TAC ATTACK

NOVEMBER 1983

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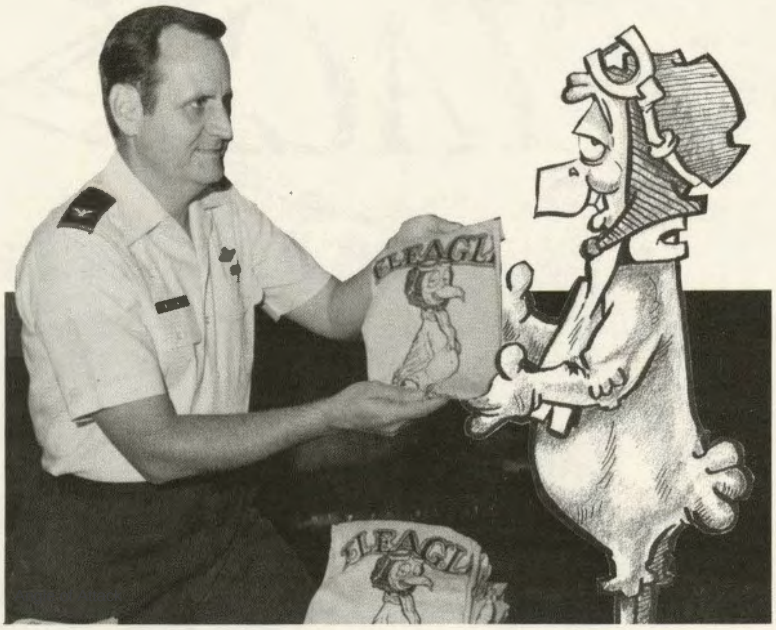


ANGLE OF ATTACK

Fleagle T-Shirts are back. Stan Hardison, the creator and copyright holder for Fleagle, has given us permission to print Fleagle T-shirts and give them to our authors. In the photo above, Fleagle is presenting the first of the new Fleagle-shirts. We have obtained enough large and medium T-shirts that we can now give them to every author who has a feature story published in *TAC Attack*. We're still out of extra large shirts, but we're working on that.

I hope the T-shirt reward encourages you to write your story for us. Readers who responded to our survey overwhelmingly requested more personal experiences—"There I Was" stories. But if we're going to print more personal experiences, you'll have to send them to us. So write down your war story and send it in. If we publish it, you get a Fleagle T-shirt, and the rest of our readers get more of what they like best. Everybody wins.

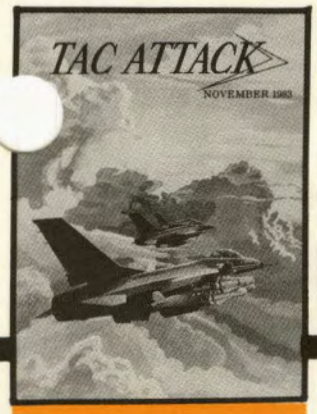
This month's T-shirt winners are Lt Col Harry Stevenson and Maj Gary Goebel. Colonel Stevenson has written an interesting fantasy called "Duty Officer." How much of it is fact and how much is fantasy, you can decide for yourselves.

Major Goebel completes his series of articles on the problem of distracting cockpit duties in part two of "Got a Minute?—Maybe." This month, he investigates pilot strategies and behavior patterns. The results can be enlightening.

Read, enjoy, and learn. As Fleagle reminds us, Thanksgiving is much more enjoyable if you aren't the turkey.

Harold E. Watson

Harold E. Watson, Colonel USAF
Chief of Safety



ON THE COVER:
F-16A FALCON

NOVEMBER 1983

DEPARTMENT OF THE AIR FORCE

TACRP 127-1

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GOT A MINUTE ? ..MAYBE

A Further Look at "Vigilance and Distraction" Part 2

By Maj Gary Goebel
USAFAGOS, Hurlburt Fld, FL

[Editor's note: This concludes a three-part series by Major Goebel that began in August 1982 when we published his article "Vigilance and Distraction." Last month, Major Goebel wrote about the results of his study of pilot actions in the simulator. He measured the amount of time different pilots took to do different cockpit tasks along with altitude deviation that resulted. He also compared altitude deviation to time of distraction at varying bank angles. His results showed that all of the common cockpit tasks, except possibly changing TACAN channels, took more time away from the primary job, or "vigil," of controlling the airplane than could be safely spared. This month, he looks at the pilot strategies used to solve that problem—what did and did not seem to work.]

All of us who are pilots have to deal with the problem of maintaining aircraft control while at the same time tending to many other less important cockpit tasks. Last month we looked at some of those tasks and the amount of time they distracted our sample group of pilots. We found that none of the selected tasks could be safely performed *all at once*. In other words, the pilots had to employ some sort of a *strategy* to do the tasks.

How do we develop strategies? From Capt Milt Miller, Tucson Air National Guard:

> Typically, a guy is rolling along, he looks away for one second and says, "Well, I didn't die and the airplane didn't move!" He builds up a certain psychological reference point of free time. He may start out with one second, attempting it ten times without incident. As he tries two seconds, then three, he finally finds out that at seven he nearly kills himself. "Wow, that's too close! It must be somewhere less than seven and greater than one."

The way Captain Miller describes it is probably more systematic than the actual way most of us develop our strategies. But the point is, no one has done any analysis or developed structured training to teach us strategies. We have no simulator training to teach us good habits because the "good habits" have not been defined. Each one of us works it out on his own.

My purpose in the study I did of pilots in the simulator was to take a first step toward defining which ways of handling those other tasks work best.

As you may recall from last month, we set up a video camera inside the cockpit of an A-10 simulator to monitor pilot actions. Eight experienced A-10 instructor pilots were asked to maintain altitude at 5,000 feet (the primary task, or "vigil") while they were given a variety of other tasks (the "distractions"). The distractions were routine tasks: changing TACAN channels, setting up weapons switches, changing UHF and IFF frequencies, referring to the emergency procedure checklist, getting the letdown book out and referring to it, computing time to bingo fuel, and figuring fuel used to go a given distance. The average time required to do the tasks ranged from just over 6 seconds for changing TACAN channels to more than 44 seconds for computing fuel and distance. Average altitude change while performing the tasks ranged from 38 feet for the TACAN switch to 214 feet for figuring time until bingo fuel.

In an earlier study of civilian pilots, Robert Bateman investigated multiple task performance. He found that some pilots were able to perform

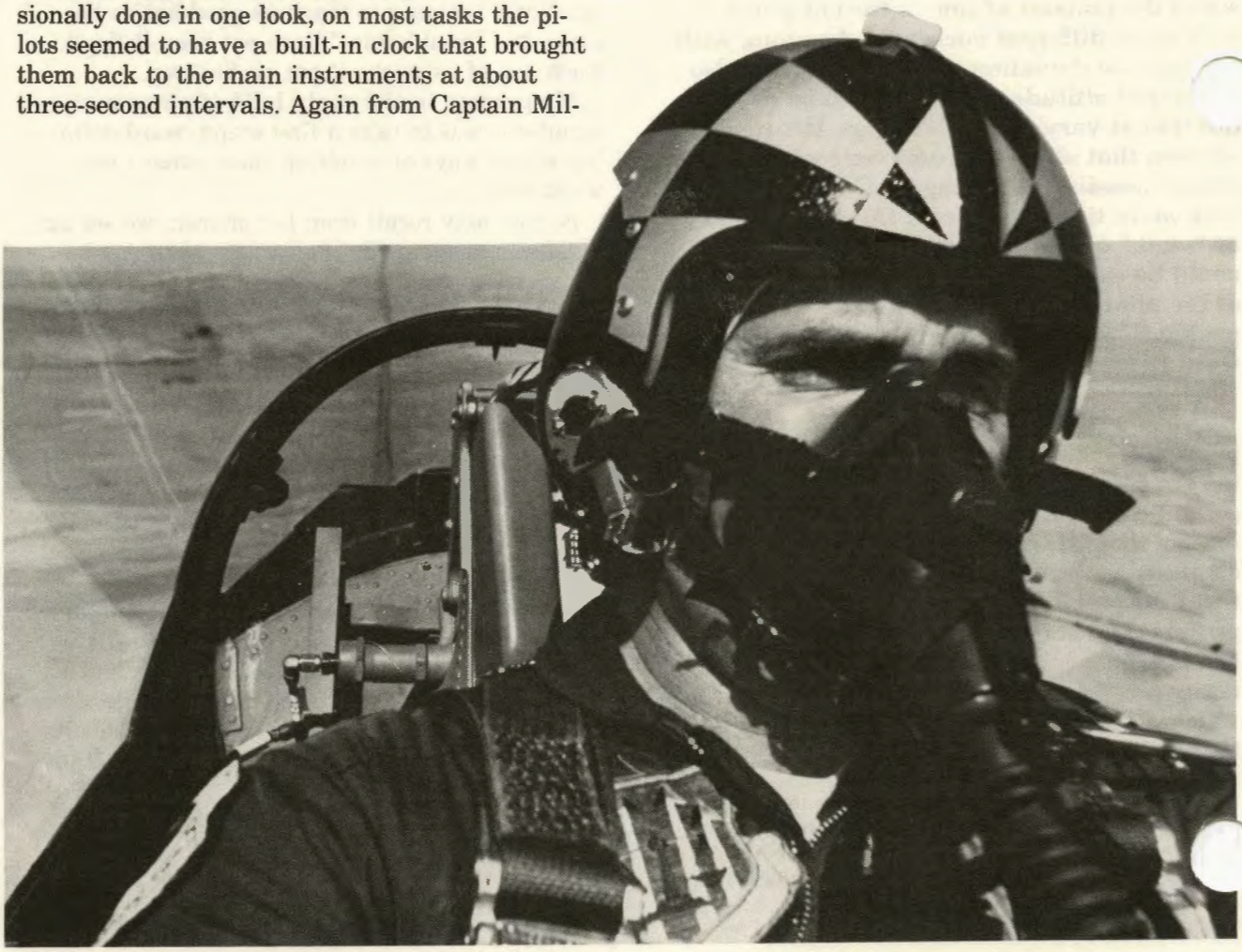
discrete tasks and still accomplish their primary tracking task while others were not able to handle both. Bateman observed that pilots generally used one of three strategies:

> (1) Some subjects devoted a majority of their attention to the tracking task and completed the discrete task one step at a time. (2) Others would completely abandon the tracking task and complete the entire series of discrete action in a rapid flurry. (3) A third type of strategy involved the rapid accomplishment of short, partial sequences of discrete tasks with total attention to the primary task between sequences.

I didn't find as great a disparity in the behavior of experienced A-10 instructor pilots. The behavior of the second type was completely absent. Although the TACAN change was occasionally done in one look, on most tasks the pilots seemed to have a built-in clock that brought them back to the main instruments at about three-second intervals. Again from Captain Miller: "You start a timer in the back of your head—time control— and when it beeps, time to go back and look again."

