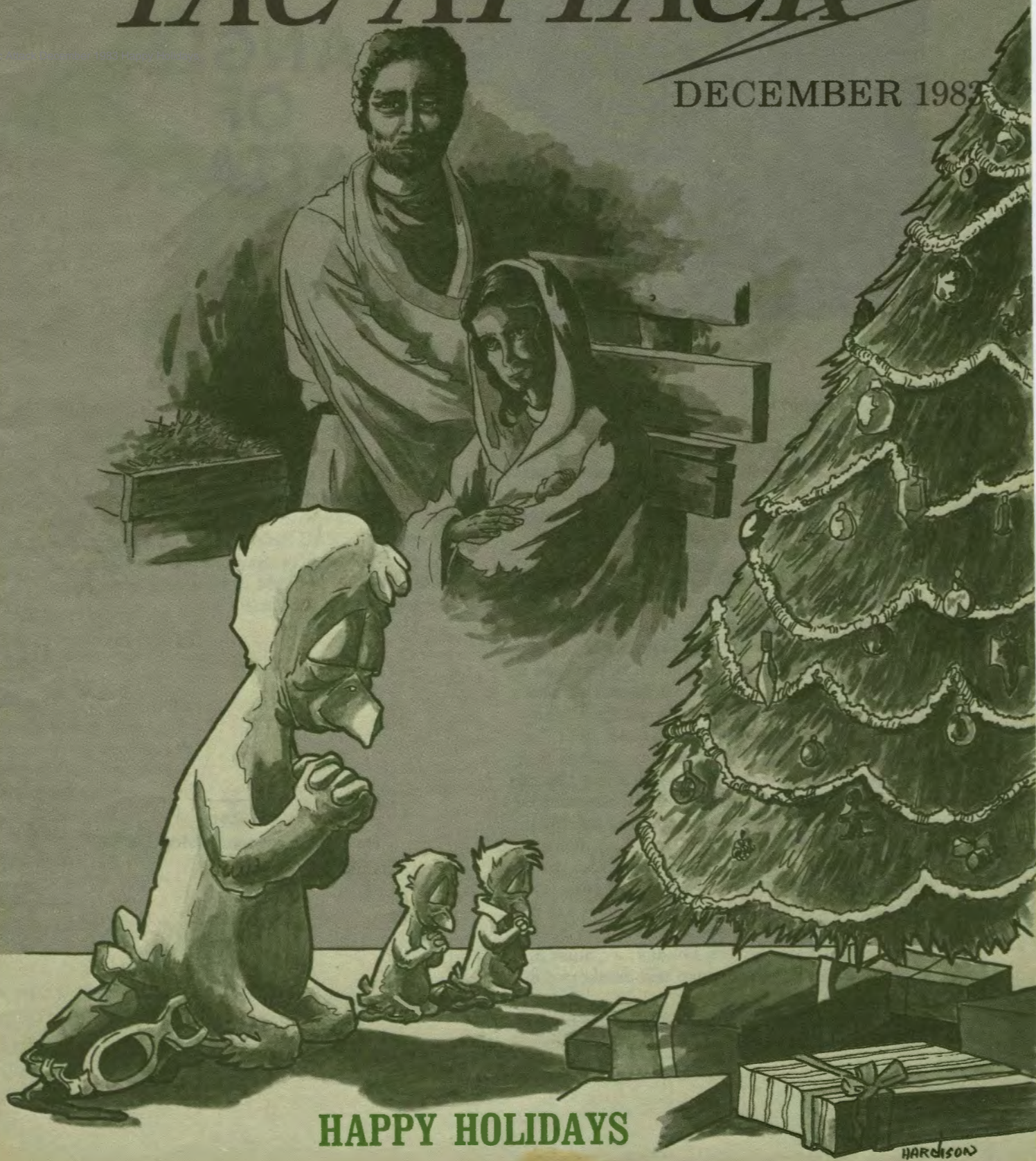


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TAC ATTACK

Special December 1983 Happy Holidays

DECEMBER 1983



HAPPY HOLIDAYS

HARRISON



ANGLE OF ATTACK

Please accept this month's cover as the Christmas card from all of us at TAC Safety to you, the men and women of the Tactical Air Command. It has been our true pleasure to serve you this year, and we are looking forward to renewing our commitment to help you accomplish the mission of TAC more effectively and more safely.

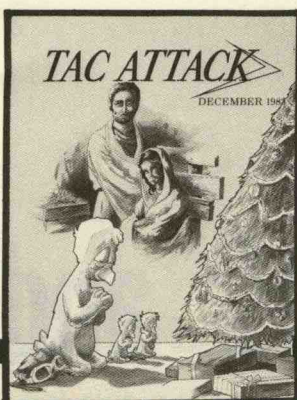
As we reflect on 1983, we see that our aircraft mishap rate is lower than at this time in 1982. Unfortunately, our industrial mishap rate and military fatalities are above last year. Further, our look at 1982 shows an upturn in mishaps at the end of the year. We are confident that this trend is reversible and that we can finish this year with a better safety record than 1982. The reversal is possible if each of us recognizes that we, personally, are responsible for doing the mission right and for doing it safely. Remembering that the race isn't won until crossing the finish line, we must be vigilant on the job, at home, and on vacation. And our vigilance must also include concern for co-workers, friends, and family. On the job, we must insure that tech orders are used, flight briefings are adequate, and supervisors are involved. At home and on holiday, we must insure that seat belts are worn and drinkers don't drive.

We are confident that our efforts at being safe will produce the rewards of a successful year,

safe holiday, and the blessings that only come from doing an important job with excellence.

Our collective Christmas wish is that as each of you complete this year and look to 1984, you will be able to reflect with pride on your accomplishments and with hope to your future. Please join with the TAC Safety staff and Fleagle, Rob, and Griff as we give thanks for the blessings of 1983 and pray for 1984 to be a year of peace on earth to men of good will.

Harold E. Watson, Colonel USAF
Chief of Safety



On the cover:
Peace on earth, we pray.

DECEMBER 1983

DEPARTMENT OF THE AIR FORCE

HON VERNE ORR
SECRETARY OF THE
AIR FORCE

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COMMANDER



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TACRP 127-1

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

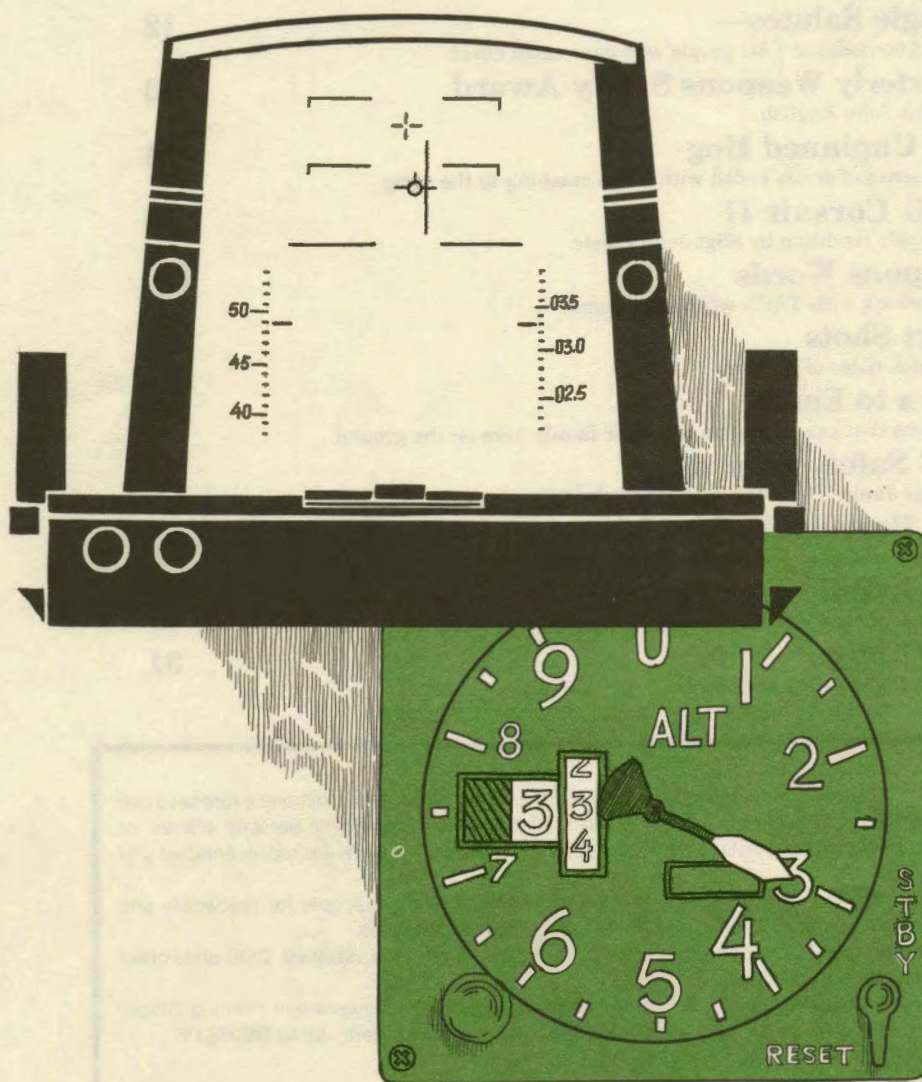
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The cosmic HUD and



Not since sliced bread has such a nifty invention come along as the Heads-Up Display, or HUD. It has helped aviators in almost every phase of flight—with weapons employment, both air-to-air and air-to-ground probably leading the list.

However, several unexplained tragedies have occurred, which led to a HUD/Instruments conference at HQ TAC in June 1983. The most recent incidents involved several F-16 crashes where the pilot was unable to cope with the situation.

Toward the end of last year, during a night rejoin on the range, a pilot flew in IMC/VMC conditions, had some malfunction lights come on in the cockpit, became disoriented, and crashed. There was no attempt to eject.

A week after that mishap, a similar situation occurred in the daytime. This pilot had a problem and started to RTB. He went into the clouds and crashed. He selected afterburner just before impact but for some reason failed to orient himself on the gauges since he

instrument flying

By Maj Bill Powley
HQ PACAF Flight Safety

was deemed to be doing a "climb to cope" maneuver but heading 65-80 degrees nose low. There was no attempt to eject.

One of the pilots was a new student, the other an old head. What actually happened may never be known, but we do know they were spatially disoriented for some reason.

An excellent possibility may have been the use (or misuse) of the HUD. Depending upon where you are coming from (previous round-dial only aircraft such as the F-4 or right into HUD aircraft out of UPT) your technique and reliance on the HUD may be somewhat different.

As a general rule of thumb, in instrument conditions the HUD should be used as one of many instruments in your crosscheck. The rewritten F-16 instrument phase manual and, hopefully, other HUD-equipped aircraft instrument phase manuals specify in warning notes that the HUD will not, repeat *not*, be used as a reference during recovery from unusual attitudes or during transition to lost wingman unless

no other attitude instruments are available.

While there are many advantages to using the HUD, there are also significant limitations that need to be considered:

- The flight path marker (FPM) can be misinterpreted if you think of it as an attitude indication. Without proper cross-check the FPM could be on the minus 2 ½ degree pitch line and the ADI indicate 10 degrees nose high.
- The HUD can be disorienting.

Looking through it while going in and out of clouds tends to promote vertigo. The movement of the HUD symbology in turbulence causes vertigo. Situational interpretation can be difficult in the HUD since it only shows a small piece of the world. Whenever there is any question on interpretation, go heads down. The ADI and HSI give the big picture.

- If the HUD intensity is too bright, it can cause you to fixate on the HUD data instead of seeing



THE COSMIC HUD AND INSTRUMENT FLYING

through it to the real world.

