

# TAC ATTACK

JUNE 1982



DAVID GARCIA



# Angle of Attack



**W**e are getting into the heart of boating season. Right now, the Coast Guard Auxiliary is having their National Courtesy Marine Examination Month to promote the fact that they'll give your boat a free safety inspection. June 6–12th is National Safe Boating Week. And we have a feature article on boating tips called "Summer Boating Refresher" to help you launch the season.

Most of us haven't dealt directly with the factories that make our airplanes. There's a small military detachment at the plants to ensure that we get the quality product we're supposed to get. That's what "How They Do It at the Factory" is all about. It's a reminder that quality assurance has to be applied at all levels of our operations.

Two articles on flying give us something to think about. "The Computer Aims to Please" tells us about

a quirk in the F-16 that we need to be aware of if we're going to fly the electric jet—or hope to fly it. "How to Avoid a Blind Date with Terri Firma" applies to those of us who fly any airplane. The article offers some good reasons why "legal" minimums shouldn't necessarily be our minimums.

In the air or on the water, don't press the bad weather. If you have doubts, don't launch. Why make a bad day worse. Instead, wait for a good day and make it better. This summer's bound to have plenty of good days.

*Richard K. Ely*

RICHARD K. ELY, Colonel, USAF  
Chief of Safety



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# THE COMPUTER AIMS TO PLEASE

**By Major Bill Powley  
PACAF Flight Safety**

Imagine, if you will, that you have just parked your Fox 4 or Alpha 7 in the stall for the last time. You saunter up to the bar just in case your buddies would like to talk about your new assignment—the F-16 “Electric Jet.” You really feel good. You know that all the experience you have gained in conventional (now to be forever known as “non-electric”) aircraft will be used to great advantage with the superior performance and handling qualities of the F-16. *Not so fast, GI.* Only 98 percent of that experience can be used. The other 2 percent will not “compute.” This is most obvious during takeoff and landing while the aircraft is on the runway. The pitch input made by the pilot in some cases only “initiates” a sequence; it does not tell the whole story.

The most obvious situation where pilot stick inputs

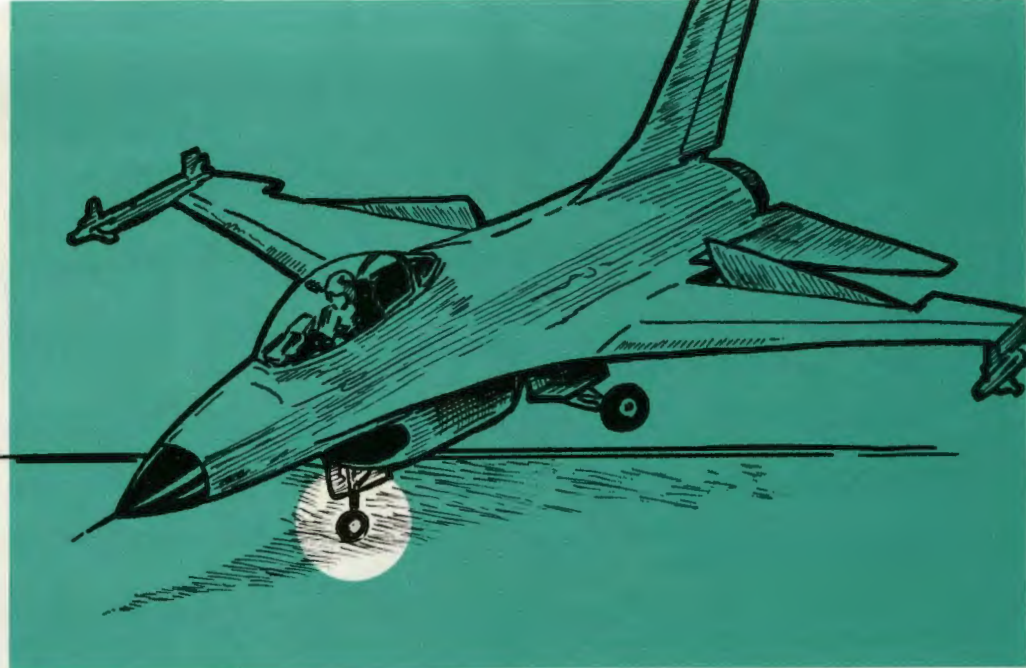
are overridden by the flight control computer (FLCC) is in the landing rollout. Block 10 and previous aircraft show a tendency for the nose to rise with no additional input required by the pilot when the weight-on-wheels (WOW) switch mates. This action cuts out the angle-of-attack (AOA) input to the computer and results in a slight pitch up of about 2 degrees. If maximum aero braking is being held at 13 degrees AOA, this could result in an overshoot of 15 degrees AOA, damaging the engine nozzle and speed-brakes. All of this is without any pilot input on the stick. As a matter of fact, the pilot may have to take action to prevent the computer from allowing this pitch up to occur.