But I also noted that for some the return to the main instruments was just a glance; but for others the looks at the main instruments took most of the time, and the glance was at the additional task. It was as if for some pilots the secondary task had assumed primary importance but for others the priorities had not changed. Certain pilots also delayed a considerable length of time before beginning a task after they were instructed to perform it. I could almost see an I'll-do-it-when-I'm-good-and-ready attitude with these pilots.

Those two behavior patterns—the delay before beginning a task and the proportion of time



nt on the main instruments—were examined re closely. To measure the amount of time devoted to the main instruments, the task of switching the IFF code in level flight was used since it required a large amount of movement away from the main instruments. I measured the times with accuracies to tenths of seconds over three separate frequency changes for each pilot. Then I divided the time spent on the main instruments by the time taken for the whole task and averaged the results over the three repetitions of the task. Note the wide variation in the amount of time spent on the main gauges, from as low as 25 percent to just over 70 percent.

PILOT	PORTION OF TIME ON MAIN INSTRUMENTS	AVE. TIME FOR TASK	AVE. ALTITUDE DEVIATION
A	.254	11.0 sec	217.0 ft
B	.321	14.3 sec	157.0 ft
C	.363	5.7 sec	0.0 ft
D	.429	5.5 sec	50.0 ft
E	.465	9.0 sec	33.3 ft
F	.505	10.7 sec	16.7 ft
G	.559	8.3 sec	125.0 ft
H	.703	12.7 sec	33.3 ft

he delay before beginning a secondary task was also measured on the IFF switching task, but this time at 60 degrees of bank to make the controlling task more difficult and amplify any reluctance to leave it. Notice the similarity between the two tables.

PILOT	DELAY BEFORE BEGINNING TASK	AVE. TIME FOR TASK	AVE. ALTITUDE DEVIATION
A	.13 sec	13.0 sec	300.0 ft
D	.50 sec	10.3 sec	83.3 ft
C	.80 sec	7.0 sec	40.0 ft
B	.83 sec	9.0 sec	117.0 ft
G	.90 sec	6.7 sec	25.0 ft
E	1.20 sec	10.7 sec	66.7 ft
F	3.23 sec	9.7 sec	33.3 ft
H	4.20 sec	15.3 sec	10.0 ft

If we drew a line through the middle of each table to separate the highs from the lows, we'd find the same pilots grouped together in both experiments. I grouped the pilots just that way and then examined their performance across the full gamut of tasks. The results were meaningful.

Let's call the group that had a low percentage of time on the main instruments and a short de- before acting the Low Group and the other up the High Group. On thinking tasks—computing time to bingo fuel and fuel/distance—the Low Group's average altitude deviation was 262.5 feet, the High Group's was only 84.3. On long duration tasks—using the checklist and the letdown book—the Low Group averaged a deviation of 207 feet; the High Group, 126.3 feet. The same trend held true for medium duration tasks like changing UHF and IFF frequencies or weapons switches: Low Group—71.1 feet; High Group—36.9 feet. Only on the short duration task of switching TACAN channels did the Low Group outperform the High Group by averaging an altitude deviation of 16.6 feet compared to the High Group's 33.3 feet. On the TACAN task, the Low Group took significantly less time to do the task. On the other tasks, time differences were not significant; but altitude differences were, and they favored the high group.

All of these experienced single-seat A-10 instructor pilots used an incremental approach in handling secondary tasks. But the proportion of time spent on the main instruments—the vigil—and the delay before beginning the secondary task—the distraction—varied. And for the most part the effectiveness of altitude control varied with it. These preliminary results suggest that pilots should try to keep an incremental approach but that more time should be devoted to the vigilance task. And pilots should delay before beginning a secondary cockpit task. One delay technique that was often used was to repeat the instruction slowly before executing it.

When pilots did mental tasks, they also displayed another behavior pattern that I found surprising. The task really only required a glance at the fuel gauge, followed by calculations that could be done while watching the main instruments. But many of the pilots continued to look at the fuel gauge during the calculation when, in fact, the fuel gauge never changed and, indeed, the pilots knew it wouldn't change. One pilot became so totally engrossed in his figuring that he let his altitude change 900 feet before he corrected.

Of course, this experiment was conducted in a simulator; the results are only as valid as the simulator's ability to reflect the actual airplane. But the indications are that our strategies are the key to maintaining vigilance while handling distractions. We ought to devote more time and effort toward developing the right strategies. After all, in our business vigilance is a matter of life and death.

TAC tips

INTEREST ITEMS,

Concentration, up and locked

The F-5 and the F-4 passed head on. Both pilots turned left. The F-4 pilot, as he made a slightly nose-high turn, lost sight of the F-5, which had raised its nose much higher. The F-5 pilot then talked the eyes of the F-4 crew back onto him. They spotted him at eight o'clock high, maneuvering toward six o'clock.

The F-4 increased bank angle and G to keep the F-5 in sight as it moved toward six. Seeing that the F-4 was nose low and approaching 12,500 feet, the F-5 pilot called "Knock it off" to keep the fight from going out the bottom of the area. But the F-4 crew didn't hear his call; they continued to roll and increase G as the F-5 crossed to deep six o'clock. Then the F-4 pilot began a hard pull into the F-5, causing the Phantom's nose to drop even further.

At 70 degrees nose low and high airspeed, the F-4 pilot recognized the attitude he'd gotten into. He pulled back on the throttles and the stick, finally recovering from the dive at 3,500 feet. The G-meters in both front and back seats showed 10½ Gs. The crew did a controllability check and then made an uneventful, but thankful, landing. On the ground they found the left flap buckled and an engine mount cracked. The left engine had to be overhauled.

The mission had been a one-versus-one BFM upgrade sortie for the F-4 aircrew, and they did learn a lot on the mission. But the lesson is an old one, and there are easier ways to learn it. The problem is the same as the old target-fixation syndrome. It can strike both the shooter and the shootee, air-to-air as well as air-to-ground. The only fix we've found is to know that the danger is there and to force ourselves to look around and cross check. Otherwise, our attention can get so locked up, we won't even hear the knock-it-off call that's intended to save us.

Think ahead

The Brewers were playing the Yankees on the tv game of the week in the recently concluded baseball season. In the last of the eighth, the score was tied, and the Brewers had a runner on first with nobody out. The batter tried to bunt but popped the ball up. While the baserunner dove back into first base, the Yankee first baseman caught the popup.

The announcers discussed whether the first baseman wouldn't have made a better play if he had intentionally dropped the ball and then thrown to second to get the lead baserunner, who had great speed and was an effective base stealer. They agreed that would have been a better

play. But Joe Garagiola pointed out that the first baseman couldn't have made a play like that on the spur of the moment. "You've got to have that play in mind before the ball is hit;" Garagiola said, "when the ball is in the air, you don't have time to think up the play."

Of course he's right, and the point is even more important in flying. If you haven't thought about a potential problem while you're on the ground, you're not likely to come up with the ·t play when you're in the air. So when you l these stories, put yourself in the other aviator's place. In the same circumstances, what would you have done? What will you do next time?

By the way, Milwaukee won the game. The baserunner used his speed to break up a double play on the next hit ball, leaving a man at first who later scored the winning run.

"It's just a cold"

Cold season is beginning again. Some of us are unlucky enough to suffer in the summer, but most of us get our colds in the cooler weather. To welcome back the cold season, here are two stories about what a cold can do to an aircrew member:

A radio operator on one of our larger airplanes had a cold. But he seemed to be able to valsalva normally, so he decided to stay on the flying schedule. During climbout he experienced some discomfort, which increased as the flight pro- ssed. The rest of the crew knew about his , and they asked him about his condition. Although he felt pain, he said he was working it out. So the crew didn't abort the mission to seek medical help.

Later, on the return leg, the radio operator began to bleed from his left ear and the left side of his nose. After landing he was hospitalized. The flight surgeon diagnosed the cause of the bleeding as a double sinus block and an ear block which resulted in a perforated eardrum.

In the second incident, a fighter pilot had been experiencing nasal stuffiness. On the day he was scheduled to fly, his nose didn't seem as stuffy. He could valsalva easily, but he did have a runny nose. He sprayed his nose with a nasal spray and then launched in his single-seat fighter on an out and back.

The first leg of the mission went fine. He spent about four hours on the ground before his return flight, and during that time he had no problems. As a matter of fact, his symptoms had decreased. On the flight home he cruised at 16,000 feet. The cabin altitude never got above 10,000 feet. Dur-

ing an en route descent at 400 to 800 feet per minute, he noticed pressure, then pain, in the left frontal sinus area. As he tried to level off at 4,200 feet, the pain was sharp enough to cause him to lose 200 feet of altitude.

The pilot declared an emergency and sent his wingman to a chase position. Then he flew a very gradual descending approach at 100 feet per minute to a straight-in landing. After landing, he was taken to the hospital and examined by the flight surgeon, who found a hematoma in the left frontal sinus interior aspect.

The pilot had a misconception about the use of nasal spray. He thought it was OK to use the spray before flight to insure clear ears and nose. Someone had once told him that aspirin and nose spray were the only two medications he could take and still fly. He didn't realize that nose spray wasn't supposed to be used to get him "up" but in an emergency to get him "down" from flying.

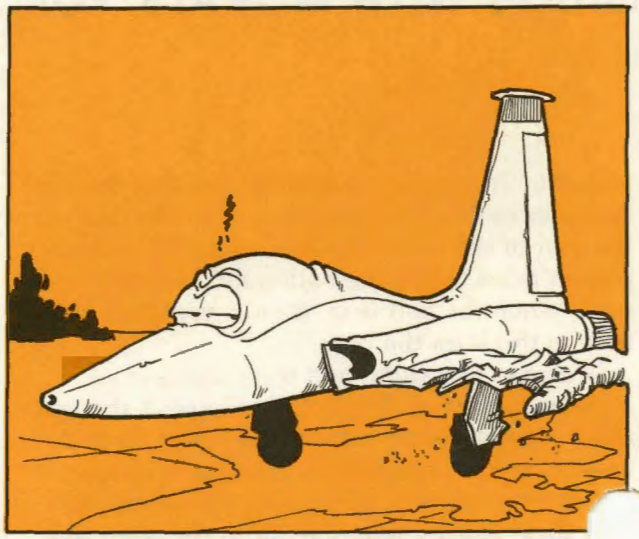
Maybe we should reassess our own personal criteria for grounding ourselves. After all, how good a job of flying can we do when we're in pain? And how many missions are worth serious injury?

"Who has the lead?"

By Col Gary Lape
TAC Flight Safety

Here's a lesson learned in another command that we can benefit from for free. Picture a formation takeoff, solo student in lead aircraft; wing aircraft is dual with an IP in the pit. The solo lead realizes a navigational system malfunction during departure, kicks the wingman out to route, and gives a visual signal for position change. The wingman IP takes the stick from his front seat student, gives a head nod acknowledging taking the lead (he thinks he remembers giving a head nod), and starts moving out and forward to a lead position. The original lead, however, can't remember seeing the head nod, is uncertain about the wingman seeing the signal, and assumes that he still has the lead. All three crewmembers, thinking they are in the lead aircraft, now divert their attention inside the cockpits. Got the picture?