- Your attention can become channelized on the HUD. It is a compelling display that almost demands your attention. Everything you ever wanted to know is somewhere in that small field of view. Therefore, your crosscheck is focused in a narrow area and can very quickly become limited to nonexistent. This leads to another warning note that channelized attention/fixation on HUD symbology can lead to lack of situation awareness and disorientation during critical phases of flight.
- During recovery from unusual attitudes or lost wingman, the HUD does not provide a complete picture of aircraft attitude when the pilot needs information rapidly. Bank angle and pitch attitude are easily misinterpreted. Therefore, a warning note states that the HUD will not be used except as a last resort during these maneuvers.

In addition to limitations in use of the HUD, there are de-

sign limitations:

- There are no caution or warning indications for failure of the HUD. A power failure shows up only on the ADI with the OFF and Aux flags. Therefore, a crosscheck should always be maintained with the heads-down instruments.
- The FPM can be in error and is not a complete control instrument.
- The tachometer must be used for power control.
- At high drift angles, an "X" appears on the FPM and it will not correctly indicate the aircraft vector.
- Head movement is required to see all of the HUD symbology.

Then what's so great about the HUD when flying instruments? Everything, when used as intended to make it easier to transition from instrument to visual conditions. The HUD aids visual lookout, reduces (does not eliminate) the necessity for inside the cockpit scanning, and eases the transition to visual references during landing approaches in minimum-ceiling instrument conditions. It is a great asset in instrument flying as long as a

basic rule is followed: *Never* rely solely on one instrument.

Each of us assimilates data a little differently from the rest. Having started with round dials in the F-4 and then transitioned to the HUD in the A-7 and F-16, I have found that I assimilate pitch and heading easier from the HUD and altitude and airspeed from the round dials. When I take a quick glance at the altimeter and see the pointer at 6 o'clock or the airspeed indicator and see the needle at 4 o'clock, I just know where I am—I don't even have to read the numbers.

For someone else, this may not work at all. But what must work is that you find a combination of interpretation from HUD and round dials that is instantly meaningful to you and that you work all the performance and control instruments into a viable crosscheck to prevent channelization on the HUD, or any single instrument, alone.

Instrument flying has been cut back severely at all stages of training—from UPT, through LIT, to RTU. This shows up repeatedly in mishap reports as experience levels are analyzed by the boards. Supervisors must be aware of this and get their guys into the back of two-holders (phewy—wash my mouth out) when available for instrument practice. The new guys don't have the hours of background experience to rely on any more.

I know this is an ignominious chore for a fighter jock, but to put the bomb on the target and crash during the pull-off or on short final in the weather really ruins the image also. ➤

AIRCREW OF DISTINCTION

In the early morning hours of 5 September 1983, MAJ JON R. ALEXANDER, aircraft commander, and MAJ DANIEL J. SILVIS III, weapon systems officer, were flying an F-4E on a transatlantic deployment. While flying on a KC-135 tanker's wing at 26,500 feet, Major Alexander noticed a loss of thrust. A check of the engine gages showed that the afterburner nozzle on the right engine had failed open. His wingman confirmed that the nozzle was open and also that there appeared to be oil on the bottom of the aircraft.

Major Alexander turned and headed direct to the nearest field—Gander, Newfoundland, 520 nautical miles away. After he and his wingman turned away from the rest of the formation, his right engine oil pressure began to fluctuate. He asked for tanker escort, and a KC-135 turned to follow him. Suspecting that the right engine's oil system was failing, Major Alexander set the right engine rpm at 90 percent. About five minutes later, the right oil pressure fell below 15 psi. He brought the right engine to idle, and he momentarily selected afterburner on the left engine to make sure it was available.

When the right engine oil pressure dropped below minimum, Major Alexander shut the engine down. The engine then seized. With a heavy fuel load and a seized engine, the F-4 could not maintain level flight at military power on the left engine. So Major Alexander descended at 250 knots, planning to level at the highest altitude where he could hold level flight.

During the descent the right power control system failed because of the lack of windmill hydraulics on the right engine. For an unrelated reason the inertial navigation system failed at the same time. At 11,000 feet the centerline fuel tank went dry, and Major Alexander jettisoned it. At 8,000 feet his wingman got radar contact with the tanker and vectored it to a position 1 1/2 miles in front of the flight. At 6,000 feet, still unable to hold level flight, Major Alexander jettisoned his external wing tanks.

Major Alexander and Major Silvis had the tanker in sight, but they couldn't close on it. Major Alexander told his wingman to go ahead and take on enough fuel to make it to Gander, still 350 miles away. At 4,000 feet and not gain-



**Maj Jon R. Alexander
Maj Daniel J. Silvis III
334 TFS, 4 TFW
Seymour Johnson AFB, NC**

ing on the tanker, he selected afterburner on the left engine. The airplane rolled hard to the right. Concerned about their ability to control the aircraft, the aircrew decided to come out of afterburner. They asked the tanker to slow down, and they were finally able to hook up with the tanker at 2,000 feet and 190 knots. But as the tanker tried to climb, they disconnected.

At 1,600 feet they hooked up again. The towing effect of the tanker enabled them to climb very gently to 4,000 feet. They tried to take on enough fuel to make Gander; but after taking on 2,500 pounds of fuel, they were too heavy to stay on the boom. Major Alexander decided to try afterburner again. The airplane rolled right, but he was able to control it. He hooked up again with the tanker and slowly climbed and accelerated. They spent 30 minutes on the boom in afterburner.

At 150 miles from Gander, Major Alexander and Major Silvis figured they had enough fuel to make it. They disconnected and were able to maintain 9,100 feet and 220 knots. Then they planned and executed a single-engine TACAN approach and landing at Gander despite an 800-foot ceiling and strong winds on the surface.

With the help of their wingman and the tanker crew, Major Alexander and Major Silvis saved their disabled airplane. Their airmanship under stress has earned them the title Tactical Air Command Aircrew of Distinction. ➤

TAG

tips

INTEREST ITEMS,

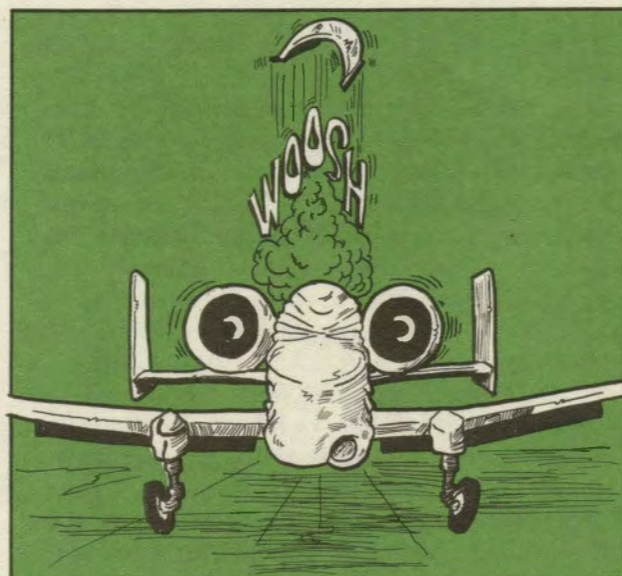
A-10 tries to blow top

Two A-10's were scheduled to fly a night air refueling mission. The pilots planned to take off 30 minutes early and land an hour ahead of the scheduled landing time. The plan worked fine with the tanker, but nobody told maintenance about the change in landing times. So when number 2 taxied in after what had been a successful mission to this point, the ground crew hadn't cleared the parking spot. A B-4 stand was still too close to the left side of the parking space.

Using wands, the crew chief directed the pilot into the parking spot while two other maintenance workers checked the airplane, pinned it, and checked the tires. After this check, the crew chief signaled the pilot to taxi forward to position the airplane correctly on the parking spot and allow the bottom side of the tires to be checked. The pilot began to taxi; but when he saw the B-4 stand within about 10 feet of his left wingtip, he stopped taxiing.

The maintenance crew chocked the airplane again. But the ground wire wouldn't reach the airplane where it had stopped. The crew chief told one of the other workers to move the B-4 stand. Then he signaled the pilot to hold the brakes while another member of the ground crew pulled the chocks. The pilot, however, thought he was on the parking spot, or at least close enough; he was preparing to shut down. When the crew chief signaled, the pilot shut down the left engine.

Thinking that the pilot was following his signals, the crew chief signaled the others to pull the chocks and then motioned for the pilot to taxi forward. The pilot was checking the inertial



navigation system. He looked up and saw the airplane moving forward. With the left engine shut down, he didn't have normal braking, so he quickly decided to pull the emergency brake handle. But he grabbed the canopy jettison handle instead. When he pulled it, the rocket fired, penetrated the open canopy, and landed against a nearby shelter about 140 yards away.

The pilot had confused the two handles because they are exactly alike—but they are on opposite sides of the cockpit. His confusion of the handles was just the final step in a confused sequence of events. The pilot misunderstood the crew chief's signals: he saw what he expected to see, not what the crew chief was really signaling. The crew chief thought that the pilot had acknowledged the signals and was ready to taxi. In fact, neither of them knew what the other was doing.

MISHAPS WITH MORALS, FOR THE TAC AIRCREWMAN

We still need the facts

By Col Gary Lape
TAC Flight Safety

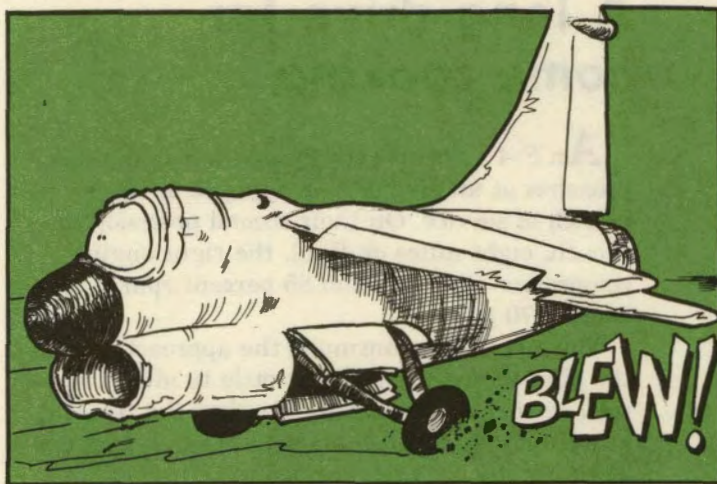
In the July 1983 issue, we published a feature story titled "Get the Facts Straight" to highlight the relationship and responsibilities between the SOF and crews experiencing airborne emergencies. One of the lessons to be learned was that SOF has the authority to direct the actions of airborne emergency aircraft; however, his direction must be based on factual, timely, and objective information.

Another command recently relearned that lesson the hard way—with a smoking hole. A student type experienced some apparent flight control problems shortly after takeoff. Not knowing exactly what his problem was, he was receptive to "suggestive" questioning by his wingman. This contributed to his giving an inaccurate description of the symptoms of his problem to the SOF. The situation was further complicated by the RSO phone call to the SOF with his version of what he thought had happened to the mishap pilot's aircraft. The whole thing boiled down to the SOF not establishing a detailed dialogue with the pilot, incorrectly analyzing the situation, and directing an improper course of action that resulted in an aircraft out of control and a successful ejection. You have tough decisions to make, SOFs: take the time to ask the right questions of the right people. We know that when the fire light is still on or the oil pressure is still falling toward zero, you can't anchor the emergency at the approach fix while you discuss the problem. But when the situation allows, make your decisions on all available information.

It's spreading to the A-7

Turning the antiskid off at high speed and blowing tires is an old F-4 trick that, as we've noted in "TAC Tips" before, the F-15 has also been known to try. Now we find it spreading to the A-7 community.

An A-7 touched down 500 feet from the approach end and 4,000-5,000 feet behind the last of another flight of A-7s. The pilot began braking immediately, but he couldn't feel the antiskid cycling. So at 110 knots and 6,000 feet remaining, fearing that he was going to overtake the flight in front of him, he released the brakes and moved the antiskid switch to Brake Accum. Then he began what he thought was light braking. The left main tire blew immediately.



