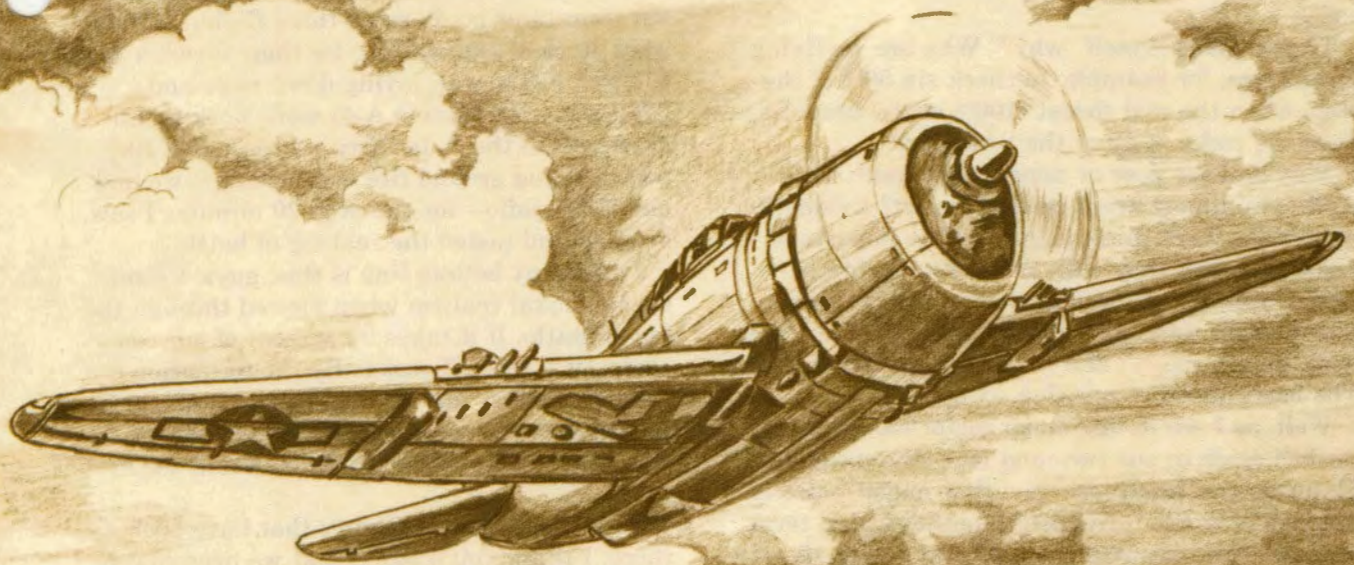


# *TAC ATTACK*

MAY 1987



Conversation with an Eagle... Pg. 4



# ANGLE OF ATTACK

**F**or some time now I've listened to the debate surrounding training the way we intend to fight and fighting the way we train. I think we all agree on the basic premise that our training must be realistic and based upon sound tactics to defeat the threat we expect. Therefore, "how" we intend to fight must be based on one basic element—threat probability—not threat possibility. The ops factor mishaps I have reviewed lately seem to point toward sound but dumb tactics. Sound because they are designed to counter some threat situations, but dumb because the probability of that type of threat on that particular mission would be low; real low in many cases.

I have asked myself "why?" Why are we flying formations, for example, to check six 50% of the time when the real threat (100% of the time) has been the rocks at 12 or the SAM at 9?

Why do I see poor or nonexistent radio discipline in almost every mishap report? Evidently some folks don't think precise R/T is important right now. But they will. When you realize several of your squadron mates were lost because crucial R/Ts were jammed by "ahhs" and "... not sure, let me see ... ahh ..." then it'll be too late. The basic question remains—why?

Well, as I see it, one major factor has been pushed aside in our two- and four-ship mission planning and briefings—and that major factor is the "fog of battle." This isn't another Cajun term. Just ask the jock with the gold star on his sleeve, and he'll be glad to give you some real examples.

Our flight commanders need to understand what the fog is really like and make certain their troops understand they won't be the only ones invited to the war. Multiply the RED/GREEN FLAG environment by about four or five and you're getting close. Let me give you an example. It was a TIC (Troops in Contact) mission—a large one—and we were scrambled from the alert pad. Thinking my leader would roll in with his MK-82s and I'd lace my "nape" just like our BDU



runs back at Peason Range, my eyes widened when I realized that there were three FACs working the entire area—no clear lines because it was a moving engagement—several flights of A-1s were rolling in on their target which was next to ours—a flight of F-100s had just pulled out from their bomb run—three flights of F-4s were stacked and waiting for their turn—a flight of three A-37s was laying down nape and CBU-25s—US Marine A-4s were working an area next to the A-1s. Arty was going off like popcorn, and ground fire was intense—we had one UHF radio—for the next 20 minutes I saw, smelled and tasted the real fog of battle.

I guess my bottom line is this, guys. Cosmic doesn't equal realism when viewed through the fog of battle. If it takes 90 percent of our concentration and R/T just to fly the formation or ground track or any other single part of a training mission, then we're not doing it like we would in combat—the loss rates would see to that.

Talk it over with the guys that have been there. I think you'll agree that we need to consider the fog of battle when we're planning our tactics for our training missions. That's part of flying smart. We need to continue to fly smart because when we do, regardless of whether it's peacetime or combat, safety takes care of itself.

EDSEL J. DE VILLE, Colonel, USAF  
Chief of Safety

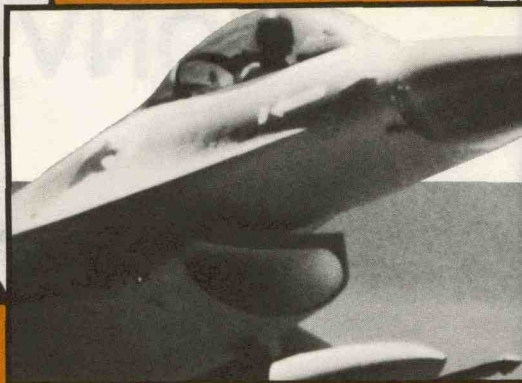


# TAC ATTACK

DEPARTMENT OF THE AIR FORCE



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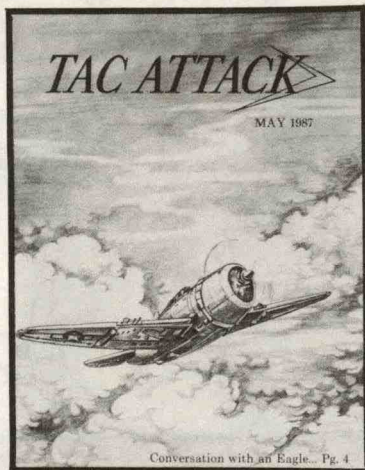
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# CONVERSATION WITH AN

**Maj Gen Chesley G. Peterson**  
(USAF, Retired)

**Maj Don Rightmyer**  
Editor, *TAC ATTACK*

Biography: Major General Chesley G. Peterson entered aviation training in 1939 and joined the Royal Air Force (RAF) in late 1940. He flew in the Battle of Britain and became the youngest squadron commander in the RAF when he assumed command of 71 Squadron, the first of the famed Eagle Squadrons. In 1942, he transferred to the U.S. Army Air Forces' 4th Fighter Group and became the youngest full colonel in the USAAF at the age of 23. During the war, he led the first combat sortie with P-47s in Europe and flew over 200 combat missions with the USAAF and RAF. Following the war, General Peterson commanded the 137th Fighter Bomber Group, the 48th Tactical Fighter Wing and the 8th Tactical Fighter Wing. Before his retirement in 1970, General Peterson had logged over 6000 flying hours in such fighter aircraft as the Spitfire, P-47, F-80, F-86, F-100 and F-4.





# EAGLE



**TAC ATTACK:** From your lengthy experience in both combat and peacetime, what do you think are the basic ingredients necessary to be a good fighter pilot?

**PETERSON:** You've got to absolutely desire to fly fighter-type airplanes. That's the first thing. You've got to believe in individual combativeness and a little bit of aggressiveness. You don't want to sit down and ride along on long stretches and take things cool and calm; it's all got to be in a rush. That's pretty well a typical fighter pilot.

**TAC ATTACK:** In James Saxon Childers' *War Eagles*, he talks about when you were commander of 71 Squadron. He mentions that you busied yourself between missions with preparations for the next sortie by reading the tactics reports that were provided. Can you discuss the kinds of things you tried to do in order to get ready for the next mission?

**PETERSON:** Any time you're leading more than a flight, you've got to think about the total overall mission. You just

want to try and figure out what mistakes you made on your last mission and ensure that you can do better on the next one. The whole outfit, not just you, but the whole outfit.

Every mission was different. You had a different lesson learned. If you lived through it, well, by golly, you found out the reason why. I always had the feeling that if you didn't learn by your mistakes, then the whole outfit was going to suffer. I really think that, to a certain extent, it isn't all this hells, bells and glory thing all in one mission. It's a lot better to get a little bit less glory and live to fly ten or fifteen missions. Live to fly another day. Don't throw it all away on one. There's a lot of investment in a young wingman that you're responsible for. You don't want to put him in a position that he's not going to do the best that he can.

**TAC ATTACK:** We want our people to fly realistic scenarios and a certain amount of aggressiveness and combativeness is necessary; however, we can't forget the overriding impor-

tance of living to fight the next fight.

**PETERSON:** That's right. You know, there's nothing more useless than a dead fighter pilot.

**TAC ATTACK:** Once you got airborne on a combat mission, what thoughts were uppermost in your mind in order to make sure that you were able to come back and fly another day?

**PETERSON:** Well, you've got to break it down into your flight position; whether you're a leader or a wingman. I think the most important thing is to ensure that you're in the proper position within the formation so that you can follow the leader's orders as he gives them.

If you are the leader, then you've got to be absolutely certain you put your whole outfit in a position to attack the enemy. You certainly don't want to get in a spot where the enemy is going to have the advantage. Of course, that all depends on the weather, the sun, the speed and the type of airplane you're in. In my day, if you were in a Spitfire, you





# CONVERSATION WITH AN EAGLE

knew that you could always turn very rapidly and get out of trouble; but if you were in a P-47, you knew darn well you had to keep your speed up because you couldn't turn as fast. The F-4 in Vietnam was similar. You had a good speed advantage, but you couldn't quite turn with a MIG. In the F-100 or F-105, you didn't have quite the speed, but you could turn to a certain extent. So I think the main thing is just to look around the sky and see what's there. That's the big thing.