This situation is corrected in Block 15 aircraft by a software change that fades out the AOA input when the WOW switch mates rather than allowing an immediate AOA cutout. During AOA fade-out, the tail gradually moves to the null (neutral) position.

Another not-so-obvious situation when the pilot input is changed by the computer is during a nose-down command when the aircraft is on the runway and the weight is off the main gear. This may seem like an unusual situation to be in, but experience to date shows that two mishaps are related to this type of maneuver. Fortunately both pilots walked away.



# EASE



Here's a simplified version of what happens. A slight (two pounds of pressure) nose-down input on the runway is correctly interpreted by the computer as a fly-down command. At airspeeds above 100 knots (depending on gross weight) there is sufficient lift on the tail to reduce the weight on the main landing gear enough to put the FLCC in the airborne mode of operation. Trying its best to please the pilot, the computer senses the aircraft is not doing what the pilot wants, which is really not to fly down but to stay on the runway. Not knowing the difference, however, the computer commands more nose-down slab authority without any additional input by the pilot. This process continues until the computer has commanded full nose-down slab authority (full horizontal tail trailing edge down).

At the higher airspeeds this gets very sporty. You are now in command of a 17,000 pound wheelbarrow. Flying the F-16 on the nose gear only is not a recommended procedure.

The point to remember is that there is enough stabilator authority at high airspeed to lift the two main gear off the runway with the only pilot input being two pounds of forward stick pressure, a seemingly innocuous pilot action. The nose gear tire does not hold up well under these conditions and soon fails. What happens after this depends upon many variables, but the chain of events is probably not going to be pleasant.

Where could this scenario happen? It has already happened on takeoff, where the aircraft was intentionally held on the ground above takeoff speed, and

on a hot landing, where the nose gear was lowered and held on the runway immediately after touchdown. In each case, the nose gear tire blew out. Consider landing in a high crosswind where the approach speed may be a little above normal to account for gusts and the like. The Dash One says, "If the crosswind is significant, fly the nosewheel to the runway immediately after touchdown." Here a great big red warning flag should go up in your mind that says, "DO NOT APPLY NOSE DOWN PRESSURE TO HOLD THE NOSE GEAR FIRMLY ON THE RUNWAY." The choice of words "fly the nosewheel" in the Dash One is critical. (As a matter of fact, takeoffs at higher than computed speeds have shown that the nosewheel will stay on the runway without any stick input. You have to pull back to get it off the runway.) You don't hamfist the F-16 in the landing pattern. You use your kid gloves. And you fly it just where you want it (not stop-to-stop) all the way to turnoff.

The old axiom that the mission is not over until you're at the bar is still true for the F-16. An additional axiom, though, for the responsive electric jet is that the flight is not over until you are at least 50 feet away from the aircraft. (The flight starts, therefore, whenever you approach within 50 feet.) The air-chine was built to fly and it does it superbly. In fact, it doesn't want to quit. With the narrow wheelbase and light weight of the F-16, you don't get the feeling that you've really landed and are on terra firma until you're at taxi speed.

A few new habit patterns have to be established for the electric jet. One is, "What you see isn't always what you get." Sometimes your computer is not your best friend—but it does aim to please. ➤



# Aircrew of Distinction

On 14 December 1981, COL RICHARD C. WHEELER and CAPT EMMET R. BEEKER III were flying an F-111A on a local surface-attack training sortie. During a 500-ft run-in for a pop-up attack, the crew suddenly saw several birds in front of them. They pulled up hard, but at least one of the birds hit the nose of the airplane and buckled the radome. The entire radome shredded and peeled back over the nose of the airplane. The crew continued to pull up to gain altitude for possible ejection. The stall warning horn sounded, the left engine rolled back to idle, and both engine spike lights came on.

Colonel Wheeler moved the wings forward as Captain Beeker selected override on both spike controls to insure proper spike positioning. The flight lead was informed of the situation and asked to rejoin. As he joined, he saw fiberglass strands from the shredded radome streaming down the right side of the aircraft. The crew decided to land immediately because their only good engine was threatened. They headed directly toward Mountain Home Air Force Base about 25 miles away, notifying approach control and the supervisor of flying of their emergency.