The pilot released the brakes and engaged the nosewheel steering. A short while later, the right main tire blew out. The airplane began drifting left uncontrollably. The pilot dropped the tailhook and engaged the departure-end cable 75 feet

TAC TIPS

left of runway centerline, heading 20 degrees left of runway heading. The arresting gear safely stopped the airplane.

Afterwards, the antiskid was checked thoroughly. All the components worked fine. The pilot hadn't felt it cycle because his airspeed was too high. The Dash One recommends turning off the antiskid if it doesn't cycle *below 90 knots*. The F-4 and F-15 flight manuals also mention airspeed limits to feeling the antiskid. However, several of us failed to remember that restriction and turned the antiskid off at high speed with the predictable result of blown tires.

We all know that airspeed is critical. However, the hard part comes when you have to wait out the deceleration while you're bearing down on another flight or the end of the runway. Maybe if you're in doubt, you'd be better off dropping the hook and taking the arresting gear before you turn off the antiskid and blow the tires. On the other hand, if your spacing on the flight in front of you is the problem, why not go around early and avoid the rush?

A long drive for home cooking

An F-4 aircrew were flying instrument approaches at an airfield belonging to another branch of service. On their second precision approach, eight miles on final, the right engine compressor stalled. From 85 percent rpm it rolled back to 70 percent.

The aircrew discontinued the approach, and the pilot pulled the right throttle to idle. The stall seemed to clear. They checked the throttle at military thrust; the engine appeared to operate normally. So they decided to cancel the rest of the mission and head home—about eighty miles away.

The engine worked fine until they began their descent into their home field. When the pilot pulled the right throttle through 85 percent rpm,

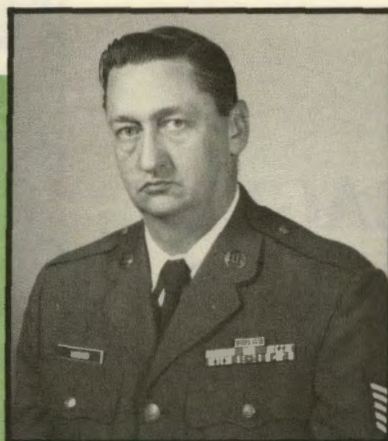


the right engine's compressor stalled again. The pilot moved the throttle to idle and left it there. They landed without any more problems and shut the engine down in the dearm area. Afterwards, maintenance found extensive foreign object damage to the engine in all stages of the compressor rotor and stators.

In another part of the country, an OA-37 was flying ILS approaches to a civilian airfield when its left engine chugged and flamed out. The pilot declared an emergency; but instead of landing where he was, he returned to his home field, another ten minutes down the road. On the ground, maintenance found that the engine-driven fuel pump had failed.

Even with two engines, an 80-mile trip with one bad engine is a long way to go—especially if you're only 8 miles from a good airfield. Even ten minutes is too long to fly a sick airplane when we don't have to. Home cooking is nice, but there are times when we'd be much better off putting up with a greasy spoon and collecting per diem. At least, our odds of enjoying more home-cooked meals will be improved. We just can't count on being as fortunate as these crews were.

GROUND SAFETY AWARD OF THE QUARTER



TSgt Glenn A. Howard

The winner of the Tactical Air Command Ground Safety Award of the Quarter is TSgt GLENN A. HOWARD, unit safety NCO for the 57th Aircraft Generation Squadron, 57th Fighter Weapons Wing, Nellis AFB, Nevada.

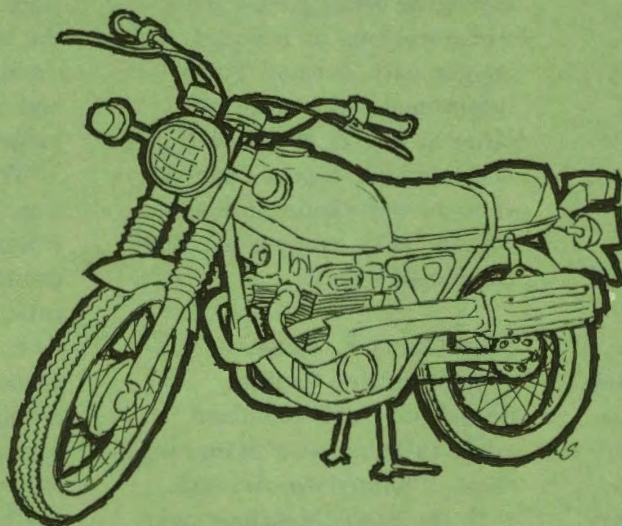
In six months Sergeant Howard converted an unsatisfactory squadron safety program into an excellent, dynamic program. He set up a safety training program for the 1,100-person squadron, educating newcomers during orientation and briefing all of the squadron monthly. He also designed a wallet-size card that described different types of fires and how to extinguish them. Before this card was distributed to the squadron, people in the unit were regularly receiving writeups from the fire inspector because they were unable to answer questions posed to them. Writeups have since decreased 85 percent.

Sergeant Howard developed a briefing book on Air Force Occupational Safety and Health (AFOSH) that the Tactical Fighter Weapons Center's chief of ground safety called the best he

had seen. Sergeant Howard also developed a wallet card on AFOSH for emergencies and passed it out to squadron members.

To estimate the potential motorcycle safety problem in his large squadron, he conducted a motorcycle registration campaign to identify motorcycle owners. From information on the age group and experience level of the cyclists, he developed a tailored motorcycle safety program. One part of the program was a motorcycle awareness seminar. The seminar was mandatory for squadron motorcyclists, but members of other units were also invited to attend. About 550 motorcycle enthusiasts came and heard experts from the Las Vegas police department and the local motorcycle community discuss safety. His squadron reduced its motorcycle mishaps by 20 percent since he began his safety program.

Sergeant Howard's hard work has paid dividends to his large squadron in the form of lives saved and injuries prevented. He is deserving of the Ground Safety Award of the Quarter.



FLEAGLE SALUTES—

1st Lt Charles S. Deaux,
75th Tactical Fighter
Squadron, 23rd Tactical
Fighter Wing, England AFB,
Louisiana.

While serving as senior duty controller in the command post, Lieutenant Deaux took a phone call from a local HAM radio operator. The radio operator told him that a distress signal had been received by another HAM radio operator in Honduras. The distress signal was from a participant in a single crew yacht race who had run aground in the Falkland Islands and was now in danger of capsizing in the rough, stormy seas.

Lieutenant Deaux contacted the U.S. Naval Tactical Communication Center in London, England, who patched him through to the British Naval Ministry.

The British relayed the distress signal to one of their naval vessels off the coast of Argentina. Within minutes, a naval vessel was en route, and it soon rescued the stranded sailor.

AIC Kenneth L. Tutto,
1st Equipment Maintenance
Squadron, 1st Tactical Fighter
Wing, Langley AFB, Virginia.

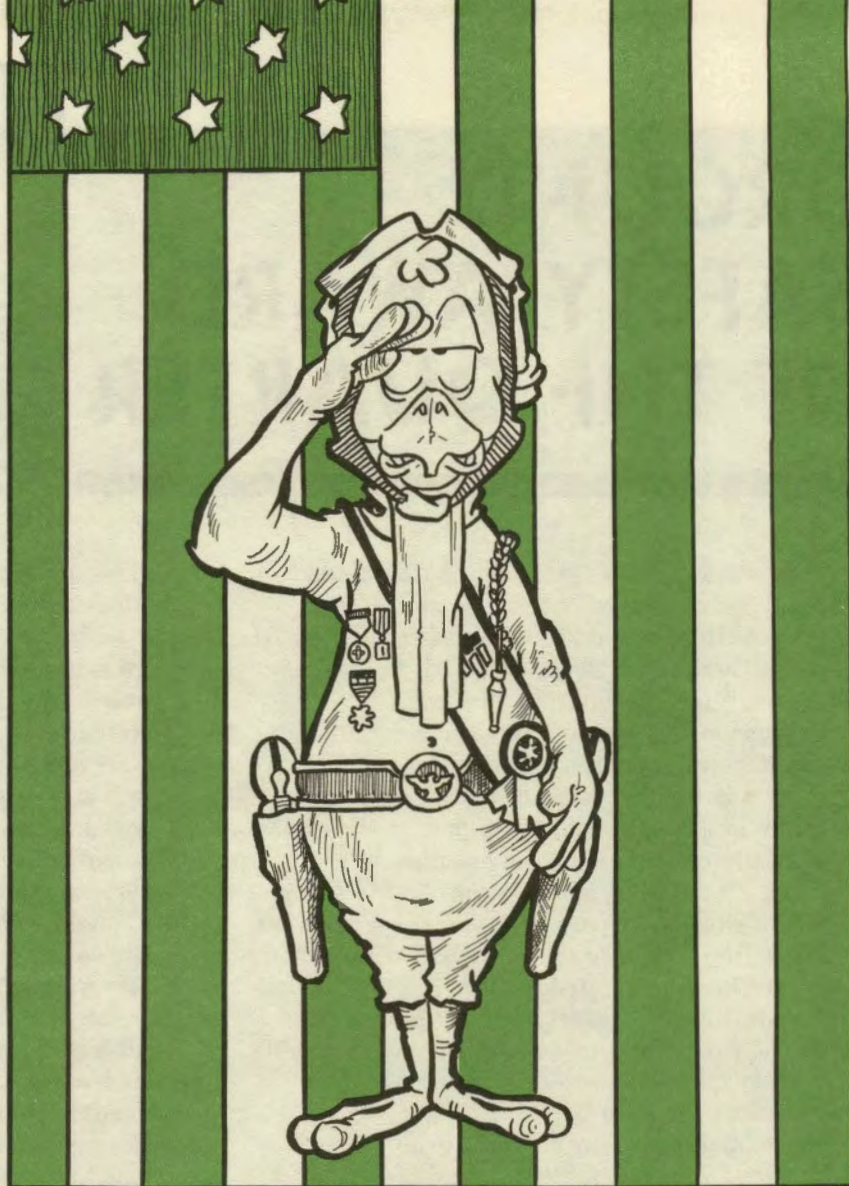
Airman Tutto works in the aerospace ground equipment (AGE) shop. During a mobility

exercise he saw a fellow AGE mechanic using greasy tools while working on a liquid oxygen cart. Airman Tutto intervened and warned the other mechanic of the danger of explosion when pure oxygen contacts petroleum products. The mobility exercise was then completed safely.

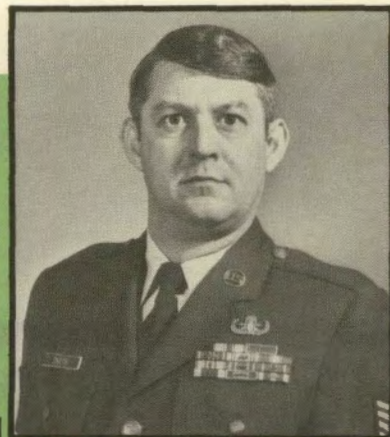
SSgt Garry L. Foxx,
41st Electronic Combat
Squadron, Davis-Monthan
AFB, Arizona. At a swimming
meet in Sahuarita, Arizona,
with the Davis-Monthan swim

team, Sergeant Foxx noticed a woman hitting a little boy on the back. The boy had been eating a lollipop, and the candy had come off the stick and lodged in his throat.

"When I realized that the boy was choking, I put him in the conscious-obstructed-pathway position and pushed until the candy was dislodged," Sergeant Foxx explained. His skill, gained in lifesaving and cardiopulmonary resuscitation courses, prevented brain damage and possible death for the boy.