**TAC ATTACK:** Then you would say that it's very important for a pilot to know his aircraft; to know its capabilities as completely as possible.

**PETERSON:** Absolutely. As well as your own capabilities. Some guys can see better than others. Some guys have a better feel for getting in a good position. I found that you always get shot down by the guy that you don't see. So you've just got to be real smart and stay out of the way and get help from your other people. That's the great thing. You're not just an individual there, you're part of a full formation. Everybody depends on each other.

**TAC ATTACK:** Your combat record was at least 9 confirmed kills and 9 more suspected or probable.

**PETERSON:** That's right.

**TAC ATTACK:** I'm sure it was different on each mission that you achieved a victory. What

are some of the things you feel gave you a decisive advantage in those air combat experiences?

**PETERSON:** I think the biggest one was surprising the guy. That was really the key. It all came down to getting an advantage of altitude and speed that he couldn't cope with.

**TAC ATTACK:** You described your first victory as being fairly easy.

**PETERSON:** We'd had a bit of a melee and he rolled out right in front of me. He didn't have the faintest idea that I was there. It was duck soup.

**TAC ATTACK:** Some of your other victories were not that easy?

**PETERSON:** They weren't, but that first one was a good confidence builder that helped get me going.

**TAC ATTACK:** What do you think is the importance of flight discipline?

**PETERSON:** Oh, it's absolutely imperative. You've got to follow your leader; that's all there is to it. It was drummed into us right from the very start that even though your leader might look like he's going to run you into a mountain, it doesn't make any difference—the wingman stays with his leader. If you do that, then you've got a good outfit and you're a vital part of it.

**TAC ATTACK:** So it's the very





basis for a successful flying operation—good air discipline.

PETERSON: Yes, air discipline. Absolutely.

TAC ATTACK: We've experienced some problem with midairs during the last year. In the fighter community, you're usually flying with more than one airplane in a formation. How did you cope with that problem?

PETERSON: In the incidents I can think of, the midairs were caused by a lack of judgment. You've got to know your capability, and it takes both the wingman knowing where his leader is and the leader knowing where his wingman is.

I think a unit that's absolutely disciplined to the point where the wingman can stay with his leader, the flights can stay in position, the squadrons stay in position with the rest of it, no matter how tough the battle gets, you can still control it. I think probably the greatest fighter leader we ever had was Don Blakeslee who could take a hundred Mustangs and direct them all over Europe and, in the middle of battles, know where every one was. The 4th Fighter Group was a well disciplined outfit and they knew how to do it. They stayed together.

TAC ATTACK: What do you think were the qualities that made Blakeslee so capable? Was it something you could put your finger on?

PETERSON: Yeah, Don

Blakeslee had trained his men to the point that he absolutely trusted them and knew that they could do the job. Because of that, he could afford not to worry about himself and be free to stand above the battle and direct. He was also a very capable pilot; absolutely marvelous. He knew how to do it.

TAC ATTACK: During the early years of your career you were the youngest squadron commander in the Royal Air Force and also the youngest colonel in the Army Air Forces at the age of 23.

PETERSON: Yes.

TAC ATTACK: Did you ever have the opportunity to serve in the lower leadership levels or did you jump to the squadron commander role right off?

PETERSON: No, I worked my way right up from pilot officer to section leader to flight leader and so forth.

TAC ATTACK: How does a squadron or flight commander go about gaining the respect of his people, the fighter pilots in his unit, and leading them effectively?

PETERSON: Well, that's a pretty tough one. There's so many things in it. I think the first thing is that you've got to prove to them that you're never going to tell them to do something you wouldn't do yourself. That's the ultimate. They have to know that you'll always keep a cool and calm enough head and that you're not going to get them killed. I think the other

part of it is to be confident enough in your own decisions that you can care less what somebody else says or thinks because you know you're going to be right. Several times I heard some mutterings in the background about "Well, the weather doesn't look too bad. I don't see why the old man scrubbed this one today." But I knew the weather wasn't good enough for them to go, and so I scrubbed it. You've just got to know it, that's all. Don't put your people in a position where they're going to get in trouble. That's being a leader.

TAC ATTACK: One problem we have today is highly experienced pilots with several thousand flying hours having flying mishaps. When you look at their flying records, you think "This shouldn't happen." Did you have problems with people allowing themselves to be overloaded and losing sight of priorities? If so, how did you take care of it?

PETERSON: What I tried to do, as a squadron leader or group commander, was to do my best to keep their duties aligned to their primary duty of flying; even to the point of making somebody else do their duties. There's no sense in having a fighter pilot down inventorying the commissary or jobs like that. The flying job is just too important. That airplane and that pilot are the primary mission and that's what he ought to be doing.





# CONVERSATION WITH AN EAGLE

You've got to do your best to ensure that the outfit knows what the primary mission is. It's absolutely imperative.

You've got to be up on what you're doing all the time. And you've got to get flying time and have good training. You

shouldn't have any extraneous problems, either official or unofficial, that would cause any pilot not to be at his best.

**TAC ATTACK:** What was your greatest challenge as a leader of fighter pilots?

**PETERSON:** Well, you don't necessarily have to be the best liked guy in the world. I think the greatest challenge of leadership is just to make sure that the guys you're leading know what the mission is, know that you're behind them all the time and that you are willing to do anything that is needed.

**TAC ATTACK:** Let's turn for a moment to the folks that worked with you. What sort of relationship did you try to establish and have with the crew chiefs and armorers, the guys that maintained and supported your flying and your aircraft?

**PETERSON:** That's a pet subject of mine. Absolutely, a team is a team. That goes right down to the lowest airman that's working for you in any job. Of course, I was raised in the crew chief system. I believe in it. I certainly understand that with the new equipment and technology that's come along, you have to ensure that you have a little more specialty. But the basic idea is that a pilot, an airplane and the crew that's crewing it, that's the team. You've got to ensure that they have empathy all the way with each other. There's nobody that I'd have greater affection for





than my crew chief. There may even be some little specialist that isn't immediately available because he's off in one of the tech squadrons or something, but a pilot should get to know him just as well as he does his crew chief. I think that's a part of a pilot's business.

**TAC ATTACK:** So you feel like pilots should make it one of their priorities to go and spend some time on the flightline and get to know those guys.

**PETERSON:** That's right. Absolutely. Take an hour or so, even on a day when you aren't going out to fly, and go get to know those guys.

**TAC ATTACK:** As you mentioned, your experiences ranged from being a new guy on up. What kinds of things did you try to teach a young guy when you took him out as your wingman?

**PETERSON:** I always tried to ensure that my wingman didn't have his eyes glued on me; that he also knew what the rest of the flight or squadron was supposed to be doing with the idea that in time, and during war it was sometimes an awful short time, he'd be leading and, therefore, he'd better know. I also made sure that he had a basic idea of all the tactics that had proven successful and that his training was complete. I didn't necessarily want him to be the finest marksman in the Air

Force, but, by golly, he'd better know how to shoot. He needed to know why you harmonized your guns in such and such a way and why you had to have your radar working just exactly right. I didn't want him jumping in the cockpit and saying, "Well, I'm sure it will work," because that's when you get in trouble. You've got to make sure it works. That's what your wingmen should know.

**TAC ATTACK:** What lessons did you learn from your combat experiences that you would care to share?

**PETERSON:** Well, I think that every pilot should have instilled in him a feeling of confidence that he can turn to his leader and say, "Boss, why don't we do it this way?" or "You put me in a bad position. I couldn't quite cope with it. Let's think about this." Don't be afraid to speak up. Every leader ought to recognize that this is a valuable learning experience. When you get to be leader, you've got to stand on your own two feet and tell your bosses up the line "Yeah, we can do this" or "No, we can't do that." Don't be put in a position where you would endanger your own peoples' lives, or careers or anything else. A leader is beholden to his men. I know that many times it's necessary for higher headquarters to say that you've got to do this or that. You've got to make them understand that there are some

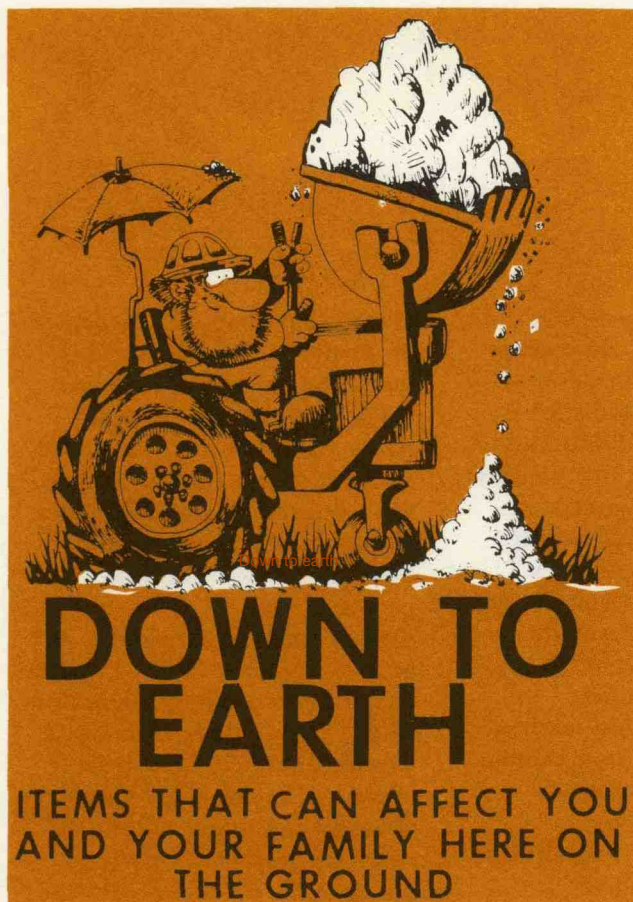
things that shouldn't be done or should be done in another way. That's very ticklish and there's a very fine line, but I think that's what a leader has to do. If you're successful at it, then you're a successful leader. If you're not, then you don't lead anymore or you lose people.