The aircrew prepared themselves for the possibility that the airplane might yaw when the slats came out, since the damaged beta probe could be providing wrong information. They completed the single engine checklist, and the aircraft did yaw about 10 degrees left when the slats were extended. The aircrew moved the flight control disconnect switch to override to eliminate the yaw and then lowered the flaps and landing gear without further problems. On final approach at 300 feet above the ground, the escort aircraft told them their airspeed was 180 knots and started his go-around as Captain Beeker cross-checked the inertial system's ground speed readout, which was the crew's only source of aircraft speed. Just then a part of the shredded radome blocked Colonel Wheeler's view of the runway. He quickly transferred control to Captain Beeker, who safely landed the airplane.

The quick reactions, superior systems knowledge, excellent crew coordination, and professional competence displayed by Colonel Wheeler and Captain Beeker prevented the loss of a valuable aircraft and possibly their own lives. They have earned the Tactical Air Command Aircrew of Distinction Award. ➤

Col Richard G. Wheeler-366 TFW Mountain Home AFB ID



**Col Richard G. Wheeler**  
366 TFW  
Mountain Home AFB, ID

Capt Emmet R. Beeker III 389 TFTS, 366 TFW Mountain Home AFB ID



**Capt Emmet R. Beeker III**  
389 TFTS, 366 TFW  
Mountain Home AFB, ID



# TAC Safety Awards

## *Crew Chief Safety Award*

**A1C MARK WEDEMEIER** is this month's winner of the Tactical Air Command Crew Chief Safety Award. Airman Wedemeier is a member of the 561st Aircraft Maintenance Unit, 37th Aircraft Generation Squadron, 37th Tactical Fighter Wing, George Air Force Base, California. Airman Wedemeier has earned this award by his alertness on at least two occasions.

On the first, Airman Wedemeier was launching an F-4G. The preflight inspection had been performed by the previous shift. Airman Wedemeier and the aircrew made their walk-around inspection; then the aircrew entered the cockpit. After strapping the aircrew in, Airman Wedemeier started down the boarding ladder, taking one last look around. Just then he noticed that the canopy interlock block was hanging loose rather than attached to the seat. The mission was aborted. Airman Wedemeier's attention to detail in finding the loose interlock block possibly prevented an inadvertent ejection or ejection through the canopy.

The following day, Airman Wedemeier was launching another F-4G. The aircraft had also already been preflighted, but it had required some last-minute maintenance. Airman Wedemeier found a 10-inch screwdriver inside the auxiliary air door when he



**A1C Mark Wedemeier**

made a walk-around. At the very least, he saved the sortie, which would have been grounded for lost-tool procedures.

Airman Wedemeier is a dedicated professional with a strong concern for safety. He has earned the Tactical Air Command Crew Chief Safety Award.

## *Individual Safety Award*

**SSGT JOSEPH E. WINN** is this month's winner of the Tactical Air Command Individual Safety Award. Sergeant Winn is a weapons load crew chief with the 429th Aircraft Maintenance Unit, 474th Aircraft Generation Squadron, 474th Tactical Fighter Wing, Nellis Air Force Base, Nevada.

Sergeant Winn has a keen eye for unsafe conditions and corrects them on the spot. During end-of-runway duties, Sergeant Winn's load crew was arming F-16s before takeoff. Sergeant Winn detected a cotter pin missing from the striker plate of a BDU-33D/B practice bomb loaded in a SUU-20 bomb dispenser. He notified the pilot of the explosive and FOD potential and corrected the problem. Sergeant Winn's system knowledge and alertness prevented possible damage to equipment and injury to personnel.

Another time Sergeant Winn smelled an odor of natural gas in the AMU. He reacted quickly and found a leaking underground gas line. He evacuated personnel from the area and called civil engineers. His quick thinking and direct action stopped a hazardous



**SSgt Joseph E. Winn**

condition and prevented possible injury to the people working in the building.

Sergeant Winn is competent, enthusiastic, and safety conscious. He sets an outstanding example and has earned the Tactical Air Command Individual Safety Award.





**By Capt Gale E. Clouse, Jr.**

(Editor's Note: This is a tri-command article. It's an interview with Maj George Knirsch of Systems Command; he is a USAF F-15 acceptance pilot at Detachment 42, Air Force Contract Manufacturing Division (AFCMD), McDonnell Douglas Corporation, Saint Louis, Missouri. The interview was done for *TAC Attack* by Capt Gale E. Clouse, Jr., associate editor of the *MAC Flyer*, Scott AFB, Illinois. The purpose is to give us a better idea of how the Air Force plant representative's office (AFPRO) can help provide a safer product to us, the users.)