WEAPONS SAFETY AWARD OF THE QUARTER



TSgt John W. English

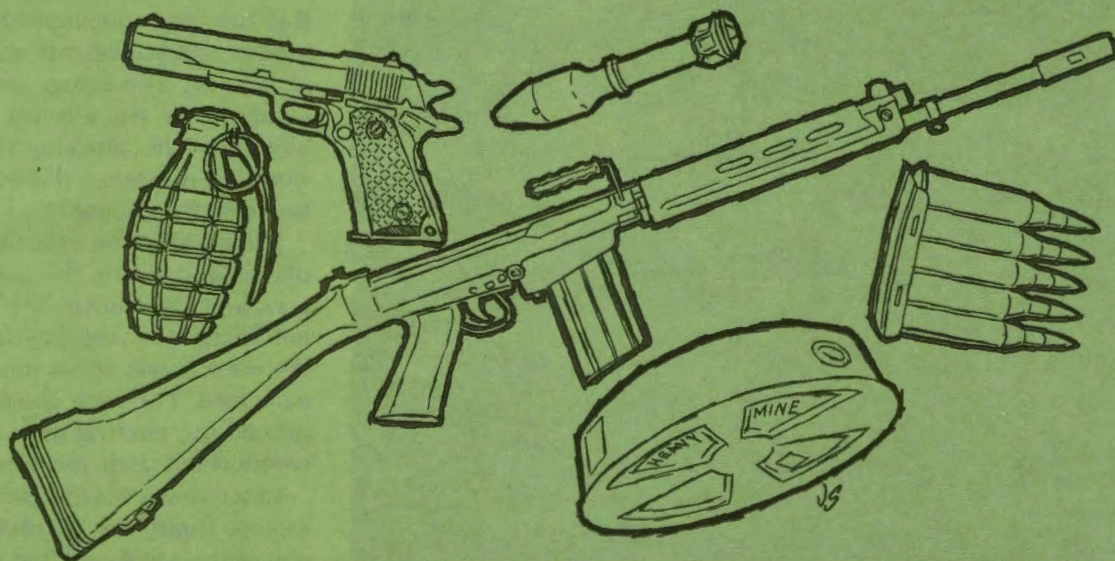
TSGT JOHN W. ENGLISH has won the Tactical Air Command Weapons Safety Award of the Quarter for the third quarter of 1983. He is NCOIC of explosive ordnance disposal (EOD) operations in the EOD Branch, 4th Equipment Maintenance Squadron, 4th Tactical Fighter Wing, Seymour Johnson AFB, North Carolina.

In a career field that demands daily exposure to explosives and hazardous munitions items, Sergeant English has worked steadily to bring explosives and weapons safety to the attention of the base and community. To introduce and enforce the importance of explosives safety to the local civilian community, he instituted a munitions amnesty day program aimed at educating the general public to the dangers of dud and souvenir ordnance items. The initial program netted over 50 different explosive items which were disposed of on the base demolition range. This program met with such public acceptance that it will be continued on a recurring basis.

To upgrade his unit's weapons training program, Sergeant English started a joint service EOD crosstalk in the North Carolina area, contacting the Army EOD detachment at Fort Bragg and Marine EOD units at Cherry Point and Camp Lejeune. EOD workers have made trips between units and exchanged information on host base aircraft hazards. The program has enhanced the level of all services' training.

Sergeant English has also trained the Goldsboro Police Department and Wayne County Sheriff's Office in bomb search procedures and safe, effective handling of the bomb threat situation. The lesson plan he developed was given to 125 law enforcement agents in the local community during September 1983.

Sergeant English's total support of weapons and explosives safety in his wing and his local community has earned him the Weapons Safety Award of the Quarter.



THE UNPINNED HOG

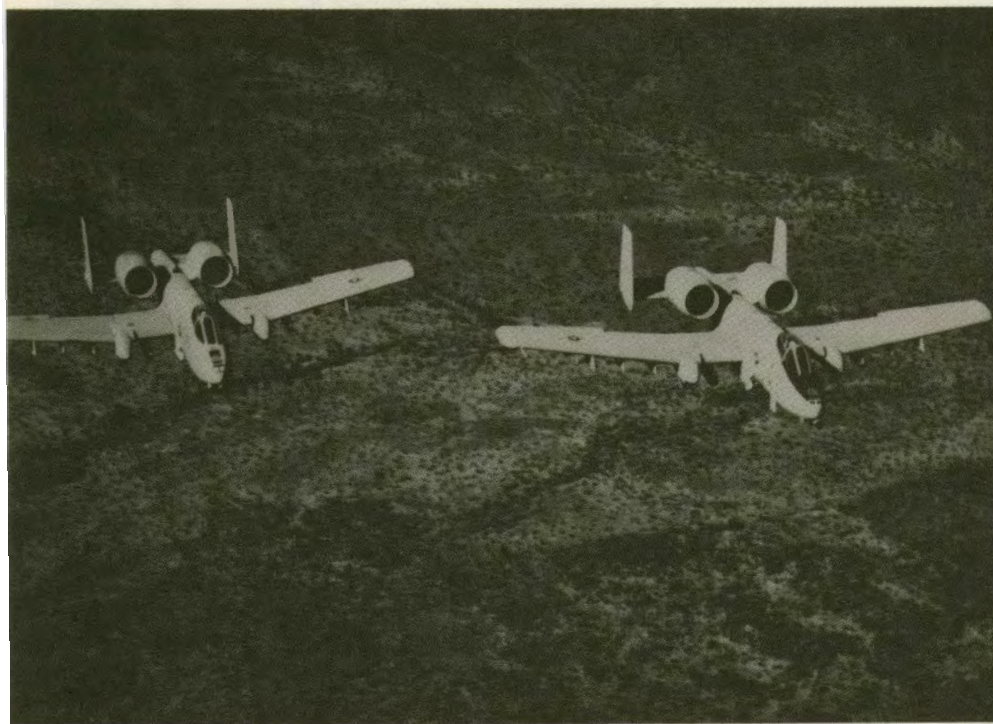
Two A-10s landed after their mission, loaded with TERs even though no ordnance had been carried on that mission. After landing, the pilots taxied to the midfield dearming area and waited for a dearm crew to show up. Squadron ops had notified maintenance that the airplanes needed dearming. A weapons flight expeditor drove to the arming area at the south end of the runway to tell the arm/dearm crew about the airplanes at midfield.

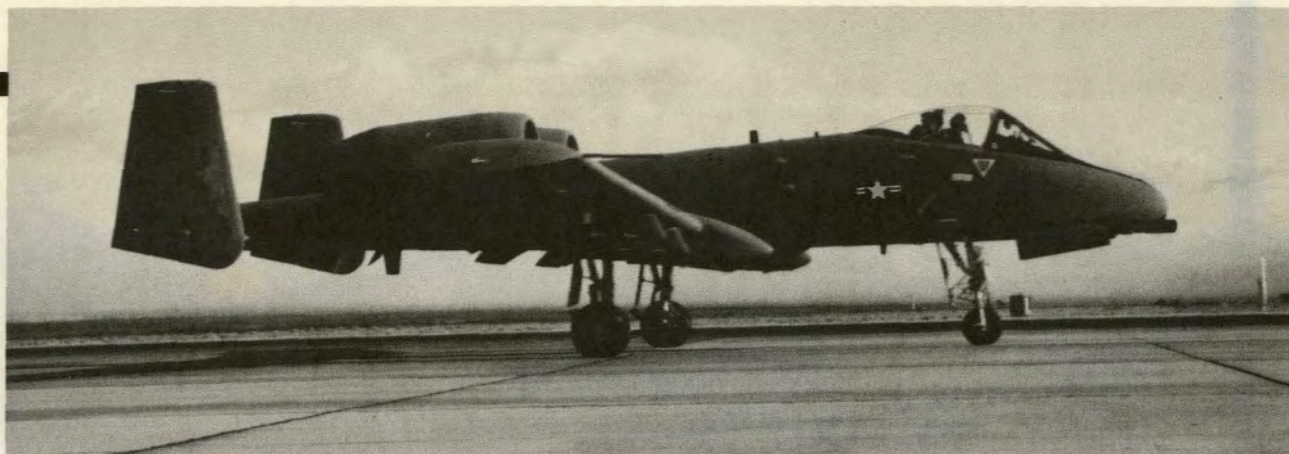
After waiting about three minutes for the dearm crew, one of the pilots called the supervisor of flying (SOF) to let him know that the dearm crew hadn't shown up. Since the airplanes hadn't carried any ordnance on this mission and the guns hadn't been armed, the SOF saw no reason for the airplanes to wait in the dearm area. He told them to taxi to the parking area. The pilots did as he said and taxied in.

The dearm crew arrived at the midfield dearm area shortly after those airplanes had left. But two other airplanes had landed and pulled into the same area. The dearm crew dearmed the two aircraft that had pulled in, thinking they were the airplanes the expeditor told them about.

Meanwhile, the first two airplanes pulled into the parking area and shut down. The pilots left without saying anything to the crew chiefs about not being disarmed. The crew chiefs pinned the landing gear and postflighted their airplanes.

Later that evening, weapons release flight was notified that one of the airplanes had a volt-





age problem on stations 5 and 6. The shift supervisor first checked the aircraft forms to make sure that power could be applied and the aircraft worked. Then he checked the armament circuit breaker panels, resetting two station 5 circuit breakers. The aircraft crew chief started the APU, and then the weapons supervisor set the cockpit switches for his test.

First he tested station 5 for normal release. The crewmember monitoring the PSM-37 tester indicated that the voltage check was good at the station. Next, the supervisor selected Store and pressed the Push to Jettison button for selective jettison. Again the check was good. Finally, the supervisor pushed the Emergency Jettison button. This time the TER-9As from stations 4 and 8 crashed to the ramp.

No one was injured, and the airplane wasn't damaged, but the TERs were banged up a bit. After this incident the other airplane in the flight was

checked, and it's TERs were safety pinned.

It took quite a combination of factors to lead up to this incident. The arm/dearm crew wasn't readily available because only one crew was on duty. That crew had to perform both arming and dearming operations, but they weren't equipped with a radio to let them know which area to respond to. The lack of communication caused the delay in their response.

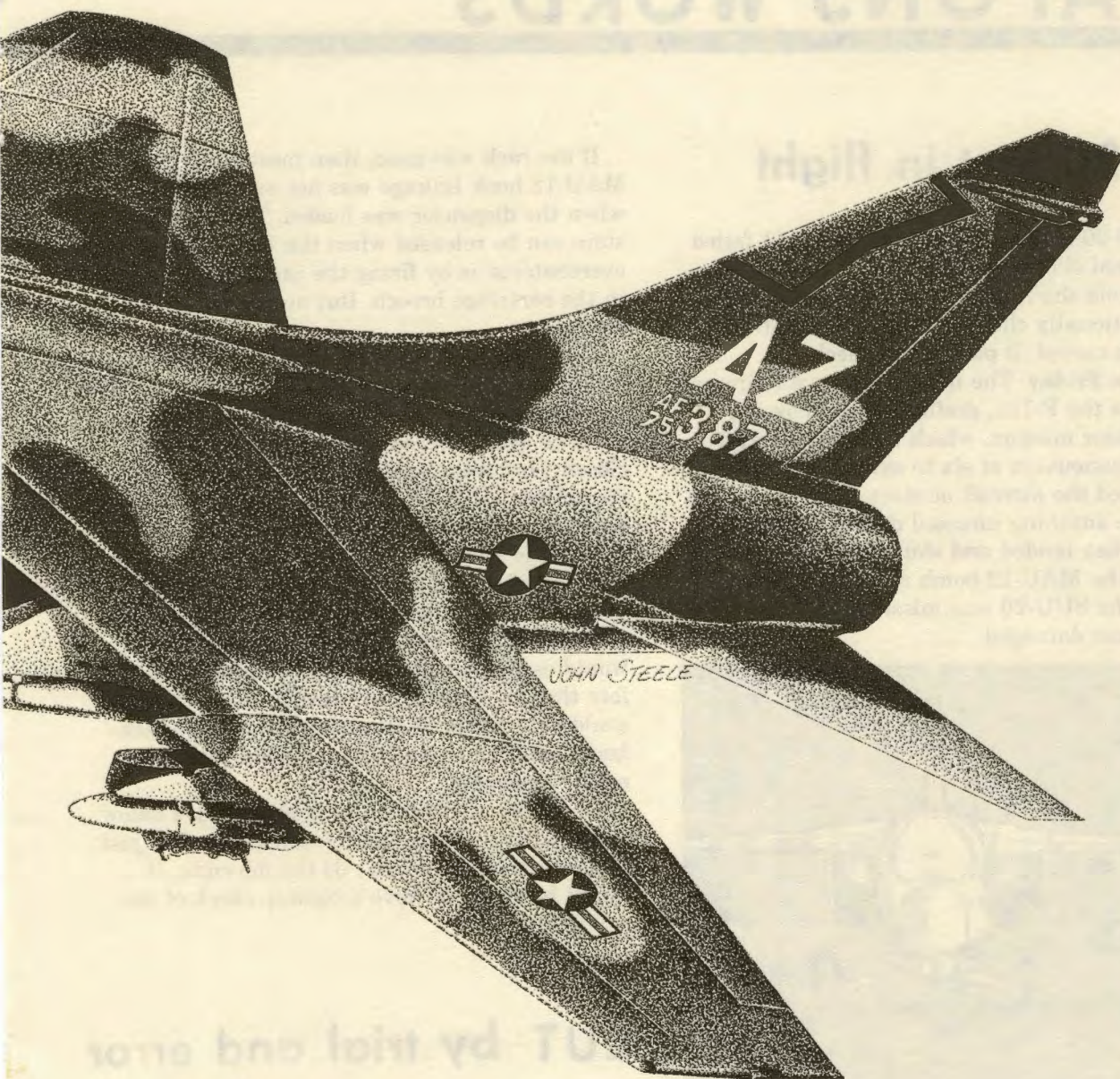
Then the SOF disregarded local procedures that require all aircraft with carts installed to be dearmed. He also didn't coordinate his directions with maintenance to make sure that the airplanes were pinned in the chocks. If he had, the procedures would still have been violated, but the inadvertent jettison would probably have been prevented. Or if the pilot had mentioned to the crew chief that the airplane hadn't been disarmed, that also might have broken the chain of events.