The result was predictable; dinged wings up to 1 ½ feet in from the wingtip, a few anxious sec-



onds as they "disengaged," and some heavy breathing as they assessed the damage and accomplished controllability checks.

Formation flying is our bread and butter in TAC. Positive command of the flight and an absolutely clear understanding of who has the lead is critical; assumptions can be very dangerous. Positive acknowledgment of directive signals is essential; if in doubt, signal and ask again. And remember rule number one: "Don't run into lead." I can't remember rule number two; but, somehow, it just doesn't seem as important.

[Editor's note: Shortly after Colonel Lape wrote this, we got word of a night mid-air between two F-4s. The F-4s had also just changed lead when number 2 drifted into number 1. They both landed OK; but number 2 was missing a foot and a half of left wingtip and stabilator, and number 1's right engine rolled back to 80 percent rpm after swallowing number 2's wingtip. We don't know the details yet, but the incident seems to bear an uncanny resemblance to the one Colonel Lape wrote about. Obviously, it ca happen to us, too.]

DUTY OFFICER

By Lt Col Harry C. Stevenson
81st TFW

Jake tightened up the turn as the "enemy" fighter closed into gun range. At 250 feet AGL he really didn't have a lot of places to go. *That beast can ·re turn* he thought. *Well, get of the attack plane and turn me more to force the overshoot, and maybe Lead will have a shot at him. Wonder where the second bad guy went? Uh-oh—*

Jake shoved the stick forward and toward the opposite corner of the cockpit. Nothing happened! The bank angle slowly increased and the nose dropped in a rather mushy manner. The sides of the canopy, and now the top, began to fill with a brownish green color.

Uh-oh, Jake's brain responded. *Time to get out of here.*

The nonresponding stick and throttles were released and both seat handles raised.

Peter was tired. It had been a long shift as duty officer, and no matter how important the was, on occasion it still him down.

I will be glad to get a break, Peter sighed. *Wonder what the weather guys will . . . .*

A buzz from another duty officer cut off his thoughts.

"Sir, Aviation Branch, I have a fighter in trouble that I think you need to see."

"Okay," replied the weary duty officer. "Put it up."

A bright image appeared before Peter. There was Jake's fighter, frozen in a rolling right turn, nose dropping and the soil not very distant. The canopy was gone and Jake could be seen sitting in the seat as it started up the rails. "Up" being a relative term because the vector was now below the horizon.

Ouch! thought Peter as he examined the scene. "Personnel Division, who is the pilot?"

"Sir, that's Jake Meyers, captain, young jock but not a bad one," replied a voice.

"Is he on today's roster?" Peter snapped.

"No sir."

"Okay, Technical Branch, where is he in the envelope?"

"Well, sir, if you plot all of the vectors and throw in the reliability figures, it puts him out in the grey area with nothing promised."

Great, thought Peter to himself. *Another ambiguous answer from a statistician.*

"Is that a hard yes or a hard no?" he inquired.

"That's a hard maybe," replied the tech rep. "I think that's why Aviation referred it to you, sir."

Peter paused to look at the image one more time. He made his decision. "Alright, let him go. And Technical Branch, let's show a touch of class and make it a neat one. No side effects or complications, copy?"

"Yes, sir!"

Jake's seat continued up the rails and cleared the aircraft. The chute began to unpack and Jake caught a glimpse of the ground. He was face down and low. Very low! He felt a sharp tug on the harness and then saw the seat pass his left foot. WHUMP

Just as he straightened out, Jake hit feet, knees, and oxygen mask in fifteen inches of freshly plowed soil. Four feet beyond him, his ejection seat made a foot deep crater in the loose black dirt. Two hundred feet further away,the former fighter impacted almost vertically and created a decent hole but amazingly little fireball.

Jake rolled over in the loose soil, released the fittings to his chute (that had never fully deployed) and wiped the dirt from his face as he took off his helmet. His Lead and the two "enemy" fighters circled the smoke column, hopefully awaiting the call that soon came from his survival radio.


Saint Peter called up the scene again as he briefed his replacement duty officer. "Pretty fair job by Technical Branch," he mused. "But I wish those aviators wouldn't put me in the position of having to make that decision."

AIRCREW OF DISTINCTION

Capt Charles J. Freniere
Maj John L. Queiser
Capt Lester D. Worley
SSgt Letch I. Chadwell
964 AWACS, 552 AWACW, Tinker AFB, OK

On 10 June 1983, an E-3A was en route to RAF Mildenhall. The flight crew consisted of CAPT CHARLES J. FRENIERE, aircraft commander; MAJ JOHN L. QUEISER, copilot; CAPT LESTER D. WORLEY, navigator; and SSGT LETCH I. CHADWELL, flight engineer. It was night as they approached their destination, and they began a TACAN approach.

While they were being vectored for the approach, the crew smelled fumes. They could see smoke in the dimly lit cockpit. Captain Freniere told the crewmembers to don their oxygen equipment as he began going through the emergency procedures. Immediately after donning their oxygen masks, Captain Worley and Sergeant Chadwell saw an open flame burning behind the flight engineer's panel. So Captain Worley began fighting the fire with chlorobromomethane (CB) extinguishers. Sergeant Chadwell scanned his panel indicators, looking for a possible source of the fire.

The crew considered shutting down all electrical equipment—the tech order procedure for isolating fire, smoke, and fumes. But because it was night, they decided not to. The airplane was two miles from the runway, just abeam the touchdown point. They began the landing checklist while continuing to fight the fire.

Major Queiser flew the airplane as Captain Freniere directed systems analysis and fire fighting. Captain Freniere declared an emergency with approach control. Since the weather was good, they opted for a VFR approach to get on the ground sooner than the TACAN approach would have allowed.

Sergeant Chadwell was venting the cabin using the forward outflow valve. By the time they turned onto base leg, Captain Worley had emptied two CB extinguishers on the fire. He thought he'd put the fire out, but it reignited. Smoke and CB fumes filled the cockpit again.

Despite stinging eyes from the CB and reduced cockpit visibility because of the smoke, Major Queiser flew the airplane safely around the pattern. Since the navigator, Captain Worley, was busy fighting the fire, Sergeant Chadwell helped monitor the approach and made sure the required checklists were completed. Captain Freniere also monitored the approach and coordinated the planned emergency ground egress with the aircrew, the mission crew, and the controlling agencies.

As the airplane rolled wings level on final approach, Captain Worley again reported the fire out, but he continued to monitor the fire area throughout the landing. After safely landing the airplane, Major Queiser turned off the runway near the rescue equipment that Captain Freniere had called for. All 25 people on board safely evacuated the airplane.

The crew's professional competence, crew discipline, and crew coordination have earned them the title of Tactical Air Command Aircrew of Distinction.

WEAPONS WORDS

Balancing act with a BDU

A weapons specialist on a load crew was loading a BDU-33D/B onto a TER on an F-4. He had his left hand on the bomb near the fin while he tried to insert the overcentering tool to make sure the bomb was locked on. But as he inserted the tool, the bomb fell. Holding it by the tail and caught by surprise, he was unable to keep the bomb from hitting the ramp. He still had his hand around the bomb when the nose struck the pavement at about a 60-degree angle, shearing the plunger assembly from the bomb. Fortunately, the spotting charge didn't fire. The safety block was still installed.

It's all a matter of balance. The bomb weighs only 25 pounds, and ordinarily the crewmember should have been able to support the bomb with one hand—if he had been holding it nearer the front where most of the weight is concentrated. But he wasn't mentally prepared for the bomb to drop. His holding on was more of a token ritual than a real preventative measure, so he was unable to stop it when it fell.

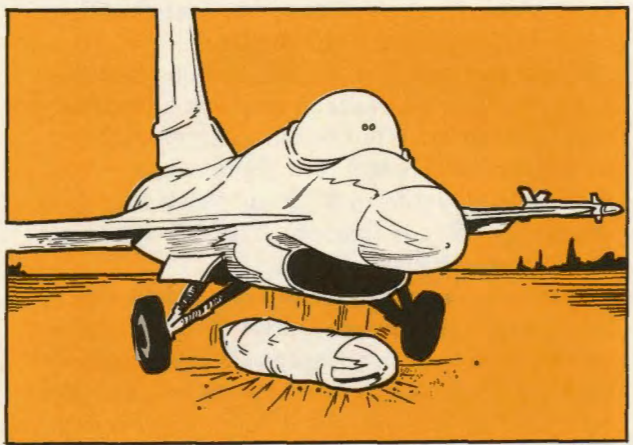
". . . But I thought you took care of it"

A load crew was sent to an F-16 to conduct a function check and a gun lube. When they arrived at the airplane, the crew chief began the procedures for the gun lube, the number 2 crewmember did a walkaround inspection, and the number 3 crewmember prepared the missile rails and pylons for the function check.

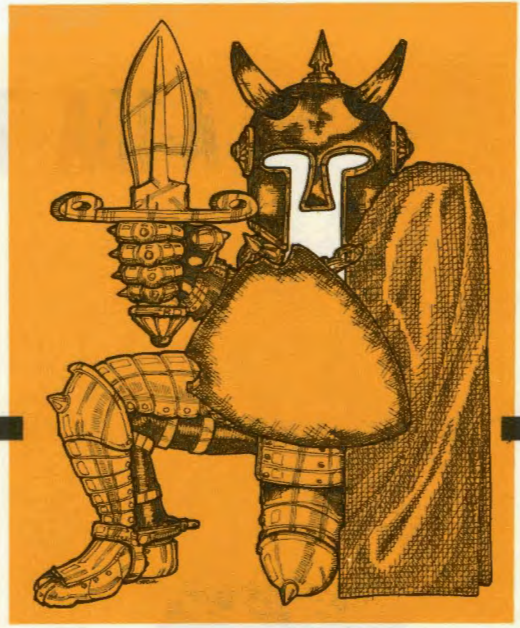
During his walkaround, the number 2 crewmember noticed that the centerline station did not have a safety pin in it and its impulse cartridges were still in place. He told the crew chief and the number 3 man about it. The number 3 man picked up a speed wrench, so the number 2 man assumed that number 3 would disarm the centerline. Number 2 continued his walkaround.

Number 3 actually had gotten the speed wrench for the crew chief to remove the gun port. He and the crew chief continued to work on the gun, assuming that number 2 would disarm the centerline station.

After number 2 finished his walkaround, the crew chief told him to take over the gun lube. The crew chief and number 3 then conducted th function check, with the crew chief in the cock and number 3 operating the tester. The function checks on stations 1 and 3 were completed with no problems. Then the crew chief called up station 5—the centerline—on the stores management system. When he pressed the weapons release button, the 300-gallon centerline fuel tank jettisoned and crashed to the ramp.