I remember one incident just after we got our P-47s. I called one of my top commanders and said, "The weather is bad and we can't take off." He said, "I order you to take off." I said, "I'm just not going to take off with the group (75 airplanes)." He gave me no choice. He said, "This is a direct order, you've got to do it." So I said fine. I marshalled the guys and I told them, "Now you wait until me and my wingman take off." When I got airborne and went into the weather at about 200 feet, I called back and said, "Scrub the mission." There wasn't anybody that could say anything about it because that's the leader prerogative. It shouldn't have to go that far. But you just don't endanger your people unnecessarily.

**TAC ATTACK:** Thank you, General Peterson, for sharing your thoughts with us.

**PETERSON:** Give my best to TAC. That's my old command, by golly. And it's a good command, it really is. It's really the best part of the Air Force, but you can't say that too loud.





## We're losing too many fingers

**I**magine what it would be like to lose a finger. Wrap your thumb with a thick bandage and try to eat with a fork or spoon or write with a pencil or pen. It would certainly take some getting used to. In the last 15 months, TAC people have lost 18 fingers in 13 incidents. If it's true that we can learn from our mistakes, let us tell you how we're losing fingers.

An airman was aligning an aircraft engine mount. She put her finger under the mount to see if it was aligned. The engine slipped and severed an index finger.

A sergeant was target practicing, using a handgun. He had been drinking and while handling the gun, he shot his index finger off.

A civilian was cutting plastic on a table saw. The plastic shattered and severed his right middle finger.

A sergeant severed his little finger when it got caught in the drive belt of a running car engine.

A captain was cutting wood on a table saw with one hand forward of the blade. The blade bound, the wood kicked back and his hand made contact with the blade. He severed three fingers.

Here's two separate incidents each involving a sergeant who was cleaning his motorcycle chain with a rag. One sergeant amputated his index finger and the other one lost a finger tip when the chain pulled the rag and fingers into the sprocket.

A sergeant was recentering a 55-gallon drum on a forklift tine. He was wearing gloves, but took them off to get a better grip on the drum. His left middle finger got stuck under the drum; when he stood up, his finger tip didn't come up with him.

A job that another airman was doing required a motorized miter box. He went to tool issue to get one, but all the guarded miter boxes were out; however, with some argument, he was finally issued an unguarded miter box. He had started to cut two pieces of edge molding with the curved surface down when he also cut his index finger off.

An airman was cutting the grass. He lifted the lawn mower to adjust the height, but the engine and blades were still operating. He lost two fingers.

A civilian was using a 10-inch saw without a guard. He cut off his thumb.

During assembly of a life support rack, two center poles were erected with a bolt. The airman was holding the top portion which rotated and severed his ring finger.

A sergeant was wearing gloves and using a jointer. The gloves got caught in the blades, and two of his fingers were cut off.

A sergeant was working in his home workshop on a wood planer/jointer. He had his left hand on the leading end of the wood exerting downward pressure. He was using a push block with his right hand. The push block was ejected from the machine. His hand rolled over the push block and his fingers contacted the cutting blade. He lost two fingers.

Loss of a finger, if it involves loss of bone, is considered a permanent/partial *disability*. Any of these incidents sound familiar? Ah, you've been prepared or maybe just lucky!



## Yes, you can fall out of a roller coaster

**T**wo airmen were at a county fair having fun, drinking some beer and eating the good food. One of the airmen drank a little too much beer.

They decided to ride the roller coaster. How could they pass up a ride on a roller coaster named "Amour Express—The Love Machine?" The airman that had drunk too much beer got into his roller coaster car. Witnesses said that while seated in the car, he appeared extremely limp.

The safety bar was put down and locked. The ride began. As the coaster began to speed up, the airman was forced over to the side of the car, causing his upper body and arms to hang over the side. When the coaster started to gain more speed, the airman was thrown from the car as it came out of a tunnel. He received fatal injuries to his upper chest.

The roller coaster was inspected the next day and no discrepancies were found. Although the safety bar was down and locked, a safety bar will not adequately restrain a person who is in a limp position.

Let's see—you're familiar with *don't drink and drive*; now you know that you *don't drink and ride*. The buddy system applies here too: the more sober airman shouldn't have let his friend ride drunk.



## THINK

**TSgt James M. Cresow**  
**405 EMS**  
**Luke AFB, Arizona**

Safety isn't just a word  
It should be a way of life.

If everyone followed all the rules  
We'd save much grief and strife.

The money doesn't matter much  
Compared to sorrow and pain.

By being safe we have nothing to lose  
But everything to gain.

So take the time to think a bit  
Before you start a task.

It may just be that time of thought  
That won't make this one your last.



**IF  
PANELS  
WERE MEANT  
TO FLY SOLO  
THEY'D HAVE  
WINGS, NOT  
FASTENERS!!**



# AIRCREW OF DISTINCTION



**C**aptain David Cordon, aircraft commander; First Lieutenant Christopher Stewart, pilot; Sergeant Thomas Langella and Senior Airman Anthony J. Drake, flight engineers, were about 50 minutes into a VIP flight from Langley AFB, Virginia, to the Pentagon in their UH-1 helicopter when they experienced a sudden catastrophic engine failure. The entire crew heard the engine compressor stall as the two pilots noticed the low rotor RPM audio and warning lights. Captain Cordon immediately called "Engine failure" and lowered the collective to regain sufficient rotor RPM for a landing. At the same time, Lieutenant Stewart began a forward scan for a suitable landing area. Noticing a power line and farmhouses in their flight path, he called for a 90-degree left turn towards the only available landing area. A turn during an autorotation is considered so difficult that it is not practiced. In this case, the aircraft's limited altitude made the maneuver even more difficult; but the farmer's field was the only open space in the otherwise



**Capt David C. Cordon**



**1st Lt Christopher D. Stewart**



**Sgt Thomas J. Langella**



**SrA Anthony J. Drake**

**1 TFW  
Langley AFB, Virginia**

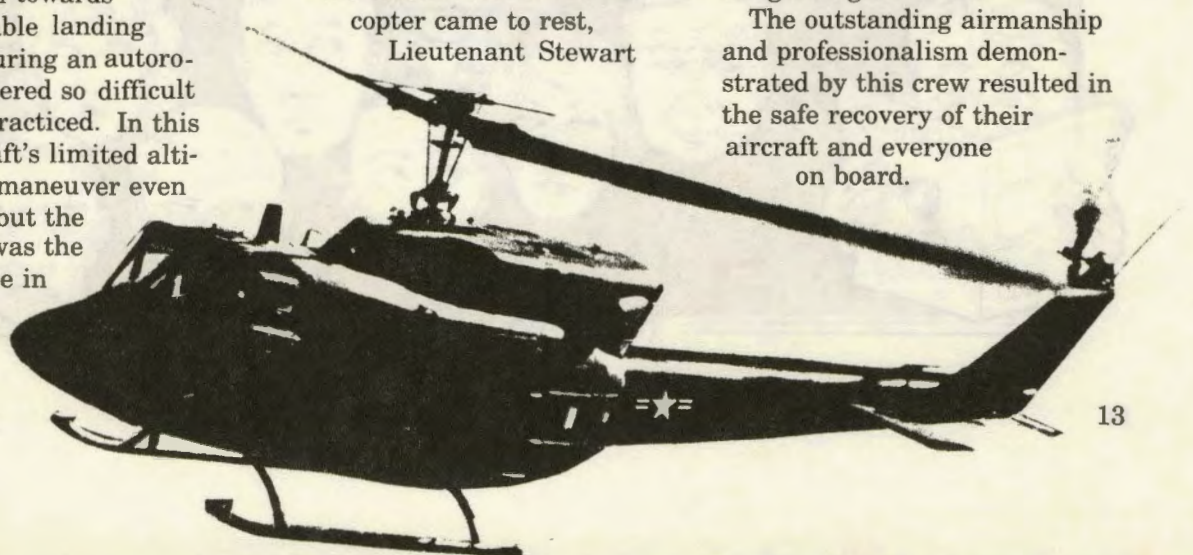
completely forested area.

Airman Drake, meanwhile, had placed their passenger in the crash position, tightened the individual's restraints and opened the side door for egress after landing.

Captain Cordon made a flawless slide-on landing on an estimated 5-degree downslope and came to a stop just prior to the treeline. After the helicopter came to rest, Lieutenant Stewart

completed emergency shutdown procedures and all crew members egressed the aircraft while Airman Drake assisted the passenger in moving to a safe location. Sergeant Langella, after obtaining the first aid kit and firefighting equipment, immediately removed engine shrouds to cool the engine and minimize the danger of ground fire.

The outstanding airmanship and professionalism demonstrated by this crew resulted in the safe recovery of their aircraft and everyone on board.





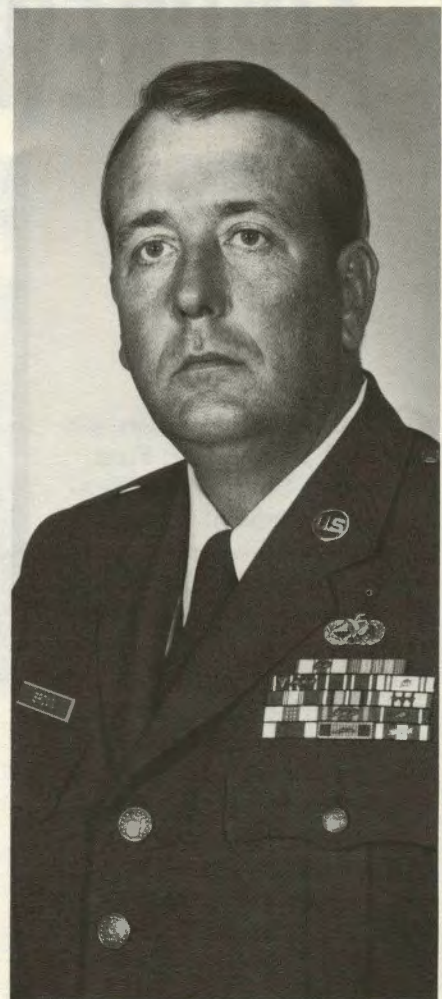
# TAC OUTSTANDING ACHIEVEMENT IN SAFETY AWARD

**W**hile troubleshooting an emergency brake accumulator leak on an F-4, Master Sergeant Charles Brown III discovered that an improper air charge valve had been installed. Use of this improper valve could cause fatal injuries to maintenance personnel. Sergeant Brown immediately checked the bench stock assets of all four aircraft maintenance units and found that these improper valves were being stocked. He brought the situation to the attention of quality assurance and a one-time inspection was performed on all 67 TRW aircraft. The inspection revealed that the problem was widespread. When notified of the situation, the depot determined that the improper

valve had been erroneously linked in the entire F-4 fleet supply system as a suitable substitute for the correct valve.