The crew chief should have caught the error anyway. The

work cards for recovery and preflight require checking for safety pins. The crew chief checked them all except the weapons pins. He hadn't received enough weapons safety training to enable him to recognize unsafe weapon systems.

Finally, the weapons release supervisor who ran the jettison check failed to follow the tech data and ensure that the safety pins were installed in all weapons positions before he began his tests. He made a quick scan of the armament stations to see if any munitions were loaded, but he didn't actually check the TERs closely enough to notice the pins missing.

The key links in this whole mishap chain of events were not following the directives and not communicating to others who needed to know when unusual procedures were used. This incident took place in another command; but the question we need to ask ourselves is, Could a similar chain of events happen here? Because next time the damage might not be so slight. ➔

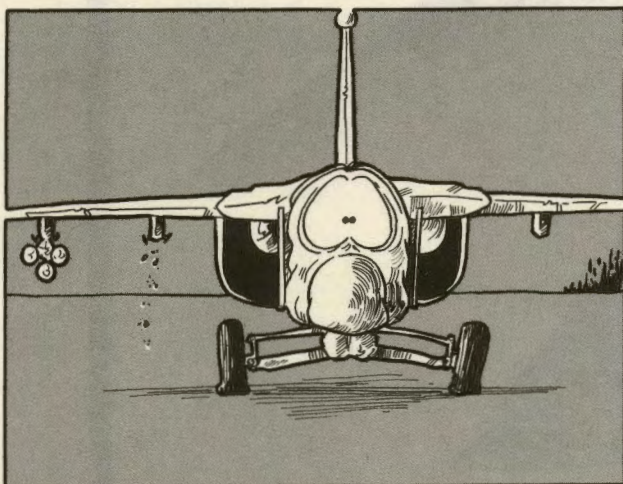


WEAPONS WORDS

SUU-20 lost in flight

A SUU-20 bomb dispenser on an F-111 failed its functional check on station 4. So the weapons expeditor told the load crew to move it to station 5 and functionally check it there. After the dispenser was moved, it passed the check.

That was Friday. The next Monday, an aircrew came out to the F-111, preflighted it, took off, and flew their mission, which included aircraft handling maneuvers at six to seven Gs. They didn't exceed the aircraft or store G-limit, nor did they notice anything unusual during the flight. But after they landed and shut down, they noticed that the MAU-12 bomb rack hooks were open and the SUU-20 was missing. The aircraft itself was not damaged.



The MAU-12 was removed and investigated. The cartridge breeches contained no impulse cartridges. The rack was tested on the proof load tester using a 2,000-pound test load; it checked good. The bomb rack was then taken apart and examined closely, but no defects were found.

If the rack was good, then most likely the MAU-12 hook linkage was not overcentered when the dispenser was loaded. The only way a store can be released when the hook linkage is overcentered is by firing the impulse cartridges in the cartridge breech. But no cartridges were loaded.

F-111 weapons experts agree that if the ground safety pin is inserted in the MAU-12 during loading, as the tech data directs, then the linkage must be overcentered and the hooks locked closed. However, local procedures at this base call for pulling all MAU-12 ground safety pins immediately after loading empty dispensers. The intent of the local rule was to reduce FOD potential. But if the load crew failed to follow the tech data and insert the pin during loading, the aircrew could not catch the error because they would expect the pin to have been removed before they preflighted the station. So the airplane could very easily be flown with the bomb rack hooks unlocked on a station loaded with an empty dispenser.

Of course, the load crew should always follow the tech data and insert the safety pin. But just in case somebody doesn't do the job right, it might be smart to have a backup check of the safety pin.

CUT by trial and error

An armament systems specialist was being given cross-utilization training (CUT) in launch and recovery procedures by an F-4 crew chief. The final item for qualification was installing the drag chute. After they installed the chute, the crew chief told the armament systems specialist

to go up into the cockpit. The crew chief wanted to show the specialist what the position of the locking mechanism in door 106R would be after chute installation. To do that, he needed the drag chute control handle raised.

The crew chief asked the specialist if he knew where the drag chute control handle was, and the specialist answered yes. So the crew chief told the specialist to raise the handle. But the specialist lifted the harness release handle instead. The guillotine cartridge releasing the personnel restraints fired.

The trainee had only been on base a few months. During local indoctrination training he had failed the familiarization test on the egress system. He was never retrained and retested, apparently because his load crew duties didn't require him to enter the cockpit. When he was entered into CUT, no one reviewed his records. The trainer didn't talk to him about his background or experience level either. He simply wasn't qualified to work in the cockpit.

Then the trainer overlooked the requirement in the tech order to install all ejection seat safety pins before giving training on the aircraft. He compounded the problem by sending the trainee up to the cockpit while he stayed on the ground where he wasn't able to oversee the trainee's actions.

In short, this wasn't guided training; it was unsupervised trial and error.

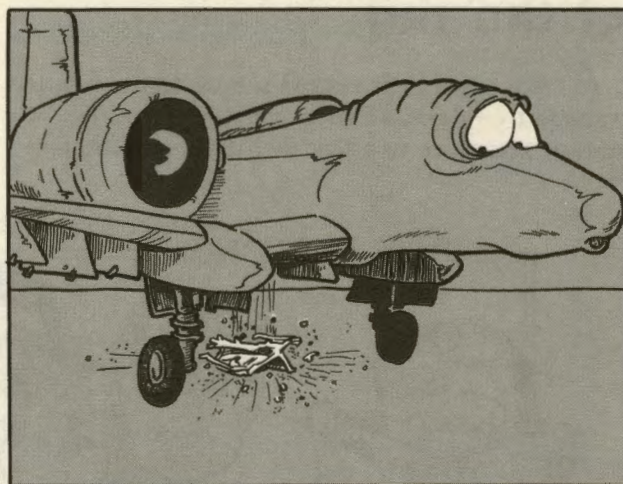
LAU-88 jettisons

The weather was miserable—rain mixed with snow and winds blowing at around 40 knots—as the A-10 taxied in from its mission. The aircraft crew chief marshalled the airplane into its spot,



where the pilot shut down. Then the load crew arrived and began preparing the aircraft for an upload of Mk-82s.

Although the weather was bad, the load crew didn't see any place nearby to get under cover, so they decided to press on. Station 9 had an empty LAU-88 on it. All the other stations were clear. The load crew chief began a functional check of station 1. The load crew chief pushed the selective jettison switch for that station, but the crew didn't get a good reading of power to station 1. They tried again. This time the LAU-88 on station 9 crashed to the ramp.



Station 9 had not been safety pinned. All of this took place at a TDY base that had slightly different procedures for pinning the aircraft. At the main operating base, the pin would have been installed in the LAU-88 at the end of the runway during dearming. At the TDY base, only

WEAPONS WORDS

munitions were pinned during dearming. Aircraft with empty racks were marshalled directly to their parking spots to be pinned by the aircraft crew chiefs. Both the aircraft crew chief and the load crew were new to the procedure. They all assumed that the LAU-88 had been pinned.

Maybe the rotten weather made it easier to make those kinds of assumptions and to skip the checklist step ensuring that all stations are pinned. The weather also may have distracted the load crew chief when he made his second try at getting a good functional check. It looks as though he hit the emergency jettison button instead of the selective release button.

Well, we're coming up on winter, and the weather's going to get worse before it gets better. Now would be a good time to think about the problems caused by bad weather. Under what conditions should you call a halt to the job? If you do have to work in bad weather, can you concentrate on the job at hand? Add the problem of operating out of an unfamiliar location, and you can see that we have some real hazards to cope with. Are we all ready to cope?

Follow the intent of the reg

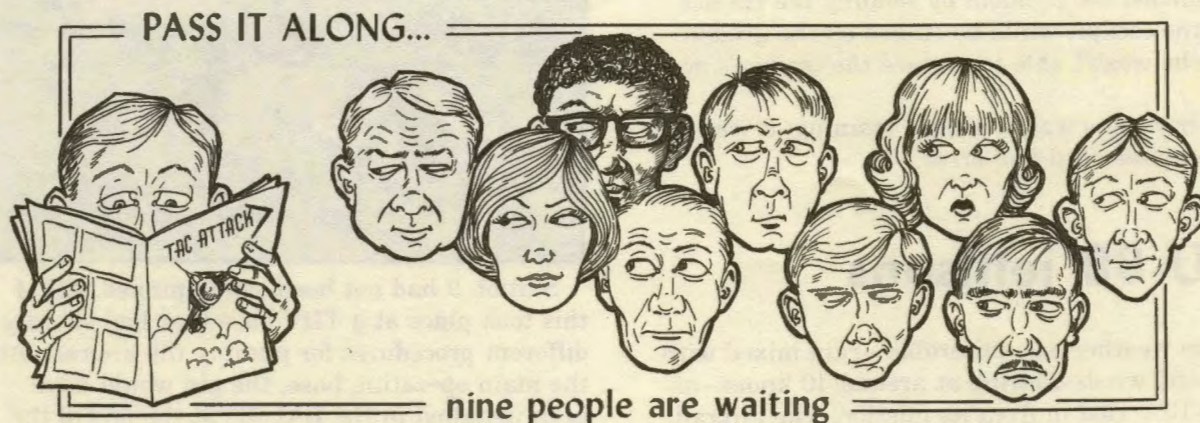
A site supervisor tasked a munitions crew to transport 46 AGM-45 rocket motors from the storage structure to a test facility about 400 feet

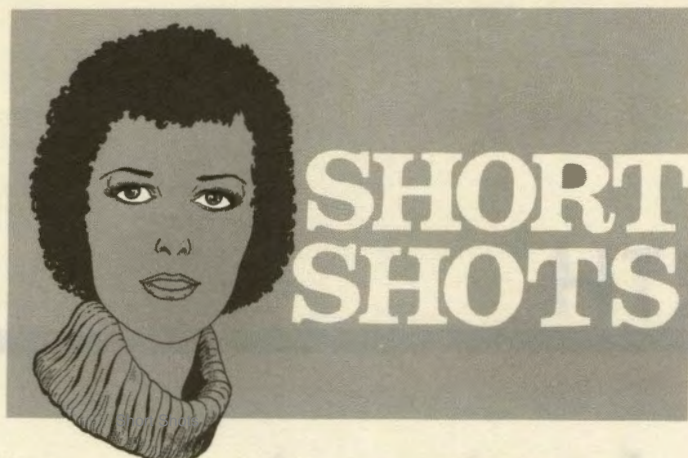
away. The supervisor, an experienced master sergeant, told the crew to use an MHU-32/E guided missile stand to transport the motors, even though the pathway included over 40 feet of unimproved surface covered with loose gravel.