Fortunately, no fire resulted. Damage was limited to the tank. But don't you suppose things would have gone more smoothly if a few more questions had been asked and a few less assumptions made?

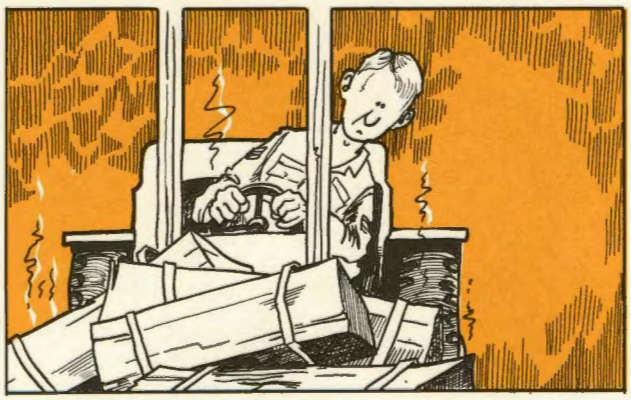


Teamwork

A munitions storage crew was moving some SR116 rocket motors from one storage site to another. During the move, they discovered that the containers weren't marked to show the nose end of the rocket motors. So they called for a munitions maintenance crew to correct the discrepancy.

The rocket motors were taken off the pallets, and the containers were opened to determine the direction the motors were pointed. Then the containers were marked properly and rebanded. The maintenance crew placed the motors back on the pallets, but they left it up to the storage crew to secure the containers to the pallets with tiedown straps.

While his crew chief was inside the building and unable to see him, a member of the storage crew tried to position a forklift under a pallet of rocket motors. When the tines of the forklift slid into the pallet, they hit it, shifting the pallet. Since the rocket motors weren't tied down, the rear stack of four motors fell. The drop distance



was greater than the limits, so the motors had to be shipped to depot.

Can you imagine how short a pro football quarterback's career would be if he got into the habit of starting the ball in play before his offensive line was ready? A team just isn't a team unless it works together. And a crew isn't a crew when it's made up of individuals who don't operate as a team. A good crewmember waits for the other members of the team to get in place before he starts. Otherwise, the so-called crew is going to be about as successful as a quarterback without an offensive line.

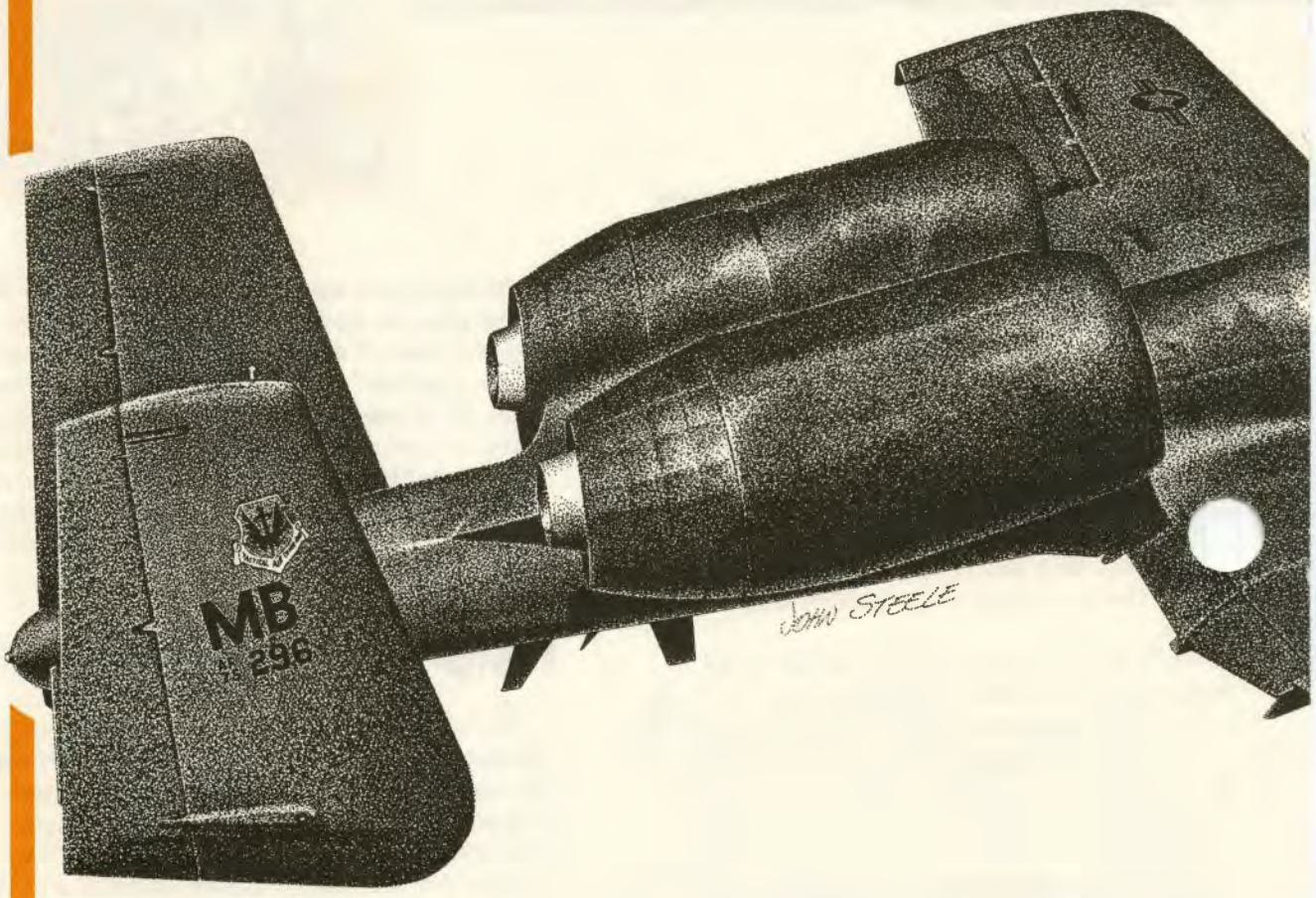
Help or hindrance?

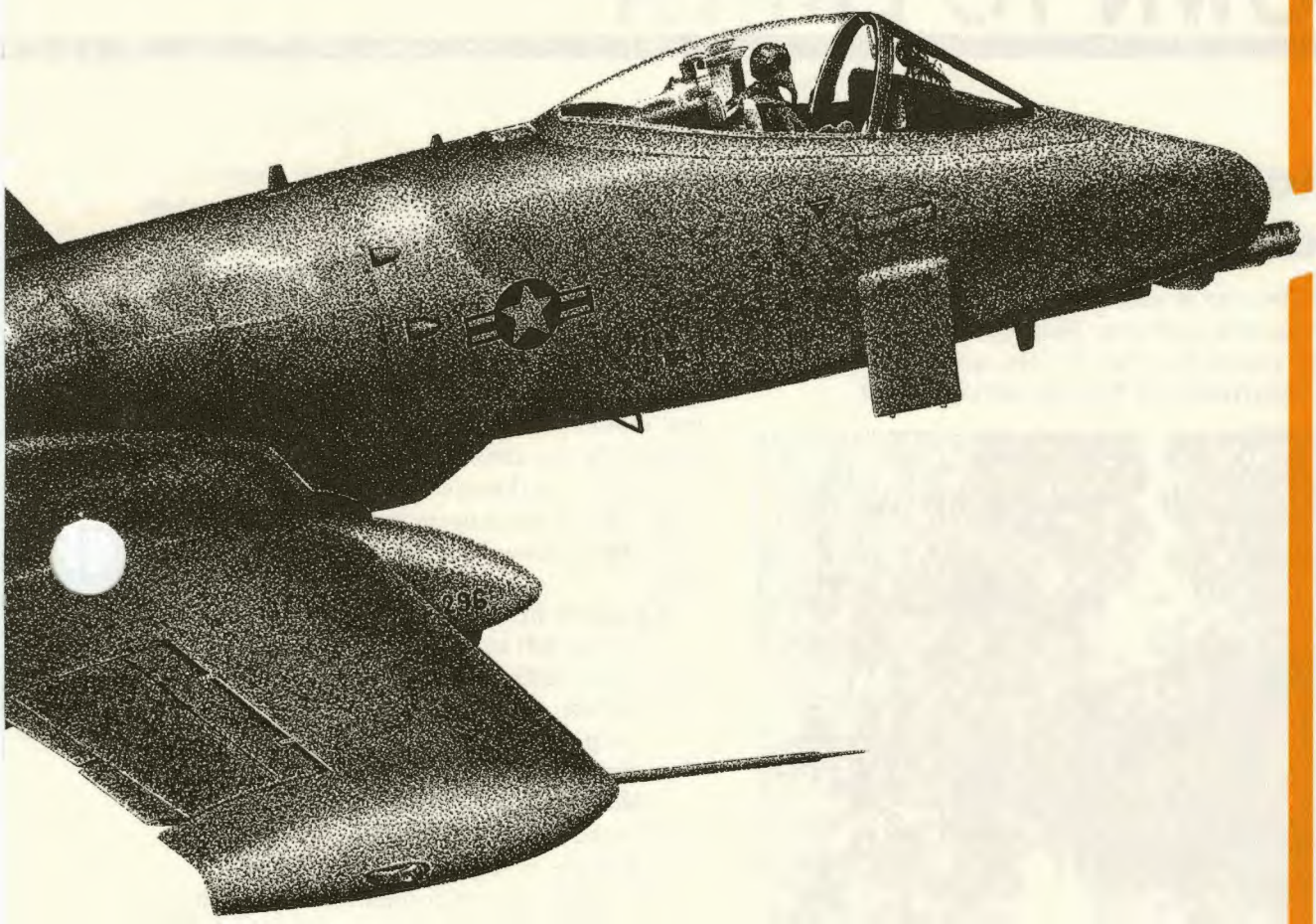
A load crew had just completed an integrated combat turn on an F-15. They began to download the airplane. To help the others get the safing and preparation steps of the download done, the load crew chief disconnected the AIM-9L umbilical from station 8A and installed the shorting cap.

After the F-15 was safed, the crew continued with the download. Station 8B was downloaded, followed by 8A. But when the missile was removed from station 8A, the load crew found that the umbilical had been sheared.

The crew chief had not disconnected the umbilical retainer assembly. Because he had disconnected the umbilical from the LAU-114 and installed the shorting cap, the other crewmembers assumed he'd finished the job; but he hadn't. In trying to help the others, he actually had disrupted the trained pattern of procedures for the other crewmembers. His intentions were good, but his help turned out to be a hindrance.