As a direct result of Sergeant Brown's actions, an interim urgent action TCTO was issued to the fleet to remove the improper valve from all aircraft and supply systems. The hazardous nature of this valve could easily have caused fatal injuries to less experienced personnel throughout the F-4 fleet if not for Sergeant Brown's initiative and perseverance in determining the scope of the problem.

**MSgt Charles Brown III**  
12 AMU, 67 AGS, 67 TRW  
Bergstrom AFB, Texas



pass it along, nine people are waiting

PASS IT ALONG...



nine people are waiting



# TAC CREW CHIEF SAFETY AWARD

**A**irman First Class Douglas Pepiot was selected to receive the crew chief safety award for his exceptional safety-conscious attitude.

On three separate occasions, Airman Pepiot detected hot brakes upon the arrival of the aircraft at its parking spot. On each occasion, he properly notified the pilot, declared a ground emergency and sent the aircraft to the hot brake area until it was determined safe.

During a thru-flight inspection of an aircraft, Airman Pepiot found several loose rivets in an engine inlet ring. He immediately notified the engine specialists and assisted them in changing the inlet ring, thereby, averting potential foreign object damage to

the engine. During another thru-flight inspection, Airman Pepiot discovered an improperly secured sway brace on an inert 500-pound bomb. He notified the weapons personnel who then properly secured the bomb, preventing a possible inadvertent release during flight.

When a fellow airman accidentally walked into a lower antenna on the aircraft he was crewing and injured his eye, Airman Pepiot gave immediate aid, preventing further damage to the airman's eye.

**A1C Douglas H. Pepiot**  
333 AMU, 355 AGS, 355 TTW  
Davis-Monthan AFB, Arizona



## HEADS UP



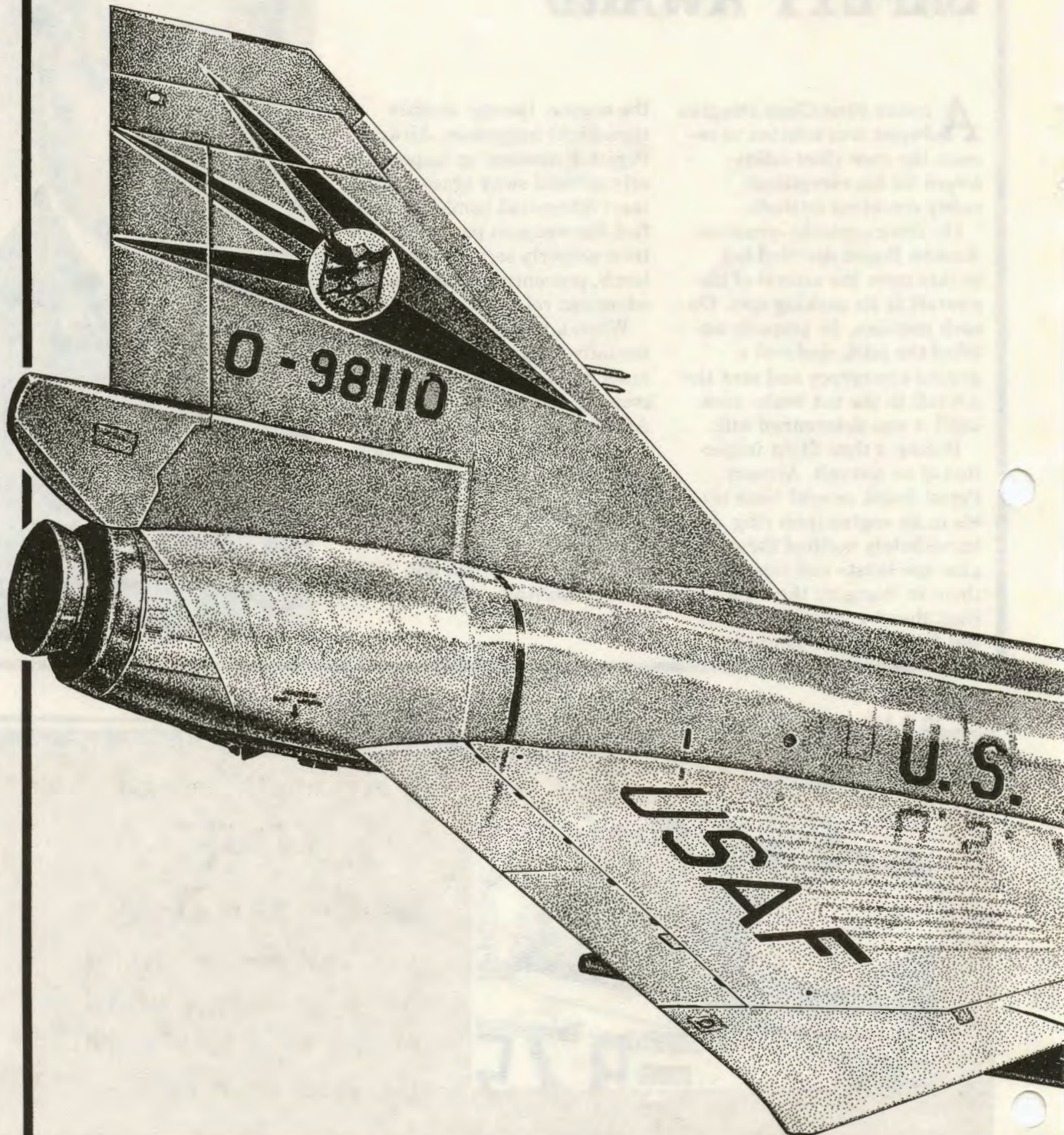
Next month, in the

# JUNE

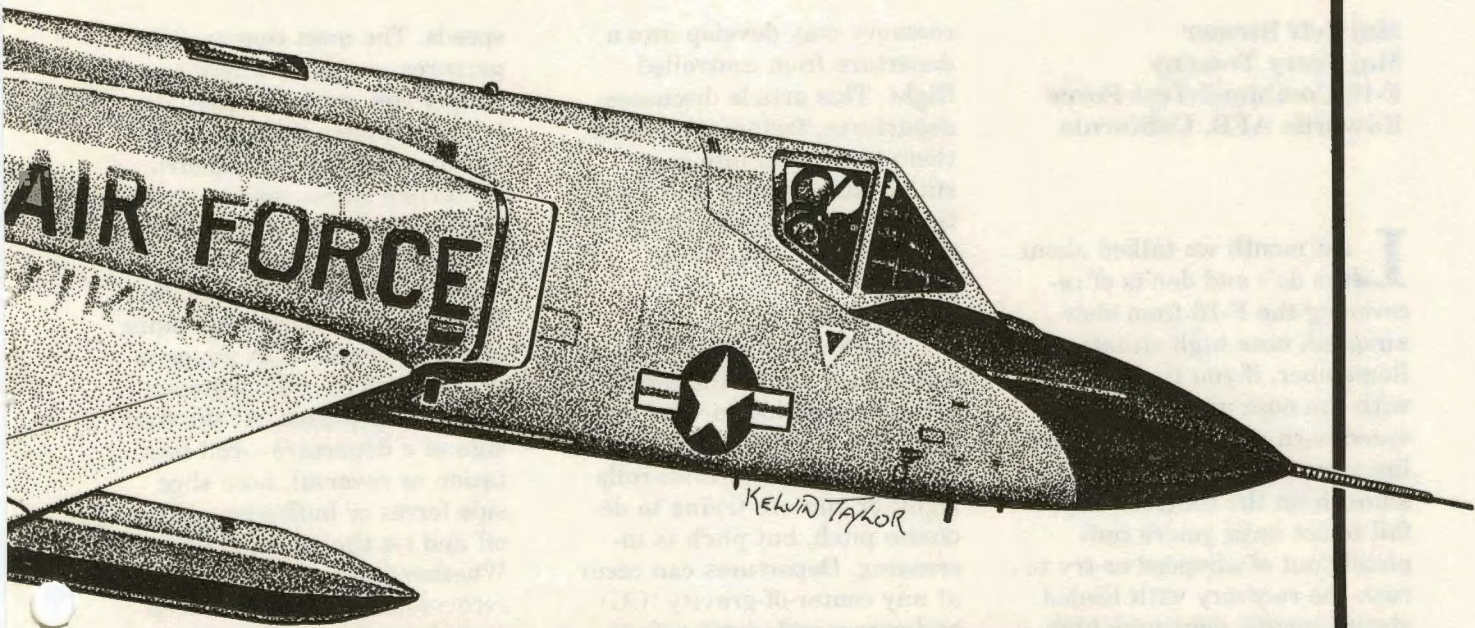
issue of *TAC Attack*, you will see Sgt Kelvin Taylor's stipple drawing of the P-51 MUSTANG IN THE CENTER.



# F-106 DELTA DART









# OUT OF CONTROL IN THE F-16



**Maj Jeff Riemer**  
**Maj Terry Tomeny**  
**F-16 Combined Test Force**  
**Edwards AFB, California**

**L**ast month we talked about the do's and don'ts of recovering the F-16 from slow airspeed, nose high situations. Remember, if you find yourself with the nose up and the slow speed horn comes on, **don't delay** your recovery and **be smooth** on the controls. If you fail to act until you're completely out of airspeed or try to rush the recovery with loaded abrupt inputs, your nose high

recovery may develop into a departure from controlled flight. This article discusses departures, factors that cause them to develop into deep stalls, what a deep stall really is and how to recover from departures and deep stalls.

## **Departures**

Let's think of a departure as a condition where the aircraft is not responding to your inputs. For example: you want to roll left, but the aircraft rolls right; or you are trying to decrease pitch, but pitch is increasing. Departures can occur at any center-of-gravity (CG) and over a wide range of air-

speeds. The most common departures are those where you simply run out of airspeed or try to roll aggressively at too low an airspeed. Asymmetric or centerline stores combined with high altitude and aggressive pulls on the stick are also a major cause of departures. So, if the aircraft is not responding and the cockpit AOA gauge is pegged ( $-5$  or  $+32$  degrees), you have departed. At the first sign of a departure—roll hesitation or reversal, nose slice, side forces or buffeting—back off and let the airplane fly. Whether the aircraft self-recovers or ends up in a deep stall depends on several factors.