The crew moved 45 of the motors safely. But as they were moving the last rocket motor across the gravel, the left rear wheel of the MHU-32/E hit a rock, causing the stand to stop abruptly. The rocket motor slid off the stand and fell to the gravel.

The tech order warns that an MHU-32/E stand shouldn't be "rolled over loose gravel, steps, holes or other obstacles when loaded with an assembled guided missile. Do not use the stand to transport guided missiles in lieu of MJ-1 or MHU-12 trailer." The supervisor was familiar with the tech order, but he felt there was no violation because they weren't transporting "assembled guided missiles." He was also familiar with another tech order that states "a loaded stand shall not be rolled over rough terrain, through gravel, sand or mud." But that tech order was for AIM-7 missiles.

By the letter of the law, the supervisor was right. But the tech orders weren't written to trip us up on technicalities. The intent was to keep a mishap like this from occurring when an MHU-32/E is used on a rough surface. An MJ-1 or MHU-12 trailer could have been used instead—if only the supervisor had been more concerned with the spirit of the law instead of the letter.





CO and You. Carbon monoxide (CO) poisoning kills several thousand people each year. It's absorbed into the blood quicker than oxygen, so it doesn't take much—two deep breaths in a 2 percent concentration can kill you. Anything that burns fuel gives off CO, so either use it outside or ventilate the area. And check your home heating system for exhaust leaks. Leak detectors are available in some department stores. If you're near something that's burning fuel and you notice a headache, nausea, or drowsiness, get some fresh air before it's too late.

Playpen Enclosures Unsafe. The enclosures are made of criss-cross wooden slates riveted together and expand to form a circular corral that can be used as a substitute playpen. When children try to climb out they get caught in the V-shaped openings along the top or get stuck in the diamond-shaped openings in the sides. Since 1980, there have been three deaths and one incident of brain damage. If you own one, stop using it.

Spending the Holidays in the Dormitory? Be extra cautious with candles, hot plates, cigarettes, and extension cords. Make sure candles are out and hot plates are off if you leave your room or go to sleep, even for a few minutes. Don't smoke in bed. And if you decorate your room with lights, don't overload extension cords.

New Baby Hazards. Small curtain weights used to make drapes hang evenly are often made of lead. If they are swallowed, lead poisoning results. And those tiny batteries found in cameras, watches, and calculators can rupture and release

poisonous chemicals if swallowed. They usually have to be surgically removed. Also, be careful when diapering a baby. Many parents let the baby play with the powder, oil, shampoo, ointment, or wipes container. If the contents are inhaled or ingested, baby can get very sick. And last, glass-lined thermos bottles—don't let small children use them because the liner can break very easily. Some children have swallowed broken glass.

Eye Injuries. When should you go to an eye specialist? If you have pain lasting more than 24 hours. Continuing pain could indicate a foreign body is inside the eye, not just on the surface.

Are People Using Car Safety Seats? Yep, but it could be better. Infant seat use (up to age 1) is 35 percent, and toddler seat use (age 1 to 5) is about 25 percent.

Don't Be an Ash. Be sure to dump your wood stove or fireplace ashes in a nonflammable container. Ashes can appear to be out when they're actually still smoldering.

Stand Up Straight and Prevent Headaches. Dr. Samuel Razook, director of the facial pain clinic at Emory University's School of Dentistry says that "most muscle-related headache patients have life-long habits of letting the head hang forward, from slumping or spending hours at a desk or with a telephone tucked between ear and neck. This changes the pull on other muscle groups which may then aggravate or produce pain." To avoid headaches, he recommends when standing, keep your ears in a perpendicular line with your shoulders, hips, and ankles. Don't let your head slump in front of that line. When sitting, don't stay in one position very long. About every 10-15 minutes, pull your shoulder blades tight together, bring your chin down as far as possible and move your head up and down several times.

Vigilance and Aspirin. Researchers at the Stony Brook, Long Island, School of Medicine found that after giving doses of one to six aspirin tablets to 18 healthy men, some of the men showed a sedated response in task-performance tests at all dose levels. The researchers concluded that the effects should be considered in long-term treatment "especially in cases in which decreased vigilance may be a hazard."

DOWN TO EARTH

Christmas gift ideas

Consider smoke and heat detectors. More homes than ever now have detector protection, but usually not enough. Young people just starting out on their own and the elderly often put off buying detectors. Know someone who could use one?

You could also get microwave meters to test microwave ovens. If you know someone who really worries about getting zapped, a microwave meter could ease their mind.

How about a fire extinguisher? Make sure it's labeled with an ABC. That means it's good for all types of fire.

Carbon monoxide detectors for home heating systems are available. They are especially useful in mobile homes.

Families with small children who do a lot of flying can now buy an approved safety seat for commercial airliners that is also approved for use in cars.

A phone alarm system that automatically dials a preprogrammed emergency number when there's smoke or fire would be great for people who don't spend much time at home.

Portable emergency CB radios are now on the market. They can fit in the glove compartment of a car, plug into the cigarette lighter, and have a collapsible antenna that mounts magnetically on the roof.

And if you can find someone who'll take a raincheck on a Christmas gift, how about a digital medication reminder. It's a bottle cap with a digital readout that displays the day and time the cap was last replaced. Diabetics and the elderly would benefit from this one, but it won't be out until early 1984.

Extension cords

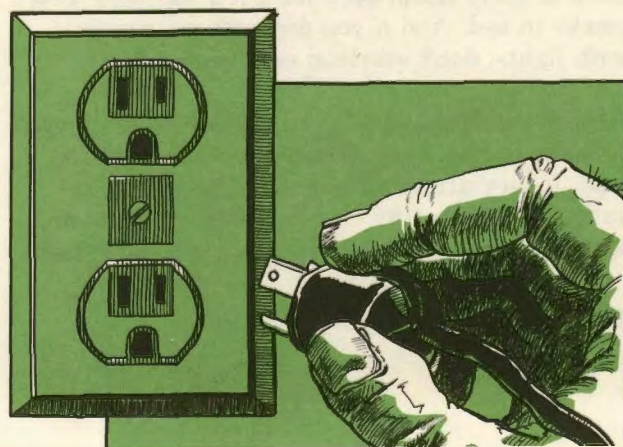
How can you tell if an extension cord could be overloaded? First, check labels. Most extension cords are labeled with amps, volts, and, sometimes, watts. If watts aren't listed, you can figure them yourself. Just multiply the amps by the volts. The amount of power an appliance needs can be found on the appliance's name plate, which lists amps or watts. Volts will also be listed. All you need to do is match up the amounts.

For example: The extension cord can pull 1,250 watts, and you want to plug in two coffee pots that need 650 watts each. The two pots will equal 1,300 watts, overloading the cord.

If your extension cord is labeled in amps and the appliance's name plate is in watts, figure the amps by dividing the watts by the volts.

For example: Your extension cord is labeled for 10 amps. You want to plug in two coffee pots, each 650 watts and 120 volts. 650 watts divided by 120 volts equals 5.4 amps. Two coffee pots would equal 10.8 amps, again overloading your extension cord.

Some other things to consider are the thickness of the cord and the length. Thickness is shown by gauge number. Heavy cords have smaller gauge numbers; light cords have larger





gauge numbers. The smaller the gauge number, the more amps or watts the cord can handle. And length is important. The longer a cord has to be, the smaller the gauge number should be.

A cord that's going to be used outside should be labeled for outdoor use. And if you use an extension cord for an appliance that produces heat, the label should have HPN on it. That means the cord has heat resistant insulation.

More states have laws for car seats

By the end of 1983, more than 40 states will have laws requiring small children to be in a car safety seat or safety belted while riding in a moving vehicle. If the state you're living in doesn't have such a law right now, check it out—it's almost the end of the year.

And whether you're getting ready to buy a car seat for yourself or someone else, or if you're going to borrow one, here are some things to consider:

- The car's safety belt length and size of the buckle. Make sure they fit the car seat you intend to use.

- The internal harness or shield (or both). They should be easy to adjust and long enough for a growing child or bulky winter clothes.

- A seat with a tether or top anchor strap has to be bolted to the car. You'll have to drill a hole behind the back seat, and in many cases the car's gas tank will be in the way.

- Some models that convert from infant to toddler are difficult or impossible to use in the

back seat of a small car or in the front seat of any car if the seat of the car has to be moved close to the dash.

— Check the manufacturer's instruction book and make sure you can understand it — some are poorly written. Car seats aren't safe unless they're installed properly and the child is strapped in.

Driving under the influence—

How would you stop someone from doing it ?

TAC Safety offers some advice. First, be sincere. You have to really want to stop the person from driving. Don't argue, just tell it like it is. Don't label the person or be judgmental—that will put the person on the defensive and cause him to react to you. And don't act alone when confronting the person. Get support.

If you can't talk the person out of driving, try these suggestions. Take his keys. Call a cab to take the person home and pay for it yourself. Call a family member to come and get the person. Take the distributor cap off his car. Tell him to spend the night at your house. Hide the car. Be sneaky—trick the person into your car, then drive him home. And if all fails, call the police for help before the person gets into the car.

Those are tough actions. That's why we say you have to really care.

CREW CHIEF SAFETY AWARD

SSGT JANICE L. DIETZMAN is this month's recipient of the Crew Chief Safety Award. She is an F-16 crew chief in the 72d Aircraft Maintenance Unit, 4456th Aircraft Generation Squadron, 56th Tactical Training Wing, MacDill AFB, Florida.

On 6 June 1983, Sergeant Dietzman was launching her assigned F-16 on a training mission. After her airplane taxied out, she noticed several people running away from another F-16 which was getting ready to taxi from a parking spot and about a hundred feet away. At the same time, she saw what looked like a puff of smoke come from the other airplane. She immediately ran over to the other plane. As she got closer, she saw the crew chief lying on the ground on the right side of the aircraft.

While preparing the airplane to taxi, the crew chief had pulled the safety pin for the emergency power unit (EPU). The EPU had then fired, and the exhaust knocked the crew chief to the ground.

Sergeant Dietzman passed beneath the aircraft, where she detected the ammonia smell of decom-



SSgt Janice L. Dietzman

posing hydrazine. Knowing the dangers of hydrazine exposure, she continued on to where the crew chief lay. With the help of Sgt Brian P. Sawyer, who was right behind her, she carried the crew chief outside the danger area.

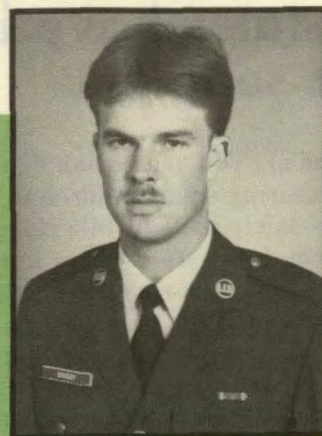
Her rapid assessment of the situation and quick reaction made sure that the other crew chief was removed from the hazardous area in time. Sergeant Dietzman's concern for a fellow worker despite her own risk of exposure has earned her the Tactical Air Command Crew Chief Safety Award.

INDIVIDUAL SAFETY AWARD

A1C ROBERT L. STANLEY, an E-3A crew chief in the 963d Aircraft Maintenance Unit, 552d Airborne Warning and Control Wing, Tinker AFB, Oklahoma, is this month's Individual Safety Award Winner.