A-10A THUNDERBOLT II

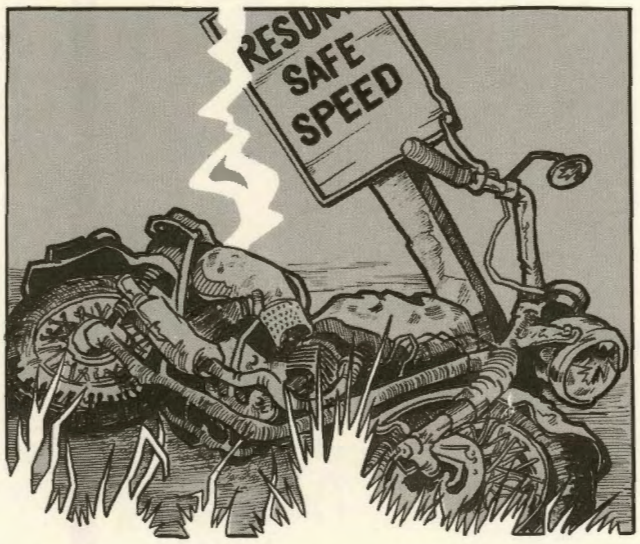




DOWN TO EARTH

What causes motorcycle deaths - a research study

Thousands of motorcyclists are killed or seriously injured each year because they are not clearly visible to other drivers, according to a U.S. Department of Transportation report.



The report notes that the use of safety helmets provides motorcyclists with the most significant protection against critical head and neck injuries, and that keeping the vehicle's headlamps on during daylight and wearing high-visibility garments, particularly yellow clothing, *could* help reduce the number of serious accidents.

Conducted for the department's National Highway Traffic Safety Administration by the traffic safety center of the University of Southern California (USC), the study also points out that motorcycle riders who are inadequately trained in the safe operation of their vehicles are involved in a number of motorcycle accidents.

The findings are based on an analysis of detailed, in-depth investigations of 900 motorcycle accidents in the Los Angeles area plus a review of police reports of 3,600 motorcycle accidents. More than 2,000 cycle riders were interviewed for the USC study.

The study painted a grim portrait of the typical motorcycle accident victim. The accident-prone rider is usually a young male with little experience on the cycle he is riding, has had little formal motorcycle instruction, is unfamiliar with the roadway, and may not be licensed to ride.

Other key findings in the study show that:

— In the 900 investigations, 78 percent of the riders who suffered fatal injuries were not wearing helmets.

— Helmets do not limit the hearing or vision of motorcyclists in precrash conditions.

— More than half of the riders had less than six months' experience on the motorcycle involved in the crash.

— In multivehicle accidents, 65 percent were caused by drivers of cars or other vehicles. In single vehicle accidents, motorcyclist error was the primary cause.

— Alcohol consumption and drug use by the motorcycle rider was present in almost 12 percent of the accidents. Drug or alcohol use was noted in about 43 percent of the fatal accidents.

—More than 50 percent of the cyclists involved in accidents were between the ages of 15 and 25.

— Vehicle failures accounted for some 12 percent of the single vehicle accidents. Nearly all of these accidents were attributed to faulty tires.

— The potential for fires from fuel spills was present in about 62 percent of the accidents.

The study reported that the use of gloves and

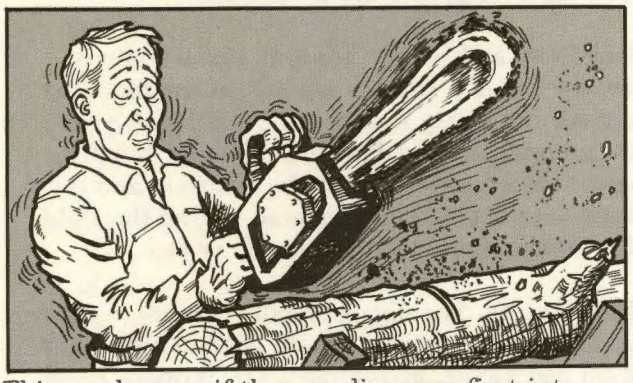
other heavy clothing is clearly effective in reducing minor or moderate injuries. It also pointed out that those riding without eye protection are involved in more accidents.

TAC has had 11 motorcycle deaths from January through September this year. Helmets were used in ten. Alcohol was a factor on the part of the motorcyclist in eight. Four had no formal hands-on training. And all but one were 25 or younger.

Adapted from Air Force News Service

Chain saws and kickback

Kickback is the major cause of chain saw injuries. Kickback occurs when the saw unexpectedly jumps up and back toward the operator.



This can happen if the saw digs nose first into the log, if the nose of the bar touches another object, or if the wood shifts and pinches the chain in the cut.

Kickback can be reduced. The best way is to ke sure at least one of the three antikickback ices is on the chain saw—the safety tip, safety chain, or chain brake.

A safety nose tip keeps the guidebar from coming in contact with any object near the top of the chain guidebar. But a safety nose tip is not as effective for pinch kickback, or when the chain on the top of the guidebar binds in the cut or hits an obstruction in the wood. A safety chain reduces the occurrence of kickback and minimizes the resulting force. It has a different cutting pitch and fewer cutting links. A safety brake stops the chain after a kickback.

In addition to the three safety devices, the Consumer Product Safety Commission says there's more you can do:

— Don't touch the tip of the saw to any object while the saw chain is running.

— Always hold the chain saw firmly with both hands.

— Boaring cuts require burying the nose or the tip area of the saw into the wood being cut. This could cause kickback, so leave boaring to the professional.

— Use wedges to avoid pinching the bar when cutting larger pieces.

— Avoid cutting limbs above your mid-chest height.

— When possible, use a sawhorse or similiar device to support and hold.

Ten most common driving errors

After a long, in-depth study of traffic accidents, a university research team came up with what they believe are the ten most common driver errors.

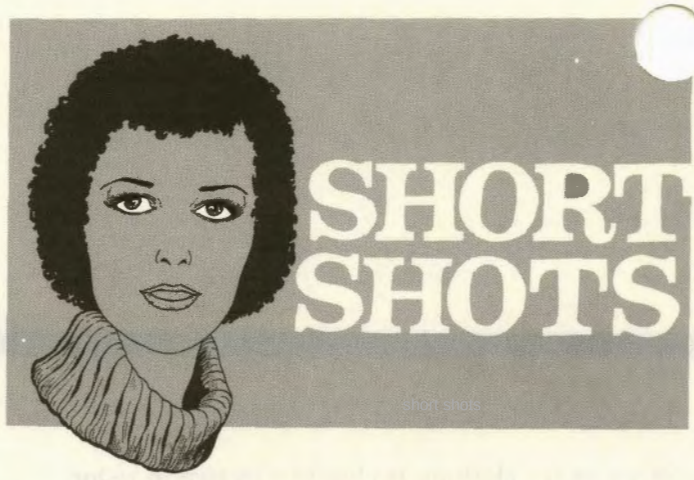
DOWN TO EARTH

In the study, human errors probably caused 92.6 percent of the accidents, or at least increased their severity. In another 5.3 percent, human error possibly contributed to the accident.

The top ten driving errors, in order of frequency were:

- Improper lookout, such as pulling into a street from an intersection, alley, street, or driveway without looking carefully for oncoming traffic.
- Pulling out to pass without checking for traffic in the passing lane.
- Pulling out of a parking space without looking back for oncoming cars.
- Excessive speed.
- Inattention.
- Improper evasive action, such as no attempt to steer around an impending crash or an attempt to steer that was unsuccessful because brakes were slammed and front wheels locked.
- Internal distraction such as a crying baby, fighting children, adjusting the radio, citizens band radio, or tape player.
- Inadequate defensive driving techniques. Sometimes following the rules of the road isn't enough.
- Unjustified assumption, such as turning across two lanes of oncoming traffic, and assuming traffic is not coming in one lane when a driver makes way for you in the other; assuming an oncoming vehicle with turn signals on will turn before it reaches you; assuming another vehicle is required to stop or yield at an intersection when it is not; assuming another driver will stop or yield even though he does not have a sign.
- Improper maneuvering or driving the wrong way on a one-way street; turning from the wrong lane or proceeding straight in a turn lane; and overcompensating, accelerating or braking too fast, or turning too quickly.

—Courtesy Air Force News Service



Jogging May Be Hazardous to Your Health. Jogging near auto exhaust fumes or in a polluted city might expose you to high amounts of carbon monoxide. Researchers at New York Hospital—Cornell University Medical College had a group of nonsmoking joggers run along a street in the city while another group of nonsmokers stood near the street. After half an hour, both groups had their blood tested for carbon monoxide. Although both groups showed raised levels of carbon monoxide, the level in the joggers was much higher—similar to smoking one half to one pack of cigarettes a day.

Contact Lenses. Don't wear them if you're exposed to chemical fumes, vapors or splashes, extreme heat, molten metals, or in a highly particulate atmosphere. And remember, they're no substitute for proper eye protection.

Seat Belts and Small Children. Some states allow the use of a regular lap belt in the rear seat of a car if a safety seat is not available. If you are allowed to use a lap belt, it should be pulled across the child's hips, not the stomach, and the shoulder strap should be placed behind the child if it makes contact with the neck or face.

Bad Habits. The biggest health threats to Americans no longer come from dreaded diseases, but from bad habits, according to Dr. William Foege, the director of the National Center for Disease Control. Smoking, excessive drinking, poor diets, lack of exercise, and failure to wear safety belts have all been causes of premature death in adults. Why? Because "We feel immortal until something happens."

HIDDEN POTENTIALS IN THE INTAKE

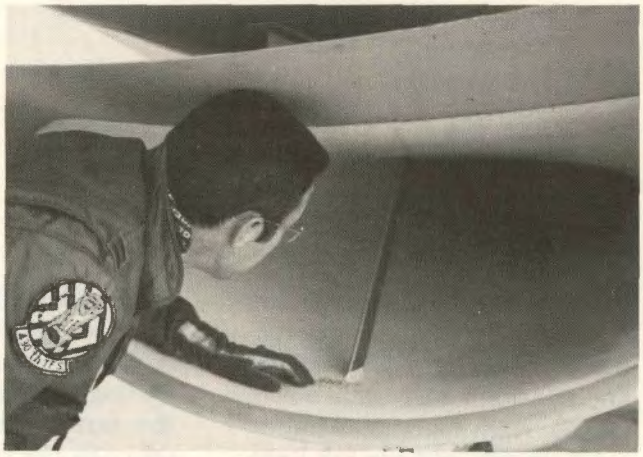
A recent CAT I FOD incident that happened to an F-16 brought to light a situation that could be repeated at other outfits. Two individuals had just crawled the intake; one dropped a set of ear muffs near the engine face. The pilot's arrival was on the heels of that inspection, so he was aware the intake had just been looked at.

The pilot's prelaunch intake inspection consisted of a low-angle view from the left side of the intake lip (see photo 1). This action, while providing maximum light to see the fan blades, allowed him to miss the ear muffs lying in the valley created by the curve in the intake structure. Had he followed up by positioning himself to the top center of the intake lip (photo 2), he would have had quite a surprise (photo 3).