The most common departures are those where you simply run out of airspeed or try to roll aggressively at too low an airspeed.

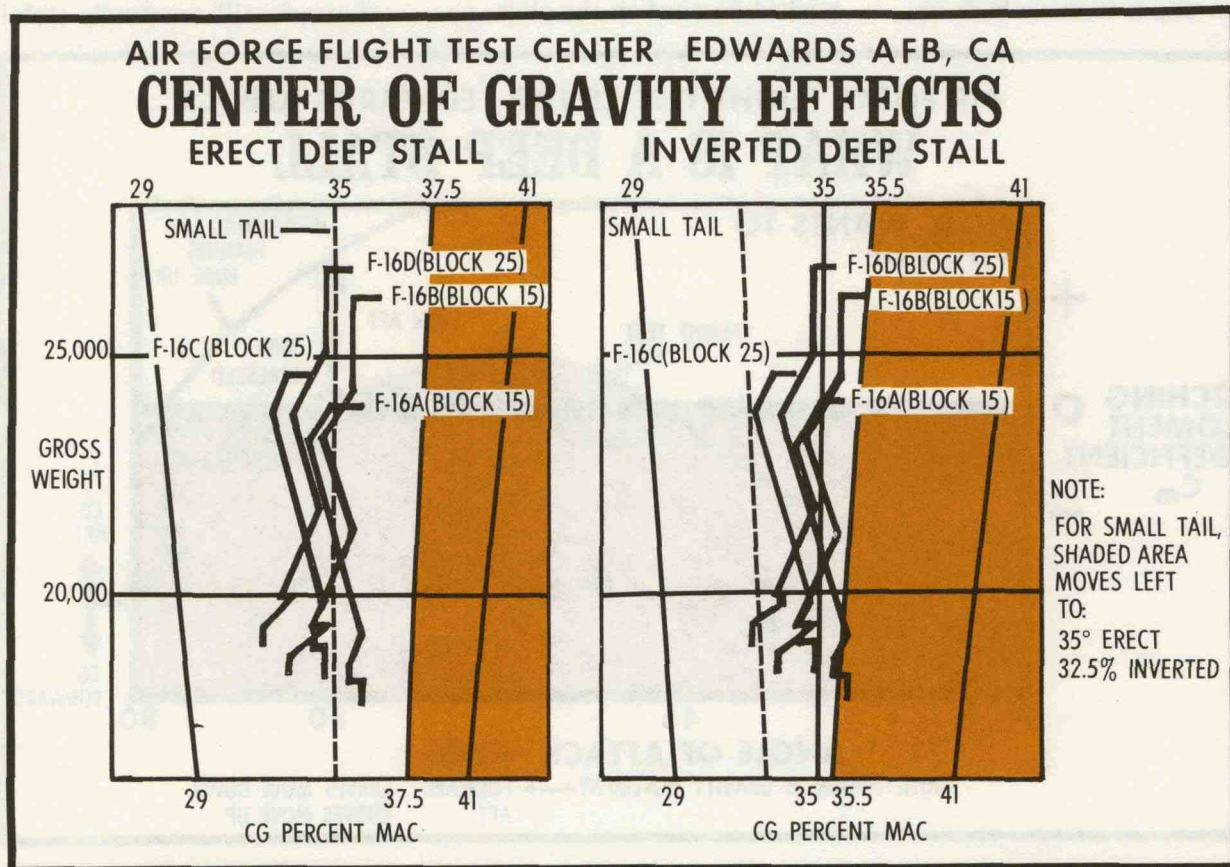
### Transitioning to Deep Stall

Aircraft CG is a significant factor in determining what happens after a departure. Figure 1 shows the susceptibility of a departed aircraft to deep stall as a function of CG and horizontal tail size. The curves for each type aircraft show how CG changes as fuel is burned in a clean aircraft. Clean Block 25 big tail aircraft are essentially immune from deep stalls since normal CGs run from 33 to 36 percent. From our experience, a CG aft of 37.5 percent (35.5 inverted) is required to stabilize in a deep stall. Small tails, however, can deep stall with CGs as far forward as 35

percent (32.5 percent inverted). As CG moves aft the potential for a deep stall increases. External stores, one crewmember, no ammo, fuel imbalance and many other factors cause CG to shift.

Another factor, and one you have control over, is the timing of when you activate and hold the MANUAL PITCH OVERRIDE (MPO) switch. If you come on the MPO too early, you can prevent a self-recovery and actually put the aircraft into a deep stall. The reason this happens is that once the aircraft has departed, the horizontal tail is working to recover the aircraft. In the case

of an erect departure, the tail is full trailing edge down. With controls neutral, depressing the MPO will cause the tail to neutralize; or worse yet, if you are applying aft stick, the tail will go trailing edge up, which tends to prevent a self-recovery and helps to deep stall the aircraft. One of the worst calls you can make as a flight lead to a flight member that has departed is "Get on the MPO." If the aircraft is trying to self-recover just as you make this call, you may have prolonged the recovery. You also don't want to ask questions at this point, because if pitch rocking has begun you don't want the







# OUT OF CONTROL IN THE F-16

person out of control to release the MPO in order to answer your question. If you have to say something, tell the person to monitor altitude. If you are the person out of control, give the aircraft the opportunity to self-recover by releasing the controls until you're pretty sure you're in a deep stall—nose near the horizon, wings rocking, airspeed below 100 knots and AOA pegged. The more pitching motion you see, the more likely the aircraft is to self-recover. If the nose drops to nearly 45 degrees nose low and the aircraft is buffeting with airspeed increasing, it is probably going to self-recover. If you have waited several seconds and the nose is not moving or starts to move back up,

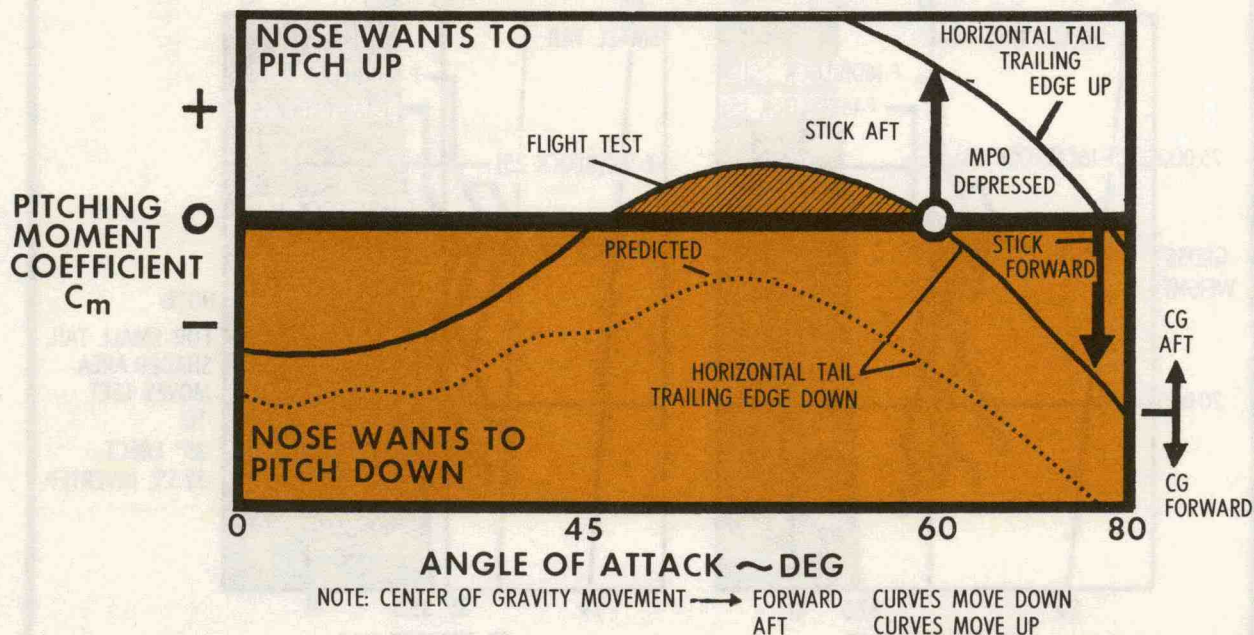
then it is time to get on the MPO. Before we discuss the actual recovery, let's define a deep stall and see why the MPO is so useful in recovering the aircraft.

## Deep Stalls

What is a deep stall? Very simply, it is a condition where the aircraft is trimmed at an angle of attack greater than stall and is content to stay there. Figure 2 is a plot of pitching moment coefficient versus angle of attack. Very simply, pitching moment coefficient is what the nose of the aircraft wants to do at a given angle of attack. If you were designing an aircraft, you would like the nose to go down if you pushed forward on the stick, no

matter what the angle of attack. This was predicted to be the case for the F-16 and is shown by the dotted line in the figure. During flight test, however, we found that at aft CGs this is not always true. If an erect departure occurs at CGs forward of 37.5 percent for big tails and 35 percent for small tails (35.5 percent and 32.5 percent respectively for inverted), the nose will generally move down and the aircraft should self-recover. However, as the CG moves aft, flight test has shown that the aircraft behaves differently. Even with the horizontal tail trailing edge full down, the nose of the aircraft may be content to stay near the horizon and the angle of attack will eventually stabil-

## AIR FORCE FLIGHT TEST CENTER / EDWARDS AFB, CA WHAT IS A DEEP STALL





ize near 60 degrees—a deep stall. The solid line shows that for this example, above approximately 45 degrees angle of attack, the nose wants to pitch up, even with the trailing edges full down. It will continue to pitch up until the angle of attack reaches approximately 60 degrees. At this point the aircraft will oscillate slightly about this angle of attack and you are in a deep stall. You're stuck. The flight controls aren't listening to your inputs since you are above 29 degrees AOA and the aircraft is doing everything it can to reduce AOA, but it's not able to. Without the MPO switch, your options would be very limited. By throwing this switch, you're telling the airplane "Believe me, I'm serious."