On a deployment to Saudi Arabia, Airman Stanley was flying in the jump seat on the flight deck of the E-3A featured in last month's "Aircrew of Distinction." During the airplane's approach for landing in England, an electrical fire broke out on the flight deck. Following the instructions of the aircraft commander, Airman Stanley donned his oxygen mask; but soon he saw that the navigator needed help fighting the fire. When the navigator requested a second fire extinguisher over the mission interphone, Airman Stanley quickly removed his oxygen mask and ran to the mission compartment where he obtained two more extinguishers. Returning to the cockpit, he helped the navigator control the fire, which was located behind the flight engineer's panel and was threatening to burn through several wire bundles.

Afterwards, even though he was suffering from



A1C Robert L. Stanley

the side effects of smoke and chlorobromomethane fumes, he stationed himself in the rear of the aircraft for landing. When they were safely on the ground, he helped the passengers evacuate the airplane.

His actions on the flight deck helped prevent a serious fire from getting out of hand. And his direction and assistance to everyone on board during the ground evacuation ensured their safety. Airman Stanley's professional actions have earned him the Tactical Air Command Individual Safety Award.

F-16 BRAKES: A FIERY ISSUE !



By Col Gary D. Lape and
Maj Mike Lichty
TAC Flight Safety

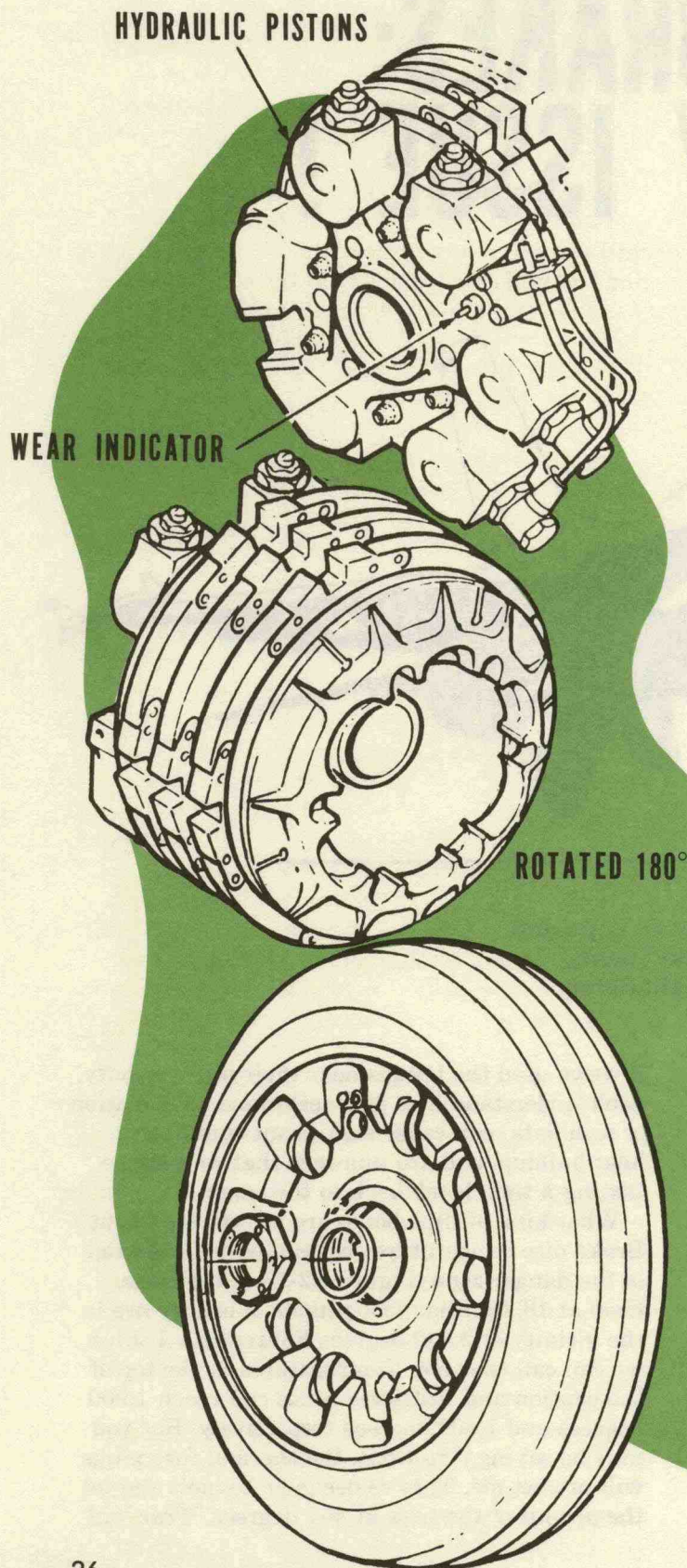
F-16 wheel brakes are in the news. Why all the interest? The TAF has experienced 10 incidents of F-16 wheel brake fires so far in 1983. TAC had 7 of them, all of which occurred at two of our six F-16 bases. So, what is wrong with the F-16 brakes? Nothing, the engineers tell us, unless you want to fault the brakes for being so efficient. The design specs called for extreme efficiency—the brakes had to be lightweight and come in a very small package. What we got was a set of carbon fiber brakes that are able to absorb a great deal of energy within a very small volume—your basic six pounds in a five-pound bag (actually, tens of millions of foot-pounds).

Storing tremendous amounts of energy in the form of heat is not without some risk. Especially

if we've used the brakes near their max capacity, don't understand how poor technique (or violation of tech data) can cause significant cumulative heat buildup, and are unaware that we may be taxiing a time bomb back to the ramp.

What kind of time bomb are we talking about? Brake disc temperatures associated with the top of the danger zone (Figure A2-17 in the Dash One) at 18.2 million foot-pounds of energy are in the vicinity of 2,500 degrees Fahrenheit. I think we can call that hot. Temperatures at the top of the caution and restricted zones can reach 1,900 degrees and 1,600 degrees respectively. But you may be saying, "So what, the thermal fuze plugs will protect me. They're designed to melt and let the air out of the tires at 407 degrees." True, but

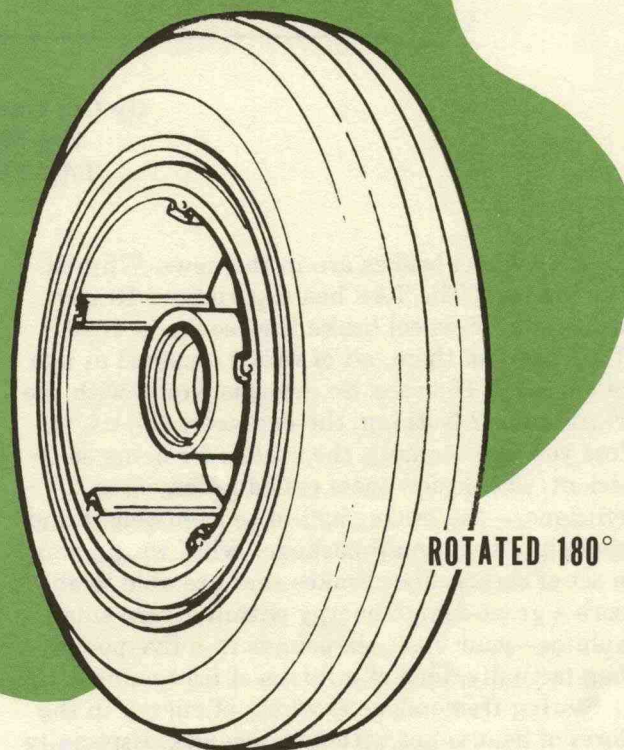
F-16 BRAKES:



where else has all the heat gone? Everywhere. It's being transferred from the discs to the sleeves, pistons, packing, etc. Exposure to intense heat can cause these components to weaken, the packing and seals to melt. If these parts are then subjected to the high pressures exerted by the parking brake or full pedal pressure, the pistons become distorted and the integrity of the housing threaded surface is degraded. Subsequent failure of the parts under pressure can lead to pressurized hydraulic fluid spraying on the hot metal with an ensuing catastrophic wheel brake fire.

What can the pilot do about this? First, understand the system and its limits; then use the correct procedures and preferred techniques.

Since a number of TAC's wheel brake fires occurred shortly after aborted takeoffs, a discussion of maximum brake application airspeed seems appropriate. Figure A2-17 in the Dash One is



A FIERY ISSUE!

used for computing this airspeed. An explanation for walking through this maze is on page A2-9. Note that the airspeed considers the amount of braking absorbed during taxi and whether you apply the brakes prior to the engine winding down to idle thrust. The computation will warn the pilot above what airspeed he may exceed the design energy limits, resulting in brake fade or total brake loss.

For heavyweight configuration, the pilot can calculate the abort speed above which the tail hook *will be* required to stop the aircraft. Also, passing your abort parameters to the SOF will allow him to quickly calculate which energy zone your brakes are in. He can then pass the worst case information to crash recovery, fire department, or dearm crew. These people are generally aware that peak temperatures are reached within 10-20 minutes of brake usage. They should be provided real time information as to the hazards associated with your braking conditions. Hesitation or indecisive action can unnecessarily expose these personnel to a wheel brake fire fed by pressurized hydraulic fluid.

All of the above assumes you have followed the tech order procedures and recommended techniques in using the brakes. You used them to the minimum extent possible during taxi; you used only that pressure required to hold the aircraft static in the arming (or dearming) area or while holding number one. With the chocks installed (toes off the pedals), the brake springs counteract the 90-psi residual pressure. Light toe pressure exerts about 400-500 psi; full pedal pressure exerts 2,300 psi. The parking brake uses the full system pressure of 3,100 psi (remember what we said about heat weakened pistons, sleeves, etc?).

How about your landing or aborted takeoff technique—are you maintaining one continuous application of heavy to maximum braking until taxi speed is reached? Or are you using continuous or sequential applications of light to moderate braking, which distribute braking pressure and energy absorption unevenly? Light braking usually results in increased heat transfer to the left brake assembly; and use of this technique for a high speed abort or hot touchdown

requires the pilot to apply the same Dash One procedure that he would if landing with asymmetrical loading, i.e., assume that he is in the next higher energy zone to allow for unequal brake energy distribution. What may appear to be a restricted zone landing could in fact require scrambling the fire trucks.

Other pilot actions can result in cumulative heat buildup: using differential brakes to steer until you are ready to clear the runway or dragging the brakes all the way to the chocks with a nozzle failure (closed). Normal taxi operations should incorporate short (snubbing) brake applications to control taxi speed. How about the prudence of setting the parking brake in the arming area on the second or third sortie of a rapid turn exercise? Undissipated heat transferred to the brake assembly in the first two sorties, particularly during the last landing and taxi-back, combined with taxi energy absorbed on a subsequent sortie, may adversely affect the pistons and sleeves if the parking brake is set. In 2 of the 7 brake fires in TAC this year, it is known or suspected that the pilot had set the parking brake after landing. The engineers are presently considering the wisdom of using the parking brake for anything other than emergency stopping capability. (At the time of this printing, a safety supplement to 1F-16A-1 that will restrict the use of the parking brake during ground operations is being coordinated.)

In summary, the only problem with the brake design appears to be its extreme efficiency. The brakes will convert a great deal of kinetic energy to heat energy and allow you to stop your F-16 in a very short distance for such a small, lightweight brake package. You need to exercise care and use braking techniques that will not result in any more heat energy buildup than is required. F-16 pilots need to appreciate the great deal of energy that is being absorbed and the conditions that can result in the brake energy absorption moving into the caution and danger zones. The extreme temperatures require special considerations and actions to ensure the safety of the pilot, ground personnel, and equipment. Being smart on this system is going to ensure that we don't experience a catastrophic wheel brake fire back in the chocks or in the "hot pits."

A parting note: The brake energy limits chart is based on analytical data. Tests to confirm this data were scheduled to begin last month at Edwards AFB, California.

