pylon release relays. At that time, the fuselage-pylon disconnect was found to be bad and was replaced. After the work was done, the pylon was assigned to in-use status. Apparently it was not checked on the 75500 tester. When the pylon was loaded on the airplane, it passed the functional check and the jettison check because the tester showed voltage present only when the switches were set.

The only chance of catching the error would have been in the shop—if the tester had been used. But the work in the shop was done by several different shifts. The shift that finished the work didn't think of testing the work that had gone before. So the tester didn't get the chance to help pay for itself.

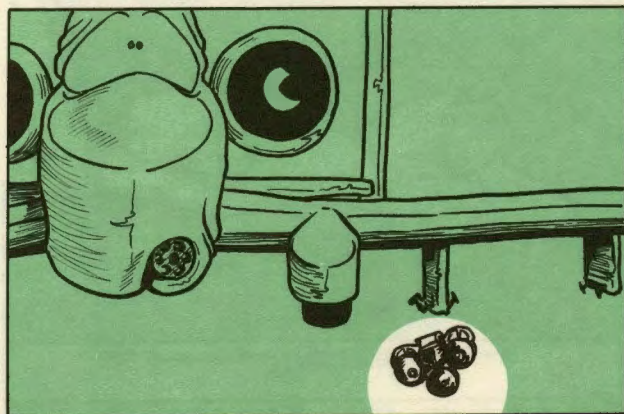
## The Burst Is Real

On a local exercise, the exercise evaluation team (EET) was simulating terrorist infiltration. The scenario called for setting off a ground burst simulator near the security police law enforcement building. An EET member pulled the arming lanyard on an M115A2 ground burst simulator and dropped it on sloped concrete about 20 feet in front of the law enforcement building. The simulator rolled downhill on the smooth concrete until it was right next to the building. Then it went off and blew four windows out. No one was hurt.

Incident after incident shows us that there's a lot of burst in those ground burst simulators. Using one requires forethought on what the effects of the burst might be.

## Another A-10 Loses a TER

An A-10 was on a weapons delivery mission with 12 BDU-33 practice bombs. The bombs were loaded on four TER-9/As on stations 3, 4, 8, and 9. Selecting stations 4 and 8 first, the pilot flew six passes and released all the bombs on those stations. Then he switched off stations 4 and 8 and selected stations 3 and 9. The seventh pass also went normally. But when the pilot pressed the pickle button on the next pass, the whole TER on station 3 fell off the airplane.



The TER-9/A cable had not been properly installed to the cable attachment on the station 3 pylon. When the pilot hit the pickle button, the current was misdirected, causing the weapons release system to sense a single store and release the TER.

Nothing new here. Load crews failing to correctly install cannon plugs have cost us other TERs off of A-10s. It simply is a matter of not paying attention to detail—a bad sign if you're working with weapons.



## LETTERS

Dear Editor

Your "Reminders to Motorcyclists" (April 83 "Short Shots") was full of real good information. However, in skid control, to follow the instruction to steer in the direction of the skid would result in a serious spill. A motorcycle is a gyroscopic device; when the rear skids out of the plane of travel, it will tend to return if the front wheel is maintained in the plane of travel. If an attempt is made to turn in the direction of skid, both wheels will be out of their gyro plane and enter into gimbal lock by the momentum of the mass in motion.

Bikers, hold the front wheel in the direction you were traveling when the rear wheel lost traction and reduce speed by easing off on the throttle; the rear wheel will follow the front wheel into its proper path of travel. The key is that the steering head is a single-point hinge, and you are the control to maintain one-half of that hinge in proper alignment.

Keep up the good work. Your tips on motorcycles sure get my attention.