### Pitch Rocking

With the MPO switch engaged, as you move the stick aft, the horizontal tail will go full trailing edge up and put you on the upper curve (what the nose wants to do with full trailing edge up controls). On this curve, the nose wants to move up at nearly all angles of attack. As the nose moves up, the angle of attack increases to the point where the curve crosses the zero pitching moment coefficient line and the nose starts back down. You have reached your maximum pitch and the nose down movement is your cue to push forward on the stick. This puts

you back on the horizontal tail trailing edge down line, and at this angle of attack the nose really wants to move down. The key here is to generate so much nose down pitch rate that you will go right past the 60-degree point and hopefully keep going until it is below 45 degrees. If this happens, the aircraft will recover. Note that between 60 and 45 degrees, the nose would like to go up, but nose down momentum keeps it going down although at a slower and slower rate. If the nose didn't get moving fast enough, it wouldn't have enough momentum to overcome the tendency to pitch back up and you won't make it below 45 degrees. If it starts back up, you will need to reinforce that motion and go through another pitch rock cycle. This cycle will continue until you bust past 45

degrees and the aircraft recovers. It is just like rocking a car out of a snow bank. Usually one or two cycles should be sufficient to get out; however, very oscillatory deep stalls have taken up to five pitch cycles to recover.

### Departure and Deep Stall Recovery

It is important to understand each of the steps in the Out of Control Recovery procedures, and what you need to be looking for during each step. Figure 3 presents an expanded version of the CAPs (Critical Action Procedures).

● **Controls Neutral (Let Go and Watch).** The flight control system has cut you out of the loop, so you can't do anything to help at this point. While you are watching to see if the air-

**AIR FORCE FLIGHT TEST CENTER  
EDWARDS AFB, CA**

## **DEEP STALL RECOVERY**

● **IF THE AIRCRAFT DEPARTS**

- CONTROLS NEUTRAL (LET GO AND WATCH)
- THROTTLE MIL IF IN AB

● **IF DEEP STALL RESULTS**

- RUDDER OPPOSITE TURN NEEDLE (INVERTED)
- MPO OVERRIDE AND HOLD
- STICK CYCLE IN PHASE
  - REINFORCE ANY PITCHING MOTION
  - REVERSE STICK AFTER PITCH MOTION REVERSES
  - EXPECT HESITATION 45° NOSE LOW BEFORE RECOVERING
  - KEEP MPO ENGAGED AND FLY NOSE TO VERTICAL (200 KTS MIN)

● **TRANSITION FROM INVERTED TO UPRIGHT AND VICE VERSA ARE POSSIBLE**





# OUT OF CONTROL IN THE F-16

craft is going to self-recover or deep stall, you should be trying to locate the MPO just in case you need it later. Lots of pitch oscillation is a good sign you'll self-recover. If the nose gets near 45 degrees nose low and the aircraft is buffeting with airspeed increasing, expect a self-recovery.

## • Throttle MIL if in AB.

This is where the engine gets its best stall recovery logic. If the engine is compressor stalling in MIL, ignore it—your first priority should be given to recovering the aircraft. Once you are flying again, then worry about the engine.

• **Rudder Opposite Turn Needle (Inverted).** The CAP says "Full Opposite." Using full opposite rudder can stop and reverse yaw rate in less than a second. This can add to an already disorienting situation, so we recommend applying sufficient rudder force to stop the yaw rate. If full rudder is required, then use it; but don't just arbitrarily stomp on the rudder. For erect deep stalls, the yaw rate limiter is doing all the rudder work for you.

## • MPO Override and Hold.

Once you're sure you're really in a deep stall, get on the MPO and hold it engaged until you are done with your pitch rocks and have recovered with flying airspeed. Don't release it to answer radio calls.

## • Stick Cycle in Phase.

When you come on the MPO to start pitch rocking, reinforce any pitching motion you see. If the nose is moving down, then apply stick force to bottom out that motion. If you don't see any pitching motion or the nose is already going up, reinforce that motion. Don't be eager to reverse the stick. Wait until you see the nose stop and start moving again in the opposite direction. If it doesn't seem like your nose up input did anything, check to be sure the MPO is on while you hold stick force to keep the nose up. After 3 seconds or so, you will have stabilized as nose high as you're going to get; so reverse stick force and try to get some pitch rate going. If there is a lot of roll oscillation, try to time your stick reversals when the bank angle is at a minimum. Full aft stick at 90 degrees of bank won't get the nose up. When the nose comes down, there is a tendency to give up and reverse the cycle too soon. Remember, the pitch rate will be slowing down until you pass 45 degrees AOA. Expect the nose to hesitate approximately 45 degrees nose low before recovery and watch for some buf-

fet. If you give up too early at this point, you may be costing yourself an extra cycle. Unless the nose really starts back up, hold it down and wait. Once the nose pitches down toward the vertical, keep the MPO engaged and track the vertical until reaching 200 knots, altitude permitting.

Transitions from inverted to upright and vice versa are possible if your aren't thinking *fly the nose straight down*. The best way to prevent this is to aggressively track the vertical with the MPO engaged. Anticipate the requirement for stick inputs to stop the nose in the vertical and then keep it there.

## The Bottom Line

If you find yourself in a departure, give the aircraft a chance to self-recover. At most operations CGs, it will do just that. If it doesn't, then get on the MPO and begin pitch rocking. Remember to cross check your altitude and, if you are still out of control passing 10,000 feet AGL, then EJECT.

We hope that this article and the one published last month on high AOA maneuvering will help should you find yourself in a tight spot in the F-16. If you want some more explanation, or just want to talk F-16 high AOA, feel free to call us at the F-16 Combined Test Force, AUTOVON 527-2555 or 527-3112.





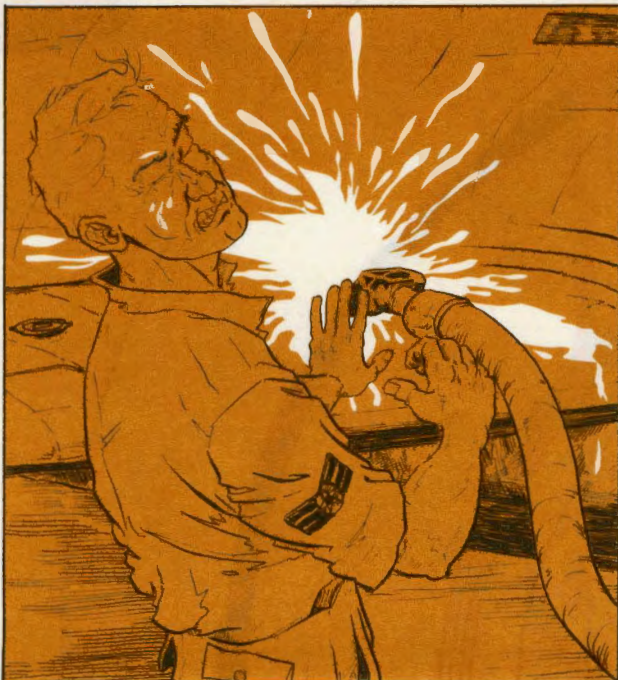
# CHOCK TALK

## Incidents and Incidentals with a Maintenance Slant

### State—of—the—Art Wisdom from a Dinosaur

Capt Allan W. Muller  
325 AGS  
Tyndall AFB, Florida

**N**ot long ago, a maintainer was over-wing refueling his T-33. Unlike newer tactical airframes, the fuel cells are filled individually; much like your family chariot. Just a nozzle into a hole. In the course of events, the refueling truck ground aborted before finishing. After a short delay and a quick fix, the POL truck was again shooting JP-4 to the thirsty T-bird. Unfortunately, the crew chief had withdrawn the nozzle from the refuel point to troubleshoot, and had only partially re-inserted it. He had failed to backtrack on his checklist and got a blast of fuel in his eyes as a result. Luckily, the emergency eyewash station was not only ready, but its location was commonly known. A fast dash there and then a second one to the emergency room relieved the discomfort, but not the embarrassment.



“That was on a T-33, and I don’t work on a dinosaur,” you say. But maintenance has shown, many times, that when you interrupt a maintenance procedure—even one you think you “know by the book”—you find you should have been paying closer attention. Let’s use our eyes to help absorb knowledge, not jet fuel.

### Runaway Bins

**S**ecurity police on flightline patrol at a TAC base discovered two damaged aircraft inside the restricted area. High winds had blown two mobility bins about an eighth of a mile before they struck the aircraft. One of the jets suffered a 3-by-4-inch hole in the fuselage while the other had a damaged right stabilizer.

The spring months bring high winds at many TAC bases, particularly in the west; and some areas experience strong, gusting winds year round. Keep that in the back of your mind when the winds start to pick up and take a good look around to ensure that everything is either safely stored inside or securely fastened down.

### Don’t Make Work

**W**hile a maintenance specialist was doing some work on the right vertical stabilizer of an F-15, a hammer fell from the working platform of the B-2 stand. The hammer struck the top of the horizontal stabilizer, creating a two-inch crack.

Do you have a plan for keeping all your tools under control so you don’t make unnecessary work for yourself or someone else?



# I JUST CUT MY FINGERS OFF



I just cut off my fingers



**Y**ou have heard of *There I Was* stories. Well, here is one that I know is true.

About 6 years ago, I decided to purchase one of those hobby man's dream machines. It was a 10-inch table saw with guards and fences. It also came with the standard owner's manual that I immediately placed in a drawer. The only reason that I kept manuals on hand was to order new parts in the event something should break. Of course, I did not bother to read the instructions because I knew how to operate a table saw.

Well, I finally took the opportunity to look at the owner's manual the other day. Guess what? On the very first page of the book, there are 38 safety rules. One of the rules was **"Never reach over or behind the moving blade with either hand for any reason."**

So what, accidents only happen to the other guy. Had I bothered to read these rules earlier, I could have prevented many of my present problems.

Anyway, I had the saw for a long time and I had been using, or misusing, it on various occasions with no problems. That meant that I was doing things safely. Right? Wrong!

By now, you have already guessed what this story is leading up to; but you don't know

to what extent I was injured.

I was cutting a board with my left hand forward of the blade, but my hand was not directly in line with the blade.

Everything was going along fine until the blade bound and caused the wood to kick back, allowing my hand to make contact with the blade. I cut off my little finger and fragmented the bones and cut off the tip of my ring finger. With the middle finger, I was lucky: only the first joint and part of the next was cut off. The index finger was spared of any injury, but the thumb was cut  $\frac{3}{4}$  of the way through and split open nicely.

I realized, as if zapped by an electrical shock, that *I just cut off my fingers!* Seeing two of them on the table and the other on the floor, I considered going to see the doctor in the very near future. But wait, there was one problem. First, I needed to stop the bleeding. How? Apply pressure with my other hand was my first thought, but there were at least three fingers bleeding badly and I only had one hand.