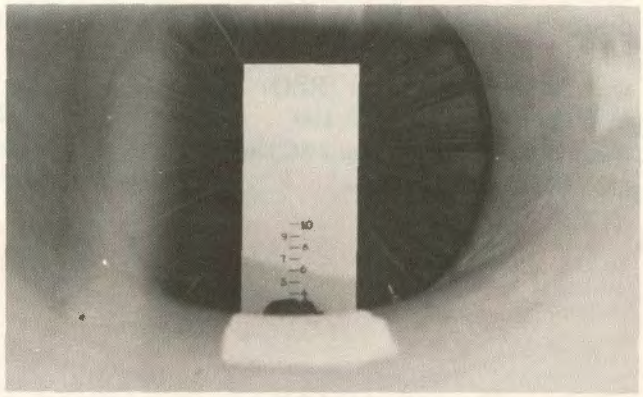
Unfortunately, even under the best conditions, small items left directly in front of the engine face simply won't be seen from the intake lip (photo 4). The pilot can minimize the chances of ...esting hidden items by being aware of the po...ntial and using both positions to check the intake.

The most reliable protection is thorough intake inspections by the crew chief and pilot, followed by strict accountability for all tools and work articles. Obviously, a strong consolidated tool kit program and good work discipline by individuals are at the heart of this and any other FOD prevention program.

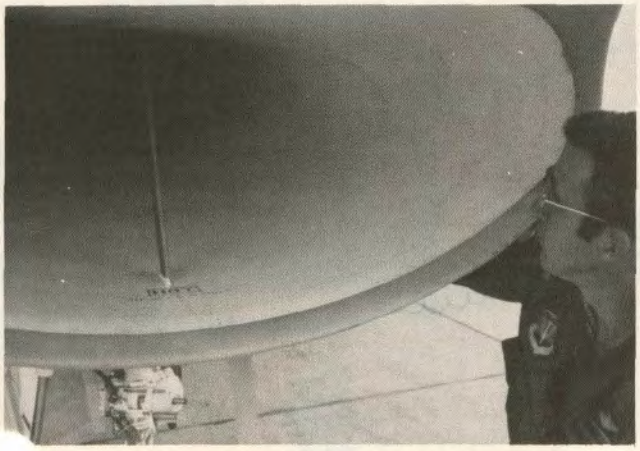
--Courtesy of 474 TFW



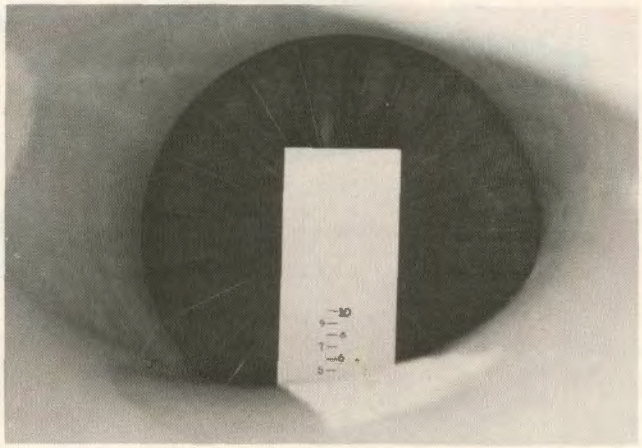
2. Position to give maximum view of inlet area.



3. View from top center position. Note the ear muffs.



1. Position to make best use of available light to check fan blades.



4. View from low side angle. The ear muffs are in the intake but can't be seen.

THE CRIPPLED EAGLE

limping home on one talon

In the overhead pattern for landing, an F-15 pilot lowered the gear handle. The nose gear and left main gear came down, but the right main gear indicated unsafe, and the red light was on in the handle. The pilot cycled the gear handle: the indications stayed the same. He made a low approach. The runway supervisory officer (RSO) in Mobile reported that the right main gear was up and the gear doors were closed.

The pilot raised the gear again and switched to approach control to fly a radar approach. During that approach he cycled the gear four times with no effect on the right main gear. He also tried the emergency gear extension system four times unsuccessfully. Each time, the gear handle wouldn't stay out after it was released by the pilot. He pulled the landing gear circuit breaker with the gear handle down, waited 30 seconds, and pushed the circuit breaker back in. That didn't work either. Lowering the gear while pulling G and yawing the airplane also had no effect.

The pilot flew a low approach from the radar pattern. Mobile confirmed that the right main gear was still up and locked. Fuel remaining only allowed for one more pattern. The pil pulled up to downwind and cycled the gear one more time

...o avail. He tried emergency ...tension again, but the right main gear refused to budge. So the pilot decided to land with the gear up.

He dropped the tailhook, planning to engage the arresting gear, and extended his pattern to fly a two-mile final. He flew final on speed and touched down 500 feet past the runway threshold. At touchdown the right wing dipped slightly. The pilot quickly corrected and lowered the nose. But the wing dip had bent the tailhook 45 degrees to the left. When the airplane crossed the arresting gear cable, the bent tailhook's point bounced off the edge of a rubber cable support and skidded over the cable.

Mobile called, "Missed cable!" over the radio; but the pilot didn't go around because he ...n't have enough fuel. He ...d the wings level for several thousand feet down the runway. But as the airspeed bled off, the right wing settled to the runway. After about 4,000 feet of landing roll, the right stabilator hit the runway. Using rudder and nosewheel steering, the pilot kept the airplane on the runway for another 2,000 feet or so. But then the right stabilator and wing tip slid off the right side of the runway into the dirt.

As the airplane left the runway, the pilot shut the engines down. The F-15 began skidding sideways on the nose gear, left main gear, and right stabilator, turning to the right until it was heading 140 degrees away from the runway heading. The left main gear dug into the soft dirt, and the airplane rolled up onto the left wing tip. It finally came to a stop, resting on the left wing tip, the left main gear, and the nose gear.

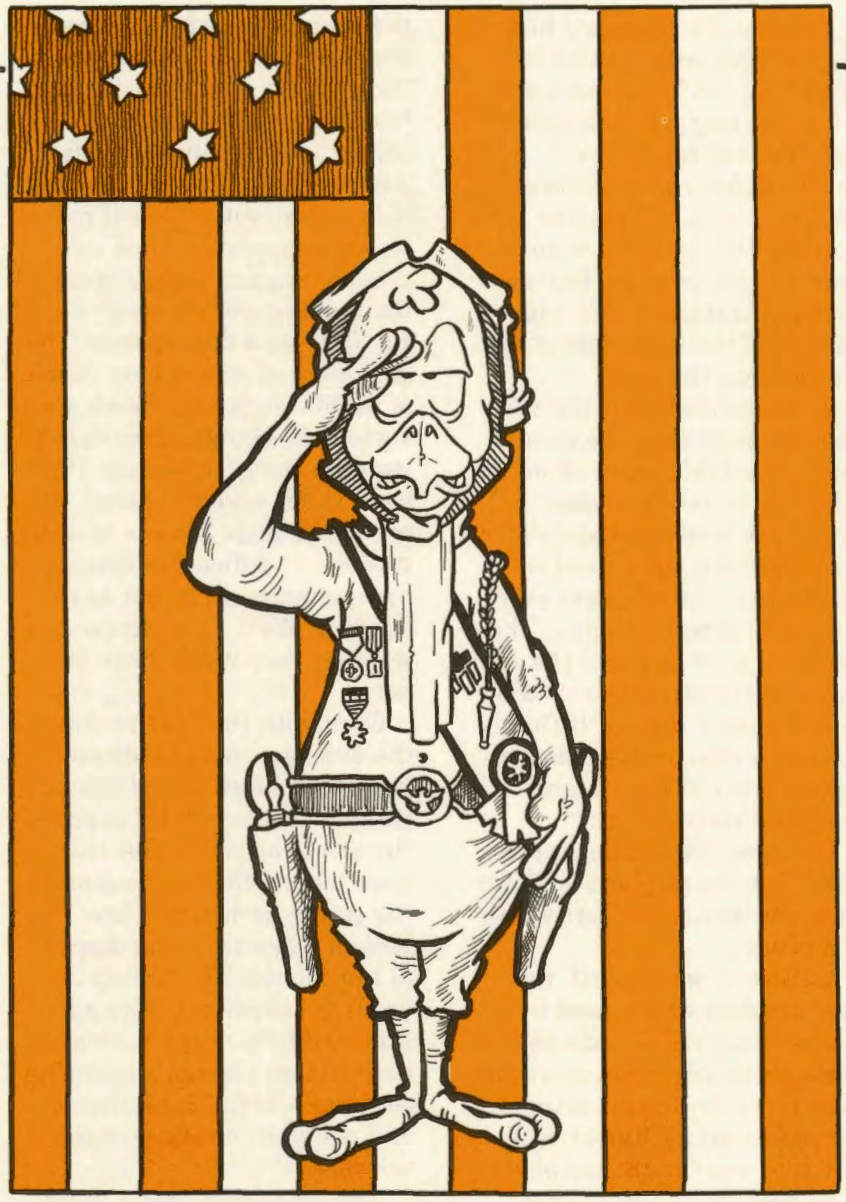
The pilot climbed out uninjured, but the airplane suffered a quarter million dollars worth of damage.

As best as we can tell, the gear problem was caused by a phenomenon called blow-by. Pressurized and unpressurized lines in the hydraulic actuator are separated by slipper seals. The type used in this airplane have been known to deform when pressure is applied to the actuator, allowing pressure to leak around, or "blow-by," the seal to the return line. The pressure loss at the actuator can be significant. The right main landing gear doors on this airplane were excessively tight; reduced hydraulic pressure wouldn't open them.

Actually, the airplane had given a warning that all was not well with its landing gear. Three sorties before this one, the same right main gear did not come down when the handle was lowered. But on that occasion the pilot recycled the handle and got a good indication, landing uneventfully. After landing, that pilot talked things over with ops and maintenance supervisors and decided to request an ops check of the landing gear instead of writing it up as a discrepancy. The gear worked on the next couple of flights, so the ops check was signed off. Maintenance didn't work on the gear because they were never asked to—until after the mishap. Since a blow-by problem is difficult to detect, maintenance might not have found it. We'll never know whether they would have or not.

Even with the gear problem, the damage would no doubt have been much less if the airplane had successfully engaged the arresting cable. But the hook failed. The hook's centering spring turnbuckle had broken when the wing dipped at touchdown. The rolling and yawing movements were aggravated by a rough runway surface that started a bouncing oscillation of the hook shank and resulted in failure of the turnbuckle.

The possibility that a wing dip on landing could result in a missed cable is a point worth noting in case one of us ever has to land with a main gear up. However, we might be able to reduce the likelihood that we'll have to land gear up if we remember that requesting an ops check is not the right way to record a serious discrepancy. Our job as aircrews is to describe, not prescribe. So let's stick to writing up what went wrong, not just giving our ideas on how to investigate it. →



FLEAGLE SALUTES--

Capt Thomas P. Hrynyk, Wing Safety Division, 347th Tactical Fighter Wing, Moody Air Force Base, Georgia. Captain Hrynyk's investigation and recommendations highlighted the F-4 afterburner fuel pump hazard. During his tenure in wing safety, the 347th had the lowest mishap rate of all regular Tactical Air Command F-4 units. On-duty mishaps for the wing dropped 20 percent. Captain Hrynyk was the sole organizer and coordinator for Moody's highly successful Safety Week 1982. His efforts contributed in large part to the wing's receiving the USAF Flying Safety Plaque in both 1981 and 1982.