WILLIAM E. SHUMAKER  
MSF Instructor #5473  
Tyndall AFB, FL

Dear Mr. Shumaker

*What you say makes sense. But so does the original article, if it's correctly applied. For instance, the Motorcycle Safety Foundation's Motorcycle Rider Course tells cyclists to "steer slightly in the direction of the skid. A rear wheel skid can be overcome by turning slightly in the direction of the skid."*

*The difference between that and what you say is more apparent than real. If the bike's rear skids out, say to the right, and you turn the handlebars to stay pointed in the direction you were traveling, you will be turning slightly to the right, in the direction of the skid. Turning further right, however, could result in a loss of control. So your suggestion to just keep the front wheel pointed in the desired direction of travel is better; it prevents overcorrecting.*

*The confusion here is similar to the confusion about steering a car in the direction of skid. That's why we*



*now say to point the nose of the car the way you want to go. It's easier to understand and apply, even though both statements really say the same thing.*

*Thanks for pointing out the problem to us.*  
ED

Dear Editor

I feel I must disagree with a statement made by Major Mike Lichty in the April 83 article "Views from Flight Safety." He stated on page 5 that an F-4 WSO should have intentionally refused to comply with the pilot's decision concerning the position of the command selector valve (CSV) during an in-flight emergency. He maintained that "the WSO, in exercising sound judgment, should have advised the pilot he was complying with the checklist and opened the CSV."

I now quote from the subject block of ALSAFECOM 002/1983, titled "Who's in Charge Here?"

1. Some recent incidents affecting flight safety prompt an old story that needs retelling. It involves the question of command in multiplace aircraft.
2. AFRs 60-1 and 60-16 lay it out clearly. The pilot in command is designated on orders. He/she is responsible for the safety of the aircraft and its occupants. This responsibility cannot be abrogated nor can it be usurped by any other crew-member, regardless of rank or aeronautical rating. Failure on either side of this equation could lead to disastrous consequences.
3. This message should fall on two sets of ears. First, for those in command of the aircraft, be sure all know it. Speak up—Don't be timid. It is your responsibility. For those not, and senior to the pilot in command—respect his authority and equally important, his responsibility. The cockpit is no place to pull rank.

I also disagree with the pilot's decision to overrule the checklist. His judgment should be questioned, but not overruled in the air. In-flight emergencies are no



# LETTERS

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place for committee meetings. Someone must have the final say. That person must be the aircraft commander. How can someone in TAC Flight Safety tell us to overrule his decision by our good judgment? It looks like a clarification is in order.

Sincerely,  
FRANK SCOGGINS, Major, KSANG  
127 TFS, McConnell AFB, KS

*Dear Major Scoggins*

*Your concern is well founded. But I think we need to distinguish between the authority of the aircraft commander (or any superior, for that matter) and the lawfulness of a particular order. None of us has absolute authority, we are all governed by law. In our opinion, the aircraft commander was not complying with his written directions, so his order was not lawful. The WSO isn't being asked to merely use his judgment to overrule the aircraft commander; he is being asked to follow written directives.*

*Of course, judgment is still involved. Those same directives give the aircraft commander latitude in unusual circumstances that may require exceptions to the checklist. In our reading of the situation, those unusual circumstances didn't exist. This particular incident was exactly what the checklist procedure was designed for.*

*The authority of the person giving the order is not at question. We all agree that the aircraft commander is in charge: he has full authority to carry out the directives of those over him, and he has authority to choose different techniques in many areas that are not governed by directive. However, no one has the authority to disregard directives.*

*Finally, ALSAFECOM 002/1983 was addressing a completely different problem—rank versus authority. Let's not confuse the issue of rank versus authority with the issue of compliance with sound procedures.*  
ED

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Dear Editor

Reference is made to your article in *TAC Attack* magazine, dated February 1983, titled "Ball point Pen Cheats Seat." From reading your article, we conclude that the personnel involved were not familiar with the system or the data provided for proper use of the equipment.