There are a few things that you ought to know for background information. I lived 3 miles from town, my nearest neighbor was 100 yards away, I was home alone and it had been snowing for 20 hours and there were at least 12 inches of new snow on the ground.

I wasn't thinking in the

clearest frame of mind. I was bleeding and I needed help before I bled to death.

Idea—Call for help. Two steps later—Wait I can't dial, hold the phone or possibly stay conscious long enough to explain to an emergency team where I live, nor can I drive.

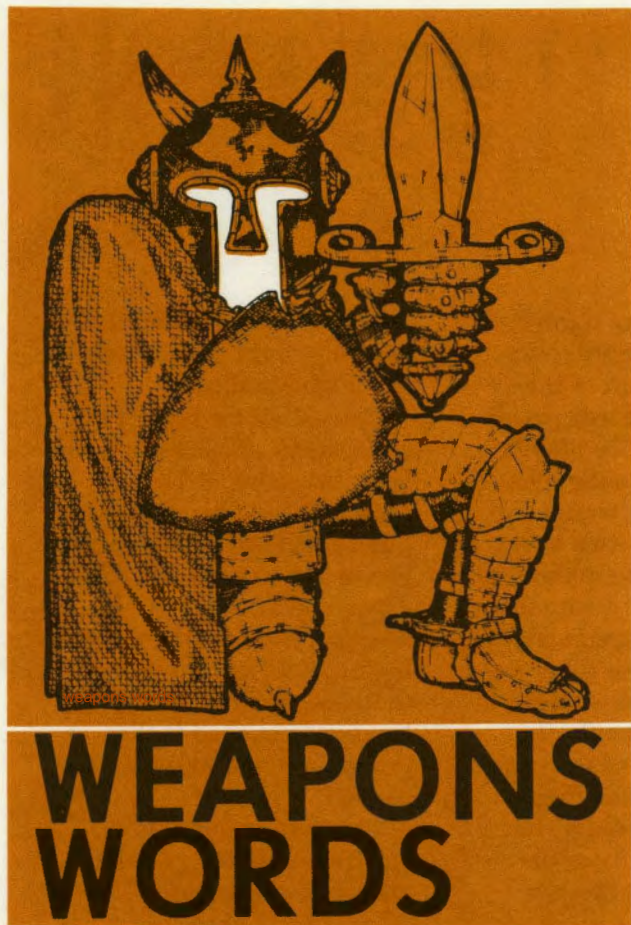
Another idea—Yes, the neighbor sounds like the most logical. So I ran the 100 yards to his house, and just before leaving, managed to pick up my little finger and turn the saw off.

The first question my startled neighbor asked was, "Did you pick up all of the cut-off pieces?" I answered, "Yes." When my neighbor returned from taking me to the hospital, he went to my house and found the other fingers and brought them back to the emergency room. Thanks to him, I have fingers today that I would not have otherwise.

Modern medical technology is wonderful. By using pieces of my little finger, the doctor was able to reconstruct my thumb, middle finger and ring finger. I'm very lucky.

Ok, so what's the bottomline? **Read and obey your owner's manuals.** Notice I did not say just a table saw manual—but owner's manuals. They contain information vital to your health. Accidents do not always happen to the other guy. One happened to me and I will long remember my mistakes. ➤





## Steady As You Go

**A** load crew was sent out to load their fifth integrated combat turn (ICT) of the night. Prior to starting the load, everyone donned their chemical gear and gas masks just as it began to rain. The combination of chemical gear and inclement weather conditions severely restricted the load crew's movement and visibility.

The first AIM-9 missile was loaded without any problem; but during the second missile load, the umbilical block was allowed to contact the launcher rail, knocking the block to one side and rendering the missile unusable.

Wear of chemical defense ensembles and bad weather should be warning flags that caution you to slow down and take greater care with the task at hand. Don't kid yourself that your normal dexterity and work pace aren't affected. They are. Work slower accordingly.

## What's Around You?

**A** munitions maintenance crew was re-warehousing some AGM-65 missiles following a required inspection. The fork lift driver was carrying a load of missiles in double stacked containers. While backing up, the fork lift bumped the curb in front of the storage building. The sudden jar caused the top container to fall about five feet to the ground.

Check the area where you're going to be moving munitions before you ever start. Make sure there's no unevenness in your path or objects lying around that can cause an unhappy ending to your story.

## What's the Hurry?

**A** forklift driver was moving all up round (AUR) containers from a flatbed truck for storage in a weapons magazine. Since the igloo doors were too small for the AUR container to fit through on the forklift, they were moving the containers to a hand dolly for easier handling inside the magazine.

The forklift driver failed to tilt the forklift tines back or lower his load to a safe height before moving the container from the truckbed. Upon reaching the front of the storage shelter, he made a sharp right-hand turn in order to place the container as close to the magazine door as possible. As the driver turned, he applied the forklift brakes, causing the center of gravity to shift suddenly. As a result, the AUR container of four AIM-7 missiles slid off the forklift and fell about four feet to the ground.

A little less haste and more caution would have prevented an expensive trip back to the depot for these missiles.



# CLOSING WITH HONOR

**O**n 2 March 1987, the 84th Fighter Interceptor Training Squadron, Castle Air Force Base, California, stopped the clock on its flying safety record at 184 months (that's over 15 years) without a Class A mishap when Major Jon T. Peters, Commander, delivered T-33 (Aircraft Serial No. 580513) to the March AFB Museum in southern California. This marked the last flight for the squadron which was inactivated February 27th.

The mission of the 84th was air defense target support, and over 50 percent of the flying was accomplished while deployed to locations all over the CONUS and Canada for NORAD exercises, ORI support and as targets for Air National Guard training.

As the 84th is dropped from the TAC Tally, a hearty congratulations is extended to the men and women of the 84th for meeting the challenge and making it happen. Well done!



## TAC OUTSTANDING ACHIEVEMENT IN SAFETY AWARD

**S**gt Walter W. Stephens, an integrated avionics test station team member, discovered corrosion on the electromagnetic switches of an A-10A aircraft stability augmentor system (SAS) control panel after it disconnected in flight. After a second SAS control panel was received in the shop for the same malfunction, Sergeant Stephens verified the second panel exhibited severe corrosion as well and decided that other SAS control panels installed on our A-10 aircraft should be inspected for corrosion. He recommended a one-time inspection.

During the inspection, it became apparent that water was entering the aircraft cockpits through the canopy sills and dripping onto the top of the SAS control panels while the aircraft were parked. Sixteen aircraft SAS control panels were inspected. Of these sixteen, ten were found to be severely corroded and required disassembly and repair.

The well-coordinated inspection spearheaded by Sergeant Stephens ensured that all aircraft were mission-ready and met their originally scheduled flying missions during the inspection.



**SSgt Walter W. Stephens**  
57 CRS, 57 FWW, TFWC  
Nellis AFB, Nevada



Maj Tom Hughes  
335 TFS  
"B" Flight Commander  
Seymour Johnson AFB,  
North Carolina

**P**rofessionalism is a word we often use to identify the quality of performance which we exercise during our work routine. Those of us in the military should understand that being identified as a professional takes years of practice, dedication to excellence, integrity and constant vigilance to maintain peak performance. My purpose for writing this is to focus on those attitudes and qualities that we need to improve our professional status.

As Webster points out, professionalism is "the conduct, aims or qualities that characterize or mark a profession or a professional person." As professional aviators and Air Force officers, however, this definition takes on additional meaning. In the Air Force, we have both a duty and a responsibility to be accountable to our fellow citizens. Therefore, we must continually work to improve our operational skills and commitment to service in order to preserve and protect our professional reputation.

In the "blue suit" community, we must constantly be aware that "service" is indeed our profession. We have elected to participate in this vocation and, therefore, must be keenly aware that we are continually under the scrutiny of our civilian counterparts. As with any service industry, our ability to perform our designated tasks must be the best it can be at all times—without compromise. Our families, country and very

# PROFESSION

## A Word from the Flight Commander's



lives depend on it. Flying into the teeth of a determined enemy armed with only the minimum knowledge to get the job done may work once, if we're lucky; but it won't keep us alive or win wars over the long haul.

What does professionalism mean to us as Air Force aviators? Simply stated, we must examine every nook and cranny of our mission and work to be the best in order to be most effective. Being lethargic, accepting the minimum as a

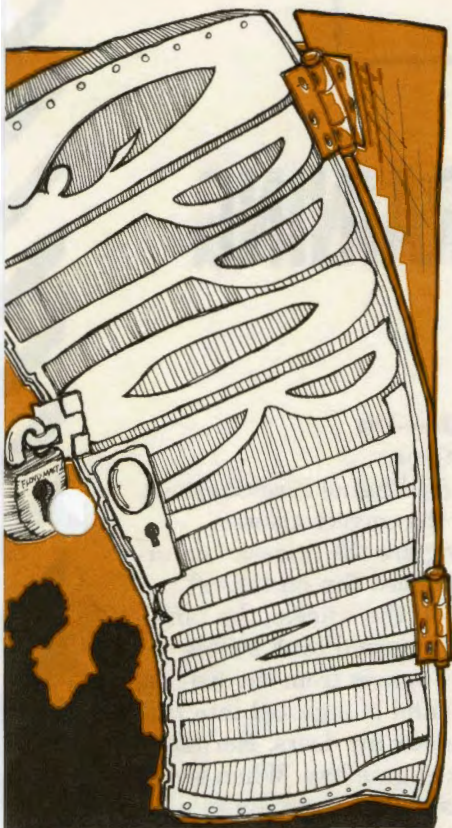
standard or settling for second best is not good enough. No one remembers who came in second, but history praises and people remember a winner: those who take charge of their profession and make things happen.