Capt Merlyn D. McKenney, 74th Tactical Fighter Squadron, 23d Tactical Fighter Wing, England Air Force Base, Louisiana. While climbing out after departing Cannon Air Force Base, New Mexico, on a cross-country flight, Captain McKenney noticed the right engine oil pressure fluctuating out of limits. At near maximum gross weight, he kept the engine running at idle while flying a difficult single-engine approach at high density altitude. With oil streaming over his right engine, Captain McKenney successfully landed at Cannon.

Capt Daniel E. Wright, 1st Lt Robin J. Schmaltz, and TSgt Robert A. Dixon, 507th Tactical Air Control Wing, Shaw Air Force Base, South Carolina. As crew of a CH-3E helicopter returning from a deployment, they made an emergency landing in rough terrain 75 miles east of El Paso when the main transmission lost oil. Their actions prevented injury to themselves and their passengers and avoided damage to the aircraft.

CREW CHIEF SAFETY AWARD

Sgt Leeroy Delarosa

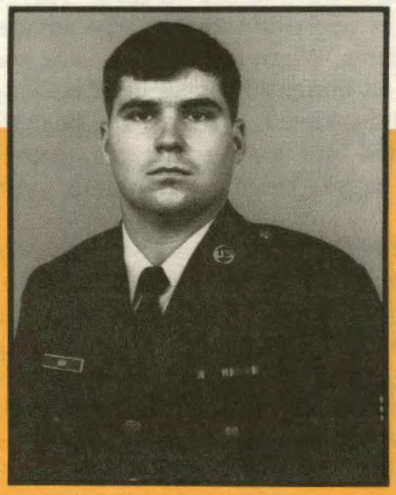
SGT LEEROY DELAROSA, 61st Aircraft Maintenance Unit, 56th Aircraft Generation Squadron, 56th Tactical Training Wing, MacDill Air Force Base, Florida, is this month's winner of the Tactical Air Command Crew Chief Safety Award.

Sergeant Delarosa pays particular attention to detail while performing his duties. One time Sergeant Delarosa was completing an intake inspection on an F-16. He didn't find any damage to the engine, but he did smell a strange odor. He asked the aircrew to shut down the aircraft because he suspected the engine had ingested a foreign object. Further inspection of the engine revealed evidence of a bird strike.

Another time, Sergeant Delarosa was preflighting an F-16 when he noticed some minor damage to one of the engine blades that had been overlooked during the basic postflight inspection. The engine was borescoped and fan damage was verified.

In both instances Sergeant Delarosa persevered in checking out his findings, and in doing so he prevented the possible loss of aircraft and lives. He has earned the Crew Chief Safety Award.

INDIVIDUAL SAFETY AWARD



SrA Fred R. Carr

SRA FRED R. CARR is this month's winner of the Individual Safety Award. He is a corrosion control technician with the 9th Tactical Intelligence Squadron, Shaw Air Force Base, South Carolina.

Airman Carr was the driver of the 10th vehicle in a 13-vehicle convoy that was moving equipment, vehicles, and supplies from Shaw AFB to Fort Bragg in preparation for an exercise. The convoy had started to move when all of a sudden a vehicle pulled in front of the convoy's lead vehicle. Realizing the potential for a chain reaction accident, Airman Carr applied the brakes to his vehicle and pulled off onto the shoulder of the road. The driver in the vehicle behind Airman Carr said that otherwise an accident would have occurred. When Airman Carr pulled out of the convoy he gave the other vehicles room to stop safely.

Airman Carr's quick thinking and actions prevented a major accident, and have earned him the Tactical Air Command Individual Safety Award.

CHOCK TALK

chock talk incidents and **INCIDENTS AND**

No JOAP, SOAP, or hope

Fifteen minutes after takeoff, the oil pressure in the F-15's left engine dropped to zero. The pilot pulled the left throttle to idle. The pressure stayed at zero, and the oil pressure warning light came on. So the pilot declared an emergency and shut down the left engine. His wingman reported that he was trailing oil from the bottom of the left engine. He dumped fuel and landed single-engine without any other problems.

Four quarts of oil remained in the gearbox, and six quarts were in the oil tank. The gearbox oil was black and contained a large amount of metal particles. When the gearbox was opened, both main oil pump idler gearshaft bearings were found destroyed. Pieces of the bearings were ingested into the scavenge pump gears and eventually caused the main oil pump shaft to shear.

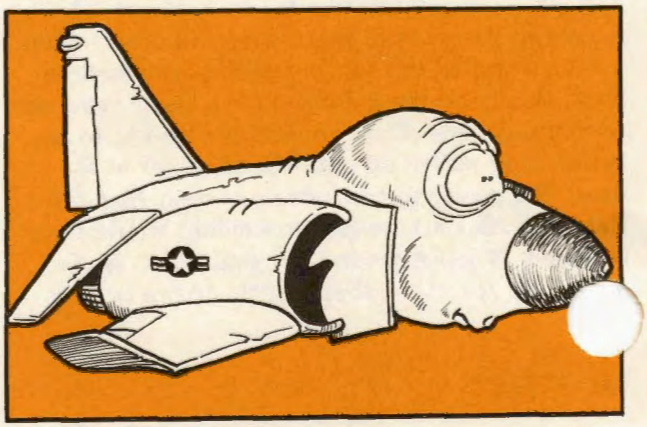
A review of the joint oil analysis program (JOAP) records on this airplane turned up some interesting information. A month earlier, the oil sample had shown an iron reading of two parts per million. Three weeks later, a week before the bearing failure, the iron reading had climbed to six parts per million. By the tech order, a second sample should have been taken because of the increase. If the second sample confirmed the trend, the engine would then be placed under surveillance. If that had happened, the bearing problem would probably have been discovered before the airplane became airborne on this sortie.

But the JOAP procedure didn't work, because it wasn't followed. The second sample wasn't taken, and the airplane wasn't put under surveillance. It's a good thing the airplane had two engines. But we can't always count on that.

FOD makes F-4 feel nose heavy

An F-4 had been written up for being extremely pitch sensitive. Troubleshooters found a leak in the tubing leading to the bellows and an inoperative venturi heater. To fix the system, they removed the venturi heater and the lower gooseneck part of the feel system piping just in front of the venturi. Removing the gooseneck required drilling out four rivets attaching the gooseneck to other piping. The leak was repaired along with two other leaks in the upper tubing section. The tubing was inspected visually and then reconnected. The aircraft was returned to service.

On the airplane's next flight, the pilot made a formation takeoff. After breaking ground, he noticed a nosedown force on the control stick. He found himself constantly trimming up until he had full noseup trim applied. As the flight accelerated, the nosedown stick force increased, leading to small pilot-induced oscillations (PIOs). When the pilot pulled the throttle out of afterburner, the result was a large nosedown oscillation. To stop the PIO the pilot pulled back on



the stick to gain altitude and hit the paddle switch to disengage the pitch augmentation system. The nosedown force continued, so the pilot pulled the pitch trim circuit breaker, following the checklist steps for runaway stabilator trim.

After burning down his fuel in a holding area, the pilot tried to lower the gear to check his controllability in landing configuration. The gear wouldn't come down. After cycling the gear handle with no effect, he decided to reset the ·h trim circuit breaker. When he did, the gear nded normally. He then made an uneventful, but careful, landing.

A piece of rivet was found blocking the venturi. It was identical to the type of rivet that had been drilled out during the maintenance work preceding the flight. In fact, it showed scarring from being drilled.

The landing gear problem was unrelated. It was caused by incorrect wiring of the trim and landing gear circuit breakers. The way they were wired, when the trim circuit breaker was pulled, power was also interrupted to the landing gear circuit breaker. If that happens, normal gear lowering is impossible. The pilot's decision to reset the circuit breaker under those circumstances was a good one.

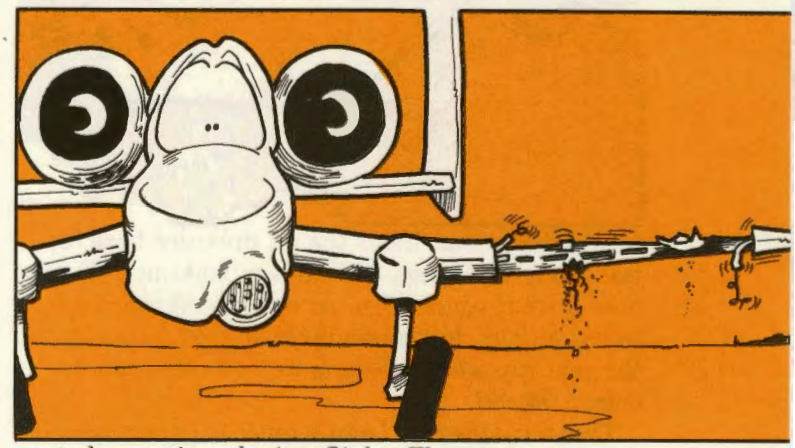
Patchwork problems

After the last flight of the day, a crew chief on an A-10 noticed a crack on a skin patch at the leading edge of the left wing. The crew chief ·tioned the crack to his replacement during ·t change and also notified a structural repair specialist, but he didn't write it up in the AFTO Form 781A.

The specialist went to work on the crack without any documentation. He sanded the area and applied an epoxy resin that was readily available in the AMU. The resin was quick drying and easy to use; however, it was not listed in the approved materials list in the tech data (Table 9-11 of TO 1A-10A-3-1).

The specialist also made no writeups in the 781 about the work he had done. The only writeup ever made about this patch was put in by the crew chief a couple of days later and simply read, "Left leading edge scab patch needs touchup paint." Unit supervisors never even knew that the work had been done.

In the next week and a half, the airplane flew 12 sorties with no problems in the area of the patch. But the A-10 returned from the 13th sortie missing a 5-foot by 10-inch section from the leading edge of the left wing. Panel W-73 had separated sometime during flight. The separation had begun at the repaired area of the patch, and from there the airstream had peeled the panel

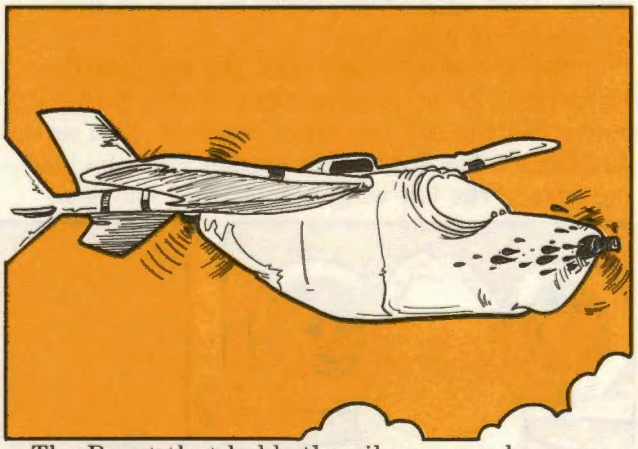


skin back until the skin broke free cleanly at the trailing edge of the panel. Fortunately, when the skin tore off, it didn't hit any other part of the airplane. The pilot wasn't even aware of the problem until after landing.