The use of HBU-2 Lap Belts requires the installation

of a "Gold Key" to properly secure the lap belt when being used for flight. The "Gold Key" is attached to the zero-delay lanyard which in turn is attached to the personnel parachute. When there is no occupant and the ejection seat is empty, a washer (part number AN960C916) attached to the ejection seat's oxygen hose is to be used to latch the belt for solo flight. Instructions on the proper installation and use of the washer are contained in TO 1A-37B-2-2. If someone deviated from the procedures outlined in TO 1A-37B-2-2, figure 4-17A, evidently they did not use data provided. Your article in *TAC Attack* on how a ball point pen was used in place of the washer (recommended procedure) implies that this approach of using a ball point pen is widely used. We hope that in fact, it is an isolated case. In all fairness to the technicians in the field, the article places them in unfavorable light because the majority do follow the existing technical instructions.

To say that a new procedure was developed due to a nonexistent procedure is inaccurate. Attached for your review is a copy of the recommended procedures which is extracted from TO 1A-37B-2-2, figure 4-17A.

When an unsatisfactory condition is noted, an MDR must be submitted (CAT I or CAT II) in accordance with TO 00-35D-54. These reports are forwarded to the prime ALC (for equipment affected) for evaluation of deficiency and analysis of specific items (exhibit) which failed. An MDR was never received by us (the prime ALC for HBU-2 Lap Belts) for evaluation of the deficiency as identified in the *TAC Attack* article. Without complying with TO 00-35D-54 for reporting deficiencies, user organizations cannot and should not expect the prime ALC to resolve deficiencies identified.

J. A. Noel, Deputy Chief  
Item Management Division  
Director of Materiel Management

*Dear Mr. Noel*

*In all fairness to the technicians in the field, we should point out that the tech data you refer to is dated after the incident we wrote about. At the time, there were no written procedures covering the problem in the A-37, although the T-37 has had procedures for years.*

*You are right about the MDR; the unit should have submitted one to ensure the materiel problem was identified. The unit did, however, submit a high-accident-potential (HAP) report; and your office was an addressee.*

ED



# TAC TALLY



CLASS A MISHAPS
AIRCREW FATALITIES
TOTAL EJECTIONS
SUCCESSFUL EJECTIONS

TAC		
MAY	THRU MAY	
	1983	1982
3	12	17
0	4	9
4	8	15
4	7	13

ANG		
MAY	THRU MAY	
	1983	1982
0	4	4
0	3	2
0	4	4
0	1	3

AFR		
MAY	THRU MAY	
	1983	1982
0	0	0
0	0	0
0	0	0
0	0	0

## TAC'S TOP 5 thru MAY '83



TAC FTR/RECCE	
class A mishap-free months	
42	355 TTW
30	354 TFW
25	67 TRW
25	363 TFW
21	58 TTW

TAC AIR DEFENSE	
class A mishap-free months	
124	57 FIS
77	5 FIS
74	48 FIS
33	318 FIS
24	87 FIS

TAC-GAINED FTR/RECCE	
class A mishap-free months	
133	188 TFG (ANG)
125	138 TFG (ANG)
124	917 TFG (AFR)
121	116 TFW (ANG)
111	434 TFW (AFR)

TAC-GAINED AIR DEFENSE	
class A mishap-free months	
111	102 FIW
107	177 FIG
73	125 FIG
56	119 FIG & 142 FIG
43	120 FIG

TAC/GAINED Other Units	
class A mishap-free months	
166	182 TASG (ANG)
150	110 TASG (ANG)
146	USAF TAWC
138	84 FITS
134	105 TASG (ANG)

## CLASS A MISHAP COMPARISON RATE

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

TAC	1983	6.9	5.3	3.4	3.8	4.0							
	1982	7.8	5.7	5.9	5.2	5.9							
ANG	1983	9.1	7.0	4.4	4.3	3.4							
	1982	0.0	2.7	3.2	3.4	3.6							
AFR	1983	0.0	0.0	0.0	0.0	0.0							
	1982	0.0	0.0	0.0	0.0	0.0							

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