How do you get to be a professional? Part of this goal is achieved by cultivating a strong positive mental attitude. Don't sit back and complain about how bad things are. The door to opportunity is always marked "push and pull." This



# ALISM

## Corner.



implies action on your part. Developing the ability to critically look at a situation and articulating ways to improve it is the first step in developing a "can do" attitude. It takes little energy to ignore problems and the rewards are small. With a little drive and initiative, you can get your ideas heard and make an impact on the way your unit does business. It takes work and the right mental attitude to convince people around you that something needs to be fixed, but the re-

wards are great—recognition, a sense of accomplishment and better mission effectiveness for everyone. By planting the seed of positiveness in yourself and nurturing it with persistence, you can harvest a winning character.

fessional habits. Continuous emphasis on safety and good air discipline in flight operations are basic to our profession. We must live up to professional standards, follow established procedures and build solid habit patterns that can be

## THE DOOR TO OPPORTUNITY IS ALWAYS MARKED "PUSH AND PULL."

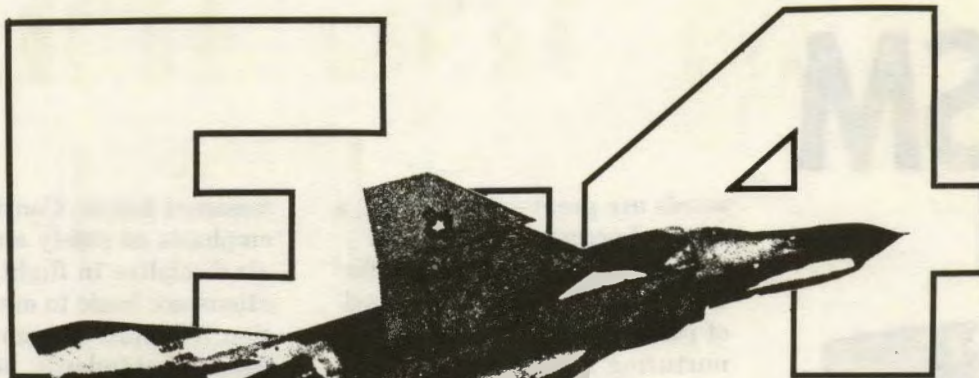
A winning character is really a matter of showing others, subordinates and superiors alike, what can be accomplished with a little desire and elbow grease. Accomplish assigned tasks the right way; know the rules and follow them. We can't accept cutting corners anywhere—in mission planning, mission execution or in our additional duties. If we do, we teach our younger officers and fellow crewmembers that "getting by" is okay and that rules may be selectively obeyed or broken as each person sees fit. This dangerous example erodes discipline and can be lethal in the combat arena. Challenge your fellow crewmembers to develop their own winning character, to improve their skills to peak perfection, to live by the rules and, if the rules aren't right, to change them within the system. People who foster positive thinking and encourage others are doing something we all aspire to do. They are building integrity and exerting leadership.

Be recognized as a leader through positive acts and pro-

relied upon when situations start to deteriorate. We would be foolish to think that we can teach poor techniques and poor habit patterns to our younger flight members and then expect them to perform in a professional manner under stress. It just won't happen. You are the leader. It's your responsibility to develop and encourage good habits.

Finally, seek to develop and keep a professional reputation. Do you really want to be professional? Are you willing to pay the price for excellence? It requires good habit patterns, sound judgment and acting in a responsible manner, both on and off duty. Reviewing all aspects of your job with a positive mental attitude is the raw material from which true professionals are made. Can you be called a professional by those around you or do you just get the job done? The reputation you cultivate now will determine your success both today and in the future. Only you can make the commitment. What professional destiny awaits you? ➔





F-4 Emergency Situation Training

# EMERGENCY SITUATION TRAINING

Maj Randy Spangle  
TAC/DOV

**SITUATION:** Your Phantom is configured with a high performance centerline tank (HPT). You have completed after runway lineup checks and you're cleared for takeoff. You check the engines at 85%, everything looks good, so you release brakes for another routine takeoff. Your pitter is calling the pre-briefed speeds up to takeoff speed. At liftoff, you feel and hear a loud bang on the left side of the aircraft. A quick check of the engine instruments reveals the left fire and overheat lights are illuminated. Shortly thereafter, the right fire and overheat lights flicker, then come on steady.

Wha'cha gonna do now, Ace?

**Option A:** Put the simulator on freeze, this has got to be an EP sim given by a sadistic SEFE. This couldn't possibly happen in the jet—. Wrong! Although this emergency probably occurs more in the sim than in the jet, it has occurred four times in the last two years and it could happen again. This EP should be practiced during EP simulators.

**Option B:** Eject. Do not pass "Go", do not collect \$200.—This may be the final option if you can't get the fire to go out. However, it should not be your first choice.

**Option C:** Throttle good engine A/B, throttle bad engine off, check for further indications of fire. If still on fire, go to Option B.—This may seem like a good option. However, you don't know for sure which engine is the bad engine; and, since this does nothing to remove the source of the fire, you won't be the first to end up going to Option B.

**Option D:** Throttles—Afterburner

## Landing Gear Handle—Up External Load—Jettison

Obviously, the boldface for Engine Fire/Overheat or Failure on Takeoff is the correct answer.

**DISCUSSION:** Following are the "classic" occurrences during an HPT induced fire on takeoff. When the weight comes off the wheels, the tank pressurizes regardless of external tank switch position. Pressurized fuel sprays from the leaking area (filler or standpipe) and is ingested into the engine bays through the aux air doors. Normally, more fuel enters the left engine bay. When the fuel in the engine bay explodes, normally in a left/right sequence, the left engine compressor stalls and flames out. The left fire and overheat lights come on followed shortly by the right fire and overheat lights. Fortunately, in all past occurrences of this type, the right engine has continued to operate, although engine instruments may have been inaccurate. **When confronted with an engine fire on takeoff, the crew should not try to analyze what type fire they have. It is imperative that they perform the boldface and jettison the HPT if loaded.** Attain a safe altitude while avoiding unnecessary turns, then continue to handle the emergency using the checklist. All F/RF-4 aircrews must develop the discipline, habit patterns and knowledge to correctly respond to this or any aircraft emergency. Proper prioritization and correct and timely execution of boldface procedures will make the difference between a successful landing and a mishap statistic.





# TAC TALLY

CLASS A MISHAPS
AIRCREW FATALITIES
TOTAL EJECTIONS
SUCCESSFUL EJECTIONS

TAC		
MAR	THRU 1987	Mar 1986
1	4	5
1	4	2
0	3	5
0	3	5

ANG		
MAR	THRU 1987	Mar 1986
3	3	2
3	3	0
2	2	4
2	2	4

AFR		
MAR	THRU 1987	Mar 1986
0	1	0
0	1	0
0	0	0
0	0	0

## TAC'S TOP 5 thru MAR 1987

1st AF	
class A mishap-free months	
79	318 FIS
25	325 TTW
14	57 FIS
14	5 FIS
5	48 FIS

9th AF	
class A mishap-free months	
49	33 TFW
22	507 TAIRCW
19	1 TFW
13	31 TFW
8	354 TFW

12th AF	
class A mishap-free months	
71	USAFSO
47	366 TFW
31	355 TTW
29	27 TFW
29	479 TTW

ANG	
class A mishap-free months	
212	182 TASG
196	110 TASG
171	138 TFG
153	177 FIG
148	114 TFG

AFR	
class A mishap-free months	
79	482 TFW
78	301 TFW
69	924 TFG
57	906 TFG
53	442 TFW

DRU's	
class A mishap-free months	
192	USAF TAWC
126	28 AD
5	USAF TFWC

## CLASS A MISHAP COMPARISON RATE

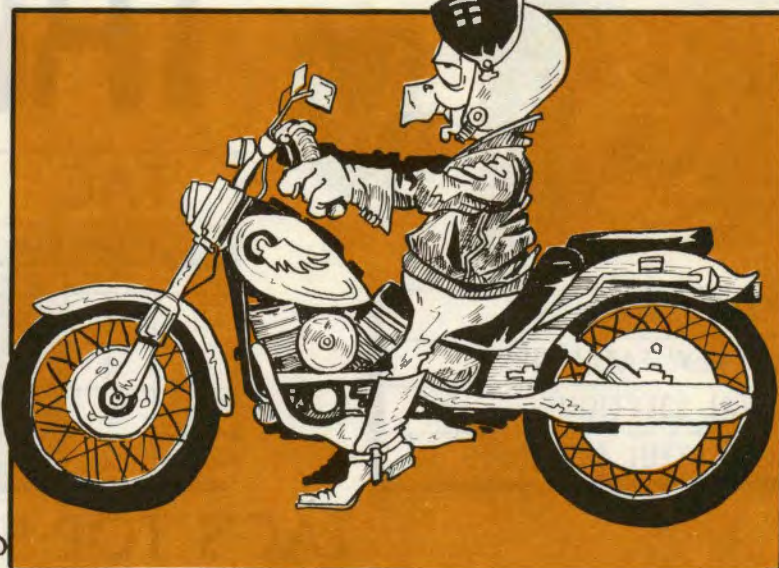
(CUM. RATE BASED ON ACCIDENTS PER 100,000 HOURS FLYING TIME)

TAC	1987	3.5	2.7	2.3									
	1986	4.8	6.8	5.4	4.4	4.1	3.7	3.6	3.2	3.4	3.9	3.9	3.8
ANG	1987	0.0	0.0	4.4									
	1986	4.3	2.4	3.1	2.3	2.7	3.0	2.5	2.2	2.4	2.6	3.2	3.0
AFR	1987	23.1	12.7	7.9									
	1986	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.5	4.6	4.2	3.9

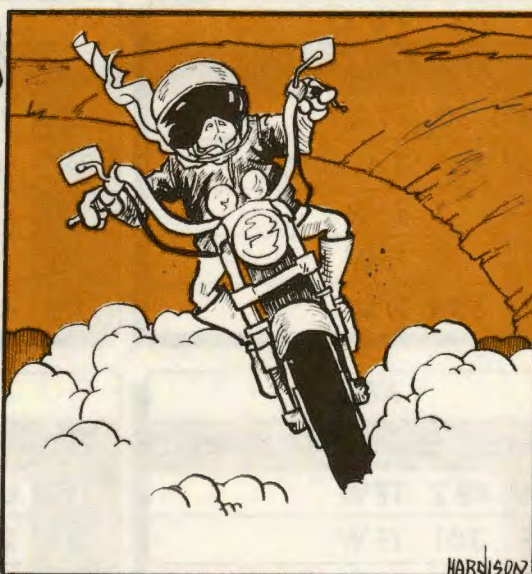
JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC



FLEAGLE



LET'S SEE WHAT THIS HOG WILL DO.



HARRIS/DZ



FOLKS SURE DO GET IN A SNIT WHEN THEY ARE HIT BY A TWO-WHEELER.

YEAH... SOME EVEN HIT BACK.