It's awfully hard for supervisors to keep track of what's going on if their troops don't document what they're doing. But teaching the troops to document their work is part of the supervisor's job. And if the unapproved patching resin was so readily available in the AMU, why weren't the supervisors aware it was being used? Structural repairs are serious business; surely they deserve closer supervision.

Wrong winterizing

An O-2 took off from its northern base on a local training sortie. Shortly after takeoff the front engine oil pressure slowly dropped to zero. The aircrew retarded the front engine to idle, returned to the field, and landed, shutting down the engine as soon as they turned off the runway.



The B-nut that holds the oil pressure hose on the elbow was loose, and oil was leaking from the hose at that connection. Almost no oil remained in the engine, but a puddle of oil was found on the taxiway where the engine had been run up before takeoff.

This airplane had been winterized the day before. Winterizing requires replacing the oil in the oil pressure hose with hydraulic fluid. To facilitate that work, the oil pressure hose had been removed. Later it was reinstalled and inspected, but the engine wasn't run for a leak check before this mission.

Actually, when an O-2 is winterized correctly, the oil pressure hose shouldn't be removed. The airplanes should have been modified for winterizing. TO 1L-2A-2 requires winterizing the hose, but it refers the reader to TO 5P2-1-1 for detailed instructions. However, TO 5P2-1-1 was not available in the AMU or in the base instrument shop.

Instead of using the tech order, the AMU had devised their own method of winterizing the oil pressure hose. The local way to do it required removing the hose. As far as anyone could remember, they'd been doing it that way for more than ten years. In all that time, no one had taken the time to research the tech data to insure that the job was being done right.

Signing isn't doing

When an F-15 returned from its mission, the crew chief noticed that panel 128 was missing. The pilot hadn't noticed anything abnormal during the flight. Fortunately, most of the mission was over water, so the panel probably fell in the ocean.

Several hours before takeoff, the right engine had been removed and replaced by workers on midshift. While reinstalling the engine bay panels, a crew chief noticed two fasteners missing from panel 128. He told the midshift expediter. The expediter said he'd get the fasteners and put them in the panel himself. He signed off and released the aircraft forms.

Afterwards, the expediter was interrupted several times. Soon it was time for shift change, and he forgot about the fasteners.

The two hooks on the top of the panel kept it in its normal position. Neither the day shift crew chief nor the pilot noticed the missing fasteners. The hooks probably held the panel during low-G flight but failed when the maneuvering got harder.

The solution to the problem seems simple: Don't sign off what hasn't been done. Otherwi the aircraft forms don't mean much.

LETTERS

Dear Editor

"Boating Rules of the Road" (July 1983 "Short Shots")—right of way???? Bad advice. Boat owners are not required to take an operator's test (driver test). There is no minimum age to operate a boat. Unless the operator just had the initiative to hunt for a boating safety course, they probably don't know right-of-way from transom. Injury and death potential in a boating accident is greatly increased due to the fact that there are no passenger restraints; state law in many states only require flotation devices to be available, not worn, even for children; not all boat operators or passengers can swim, and if unconscious or injured, drowning will probably result. Many states (I know of none) do not make drinking and driving in boats illegal.

Boating is normally fun and play. A good rule to follow is to yield to any boat that may be approaching your area and yield as soon as possible (boats do not have brakes). When overtaking or passing oncoming boats, stay in the channel, but allow as much room as possible between you and the other boat(s). So what if someone crossed your path when you gave up right-of-way? Wasn't it just a day of leisure anyway?
John H. Engle, TSgt, USAF
USAF Recruiter
Joliet, Illinois

Dear Sergeant Engle

We agree with your point that many boat operators don't know right-of-way rules. Insisting on right-of-way in a boat or a car is foolish. Only survivors can benefit from being legally right.

However, the answer to widespread ignorance about boating rules is more education, not less. That's why we'll continue to print articles explaining the rules.
Ed

Dear Editor

My congratulations to Captain Mike Sams for an outstanding article ("The Other Guy," June 1983 *TAC Attack).* I would like to echo his comments about helmet retention. We lost a bird in January, and the front seater lost his helmet *immediately* as he entered the slipstream. Both the visor and the mask were in place (normal position on the mask) and his straps were "snug." The helmet still rotated forward and was lost! His WSO (a recent water survival school graduate) tightened everything up "to the max," and the airflow almost got his helmet. Ejection preparation cannot be emphasized too much.

Another small point on the same article: The jock in the picture on page 13 *does not* have his chin strap fastened—a lesson on how *not* to do it!

Some feedback on your March 1983 issue, "RESCAP Is Not Standard": As a result of that excellent article and our recent experience, we did feel that some general items in the RESCAP scenario should be considered as close to standard as possible in each individual unit so the wheel is not recreated when someone punches out. A copy of the list that is being used by USAF, ANG, Navy, and Marine units in Hawaii is included for your information [see box]. Obviously, every item will not apply to all units.

Keep up the good work, and you can always count on support from the only Guard fighter unit outside of TAC.

Kenneth P. Wicks, Maj. HANG
Chief of Safety

LETTERS

RESCAP PROCEDURES (General)

1. Call "Knock-it-off!"
2. Stay out of distressed aircraft's flight path and ejection path.
3. Insure aircraft tape recorder is in operation.
4. Check aircraft for damage and monitor its flight path. Do not let it descend or change flight path without mentioning it to the aircrew. They may be distracted in the cockpit.
5. On ejection, check for seat separation and for chutes. (Remember, the chutes may not open until 11,500 feet.)
6. At ejection, mark TACAN bearing/DME, INS coordinates, or bearing/distance from a prominent landmark. Braodcast the position to the controlling agency.
7. Do not descend below the ejection altitude until chutes are sighted or the aircrew is in the water or on the ground. (The ejection seats are very difficult to see, and once the chute is open the time to descend can be as much as 20 minutes from 14,000 feet.)
8. Obtain wind direction and velocity to assist in spotting the downed crewmembers. (It is possible to drift as much as eight miles downwind from a nominal ejection altitude.)
9. Contact the primary controlling agency (GCI, FACSFAC, or FAA) with your information. NOTE: The agency with which the mishap aircraft was working normally will have the best situational awareness. All assisting SAR aircraft should check in with that one controlling agency unless other coordination procedures are established locally.
10. The aircraft with the best situational awareness or tally on the survivors should assume the duty as on-scene commander until relieved.
    a. The on-scene commander must have a plan.
    b. Get survivors to the secondary rescue frequency (282.8—Aux 18) and off Guard, ASAP!
    c. Stack aircraft in blocks for fuel conservation, communication relay, and flight path deconfliction.
    d. Pass the "Tally-Ho" to the next aircraft when the low aircraft bingos out. Do not press bingo fuel!
11. If necessary, insure that an alert aircraft is requested and launched soon enough to provide continuous coverage over the downed aircrew.
12. Pass control to the SAR aircraft when they arrive on station. Insure that a "Tally-Ho" is passed. Remember, the raft is very difficult to see, even from low altitude. Also, tactical aircraft may have black rafts which will make sighting even more difficult.
13. Recover from a straight-in approach. Although you are safe, you have just witnessed a traumatic event—no need to take chances!
14. If you witness the ejection and the events preceding it, tape it, write it down, and pass all pertinent information to the safety officer for the pending investigation.

Dear Major Wicks

Thanks for sharing your experience and ideas. Your "standard" RESCAP procedures look great to us except for step 10b. We believe it is critical for the survivors to stay on Guard at least until pickup is imminent. This is a full-fledged emergency and successful pickup is of far higher priority than blocking Guard. If several rescue aircraft are involved, it may be advisable to leave survivors, on-scene commander, and SAR on Guard and put everyone else on 282.8.

Ed

TAC TALLY

TAC Tally

	TAC			ANG			AFR		
	SEP	THRU SEP		SEP	THRU SEP		SEP	THRU SEP	
		1983	1982		1983	1982		1983	1982
CLASS A MISHAPS	1	21	23	2	10	5	0	1	1
AIRCREW FATALITIES	0	7	14	3	9	2	0	1	0
TOTAL EJECTIONS	1	21	20	2	9	5	0	0	2
SUCCESSFUL EJECTIONS	1	18	17	0	4	4	0	0	2

TAC'S TOP 5 thru SEP '83

TAC FTR/RECCE	
class A mishap-free months	
46	355 TTW
29	363 TFW
25	58 TTW
18	4 TFW & 35 TFW
15	37 TFW

TAC AIR DEFENSE	
class A mishap-free months	
128	57 FIS
81	5 FIS
78	48 FIS
37	318 FIS
28	87 FIS

TAC-GAINED FTR/RECCE	
class A mishap-free months	
137	188 TFG (ANG)
129	138 TFG (ANG)
128	917 TFG (AFR)
106	114 TFG & 174 TFW (ANG)
101	112 TFG (ANG)

TAC-GAINED AIR DEFENSE	
class A mishap-free months	
111	177 FIG
77	125 FIG
60	119 FIG
44	107 FIG
35	147 FIG

TAC/GAINED Other Units	
class A mishap-free months	
170	182 TASG (ANG)
154	110 TASG (ANG)
150	USAF TAWC
142	84 FITS
138	105 TASG (ANG)

CLASS A MISHAP COMPARISON RATE

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

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
TAC	1983	6.9	5.3	3.4	3.8	4.0	3.8	4.5	4.1	3.9			
	1982	7.8	5.7	5.9	5.2	5.9	5.7	5.1	4.7	4.4			
ANG	1983	9.1	7.0	4.4	4.3	3.4	4.2	4.8	4.2	4.6			
	1982	0.0	2.7	3.2	3.4	3.6	2.9	3.1	2.7	2.4			
AFR	1983	0.0	0.0	0.0	0.0	0.0	0.0	3.6	3.1	2.8			
	1982	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.5	3.1			

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FLEAGLE
DON'T KNOW WHAT IT IS, BUT EVERY YEAR 'BOUT THIS TIME I GET TH' FEELING THAT SUMPING OUT TO GET ME.
MAYBE I BETTER DROP IN ON DOC WREN AND SEE IF HE CAN HELP ME
© STAN HARDISON
FLEAGLE, IT SEEMS THAT YOU ARE UNDER SOME KIND OF STRESS BROUGHT ON BY A DEEP SEATED ANXIETY. LET'S GIVE IT A FEW DAYS AND SEE WHAT DEVELOPS.
STRESS, ANXIETY ?
HARDISON
HAVE A HAPPY THANKSGIVING