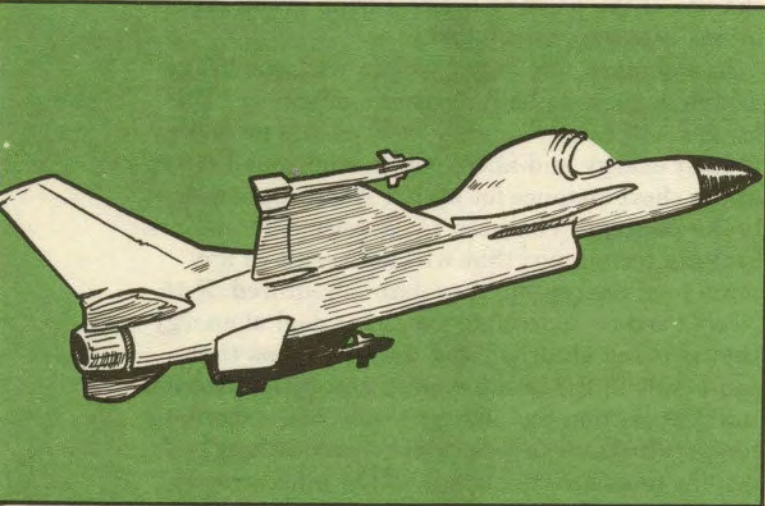
CHOCK TALK

INCIDENTS AND

Electrical excitement

Just after taking off, at 200 feet and 200 knots, the F-16 pilot glanced down and saw his caution and warning lights lit up like Times Square. The Master Caution, Electrical System, Main Generator, ADC, CADC, Avionics, LE Flap, EPU Run, and Air lights were all illuminated. The pilot recognized that his main generator had failed. The EPU was on and appeared to be operating normally.

As he climbed and turned back toward the field, the pilot did the checklist steps; the gener-



ator wouldn't reset. He landed without any problems, but while rolling out he noticed the Hydrazine light come on. A couple of minutes later, he turned off the EPU as he shut down in the hydrazine area. The EPU fuel quantity was still showing 100 percent.

The generator failure was caused by the inter-

nal failure of the constant speed drive. But the real puzzle was the EPU's performance. Despite the Hydrazine light, investigation showed that the EPU had run in the Air mode only and had never been augmented by hydrazine. The burst disk had not ruptured, and the H-70 system had not pressurized. A closer look showed that the cannon plug for the EPU shutoff valve was disconnected. The Hydrazine light on rollout meant that a command was sent for hydrazine augmentation, but with the plug disconnected no hydrazine was available.

The cannon plug is designed so that it won't back off due to G-load or engine vibrations. On the other hand, a disconnected cannon plug can't be detected by the EPU ground checks before takeoff. So the plug was probably not installed properly in the first place.

The last documented maintenance done on the EPU before this incident had been a monopropellant check during phase inspection. That took place just at the time that this unit was transferring responsibility for monopropellant checks from component repair squadron (CRS) electricians to aircraft maintenance unit (AMU) electricians. We don't know who was responsible in this particular instance; but, obviously, the transition period provided plenty of opportunity for confusion.

The good news in this incident was that the Air mode of the EPU proved capable of operating at a lower engine rpm than we'd thought possible. But it shouldn't have had to carry the load without augmentation. Better maintenance practices would have insured the EPU was fully capable. **And in the Electric Jet, we'd better do all we can to give the pilot full electrical backup.**

INCIDENTALS WITH A MAINTENANCE SLANT

Another blowhard story

Two rows of F-15s were parked tail to tail. As an Eagle in one of the rows pushed up the throttle to taxi out, its jet blast hit the F-15 in the row behind it. The force of the jet blast blew the stabilator up into the rudder, knocking a nine-inch hole in the stabilator.

A couple of days earlier, both left and right horizontal stabilator actuators had been removed from that F-15 for an immediate action TCTO. The tech data warns that "to prevent injury to personnel and/or damage to aircraft, horizontal stabilator antirotation brace must be installed when servocylinder is removed and replacement servocylinder is not installed immediately." But supervisors in this unit approved the mass removal of stab actuators for the TCTO action—even though they knew they didn't have enough braces for that many stabilators. In place of the specified brace, they approved the use of $\frac{3}{4}$ -inch grounding cable to secure the stabilator. Nowhere in the tech order is such a jury-rigged brace authorized. So it shouldn't have been much of a surprise that the brace failed when it was stressed.

We need to insure that even an immediate action TCTO does not entice us to abandon sound maintenance procedures.

Short memories

On Tuesday, the aircrews in an F-4 wing had their monthly flying safety meeting. One of the subjects discussed in detail was the problem of travel pods being mounted too far aft.

On Friday, maintenance received a safety supplement that explained how to properly load travel pods. The supplement also instructed maintenance to paint alignment stripes on the pods to help guard against improper loading.

On Friday a week later, an F-4 from this wing took off on a planned cross-country flight, carrying a travel pod. When the pilot tried to raise the gear, he got unsafe indications. The gear extended normally, so the aircrew made an uneventful landing.



The left landing gear door had struck the travel pod tailcone when the gear was retracted. Both the gear and the pod were damaged. It didn't take long to find the cause: the travel pod had been loaded incorrectly 14 inches aft of where it should have been; it was attached by only one lug.

The crew that loaded the pod, their supervisors, the crew chief, the aircrew, and the quick-check crew at the end of the runway all failed to notice that the pod was on wrong. Still think that only ten percent don't get the word?

CHOCK TALK

Parts problem in F-4 cockpit

An F-4E had taxied out and was just about ready for takeoff. The pilot closed the front canopy. As the canopy came down, the aircrew heard a loud pop and a hissing noise from the right side of the front ejection seat. They aborted the mission, safed the ejection seats, shut down, and climbed out.



A medium pressure line—the canopy closing hose assembly—on the forward canopy had broken at its connection fitting, releasing 900 psi air into the cockpit. This hose assembly had been damaged because of improper installation of another line, the emergency air line assembly. The emergency air line assembly for the forward cockpit comes in two different configurations: a solid line and a flexible line. The solid line is designed for one specific block of aircraft, but it's possible to install it on other aircraft that should have a flexible line.

That's what happened in this incident. The wrong line was installed. Although the illustrated parts breakdown book differentiates between the two configurations, the maintenance tech order didn't mention that two different configurations existed. The line was cannibalized

from another F-4, and the illustrated parts breakdown book wasn't consulted.

When the pilot closed the front canopy, the solid emergency air line hit the canopy closing hose assembly and broke it.

A change has been submitted to the tech order to point out the Murphy potential. But the incident is a reminder that we can't take anything for granted on interchangeability of parts. Even the tech order alone may not tell us all we need to know. **Rest assured there are more Murphies waiting for us.**

He huffed and he puffed and he blew the house down

A flight of four F-15s were operating out of a TDY base. After finishing their end-of-runway (EOR) check, they taxied to the runway for takeoff. The exhaust from the four-ship, together with gusting crosswinds, blew over the EOR shack and destroyed it. Fortunately, no one was in it at the time.

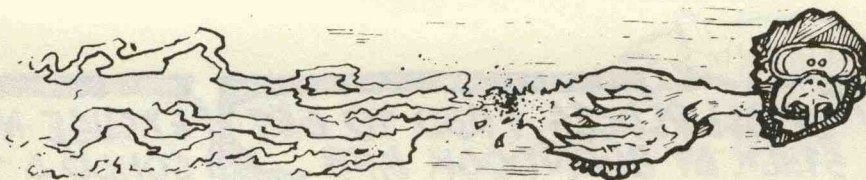
Airfield clearance and obstruction restrictions had forced the TDY troops to place their shack in that location. Ironically, they had planned to tie down the shack that very same day; but, somehow, they just hadn't gotten around to it.

The incident brings to mind the fable of the Three Little Pigs and the Big, Bad Wolf. One pig built his house of straw, the second used twigs, and the third took the time and effort to build his of bricks. Of course, the wolf had no problem blowing down the first two houses, but the third proved to be his undoing.

We don't need to build EOR shacks out of brick, but we do need to take the time and effort to make sure they are secure. Otherwise, wolves—and Eagles, Falcons, Warthogs, Rhinos, or whatever—will blow them down.

If you stop to think about it, the lessons of both the fable and this incident go beyond tying down EOR shacks. In everything we do, we're better off if we take the time to do the job right. Otherwise, all we've built may come crashing down around us, and we'll be at the mercy of the wolves.

TAC TALLY



CLASS A MISHAPS
AIRCREW FATALITIES
TOTAL EJECTIONS
SUCCESSFUL EJECTIONS

TAC		
OCT	THRU OCT	
	1983	1982
1	27	24
1	8	14
1	22	21
1	19	18

ANG		
OCT	THRU OCT	
	1983	1982
0	10	5
0	9	2
0	9	5
0	4	4

AFR		
OCT	THRU OCT	
	1983	1982
0	1	1
0	1	0
0	0	2
0	0	2

TAC'S TOP 5 thru OCT '83



TAC FTR/RECCE	
class A mishap-free months	
47	355 TTW
30	363 TFW
26	58 TTW
19	4 TFW & 35 TFW
16	37 TFW

TAC AIR DEFENSE	
class A mishap-free months	
129	57 FIS
82	5 FIS
79	48 FIS
38	318 FIS
29	87 FIS

TAC-GAINED FTR/RECCE	
class A mishap-free months	
138	188 TFG (ANG)
130	138 TFG (ANG)
129	917 TFG (AFR)
107	114 TFG & 174 TFW (ANG)
102	112 TFG (ANG)

TAC-GAINED AIR DEFENSE	
class A mishap-free months	
112	177 FIG
78	125 FIG
61	119 FIG
45	107 FIG
36	147 FIG

TAC/GAINED Other Units	
class A mishap-free months	
171	182 TASG (ANG)
155	110 TASG (ANG)
151	USAF TAWC
143	84 FITS
139	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	3.8	4.5	4.1	3.9	3.7		
	1982	7.8	5.7	5.9	5.2	5.9	5.7	5.1	4.7	4.4	4.1		
ANG	1983	9.1	7.0	4.4	4.3	3.4	4.2	4.8	4.2	4.7	4.2		
	1982	0.0	2.7	3.2	3.4	3.6	2.9	3.1	2.7	2.4	2.1		
AFR	1983	0.0	0.0	0.0	0.0	0.0	0.0	3.6	3.1	2.8	2.5		
	1982	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.5	3.1	2.7		

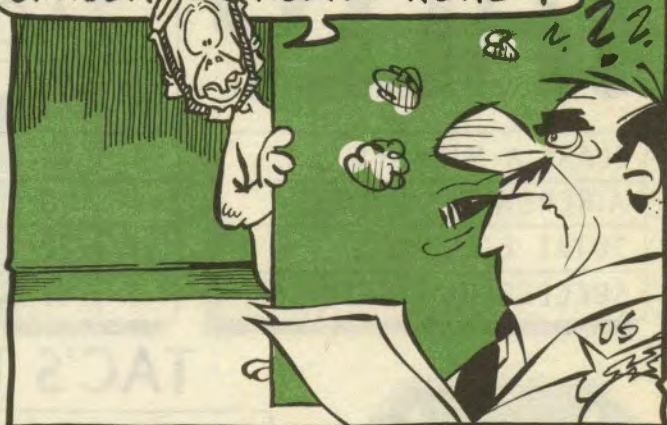
JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC

FLEAGLE

OF ALL PLACES, I HAD TO GET STUCK AT BOONDOCK AFB DURING CHRISTMAS.



EXCUSE ME, COLONEL. WHERE COULD A TRANSIT GET CHRISTMAS DINNER 'ROUND HERE?



I DON'T KNOW ABOUT THINGS LIKE THAT. LET'S ASK CLAYTON.



CHRISTMAS DINNER? HERE, AT BOONDOCK?



YEAH, OH, THE AIRMAN HERE SEEMS T'THINK IT'S SOMETHING SPECIAL.



THAT'S GREAT! I'LL GET RIGHT ON IT.



HAVE A VERY MERRY CHRISTMAS
FLEAGLE AND THE FOLKS AT BOONDOCK AFB