*What emergencies have you had during flight acceptance?*

**Major Knirsch:** The F-15 has been a pretty clean machine for me. In the early part of the program, we had a few engines that stalled. Engine problems have been the largest number of our flight emergencies. Since July 1980 that problem has seemed to disappear, however. We're operating now in a relatively stall-free environment with current aircraft.

When an engine does stall, it really gets your attention. You think the back of the plane has come unglued. A very loud bang shakes the whole airplane, and it will be followed by a few more bangs if you don't get back to MIL power rapidly. But my closest brush with any type of disaster happened while flying in an F-18. I was in the rear cockpit of a TF model making a departure out of Saint Louis when we lost the canopy. This was the first time the F-18 was tested without the canopy; obviously it was not planned. It was quite windy but interesting data was gathered, which led to design changes which will prevent that from happening again.

*Any other close calls?*

**Major Knirsch:** One of the pilots here at the plant had a compressor stall on an F-15 engine after passing 6,000–7,000 feet. The engine torched off a good-sized flame. It was an afterburner blowout which caused the engine to stall. It's exciting in the cockpit; quite a bit of thrust is lost. He brought the airplane around and landed without further problems. We also had an isolated problem with the antiskid which caused blown tires and aircraft departure from the runway.

*Could you explain what the AFPRO office does?*

**Major Knirsch:** The purpose of the AFPRO office is to ensure that the government gets a quality product from the contractor. The purpose of Air Force flight operations at the AFPRO is to be the end-line quality control of the total system. We make sure that all of



the rest of the agencies that have spent time and money to produce the airframe and components have done their job properly and that the airplane is ready for delivery. The AFPRO itself has many different operations. It's not just a flying organization. It has quite an engineering effort, a very large contracts division, and industrial property and safety. We all assure the tax dollars are spent wisely.

*Tell us, how is the F-15 put together?*

**Major Knirsch:** The main assembly process is done in three major sections: the cockpit forward fuselage areas, the main fuselage area, and the tail section of the aircraft. The major section parts are identified by aircraft ship number during the process of building up the aircraft. For example, F-15C number 150 had its wings, main fuselage, tail section, and forward fuselage being built all at the same time in different sections of the main assembly area. As those parts grow into the shape of an aircraft, they move forward towards the main production area door. They reach a splicing area as a complete whole section; there the main three sections are spliced together. The systems are checked out to make sure the wiring is good, and they move out the front door of the building.

*What occurs between the time the F-15 leaves the assembly line and the acceptance flight?*

**Major Knirsch:** During that time the aircraft moves through a watershed hangar where the nose section is subjected to quite a gush of water to make sure the areas that hold electronic equipment are all watertight. Next, the F-15 avionics are installed. After this black-box installation and checkout, the aircraft is painted and readied for the flying status. Prior to the Air Force flying the aircraft, McDonnell Douglas test pilots fly it on its first airworthiness flight and any other flights required to assure each of the systems functionally check in accordance with the acceptance criteria. After that, Air Force accepts the aircraft in accordance with the same acceptance criteria, rechecking some equipment and checking anything not accomplished by MCAIR.

*After the F-15 is released for flight, what type of ground checks do you do prior to flight?*

**Major Knirsch:** The major portion of our ground checks are basically the same as the F-15 Dash Six profile. There are no special checks that we do. In fact the Dash Six ground checks are modeled much after our acceptance test profile (ATP). Most of the different parts within the airplane are "ATP'd" at the vendor prior to delivery to Saint Louis. We then ATP the whole airplane to make sure that all those parts work together properly.

*On your ATP, do you fly a standard FCF profile?*

**Major Knirsch:** It is not quite a standard FCF profile in the light of the Dash Six that everyone in the Air Force is accustomed to seeing. Our radar profile is the major difference. We fly the aircraft to the Part II specifications as spelled out in the contract, versus the particular FCF standards for the airplane. We check it in depth a little bit more than what an FCF will.



*Photo courtesy of McDonnell Douglas Corporation*

*How do you interface with company flight testing?*

**Major Knirsch:** We interface with the company in two ways. We fly dual sorties with them in two-seat aircraft whenever we get the chance. And we fly as support for the company pilots whenever they need us as chase or target. The company pilots also fly as targets for our sorties.

*How many flights does it take to "iron out the bugs"?*

**Major Knirsch:** Right now, it's taking a little more than four flights per aircraft. The norm is to see two company flights and two customer (Air Force) flights.



## HOW THEY DO IT AT THE FACTORY

It's not unusual to see the effort down at 3.7 flights per aircraft or as high as 4.3. This seems to be the normal rate for the last 2 years. The company just about demands two flights out of the aircraft. After their airworthiness flight where they speed-run the aircraft out to V MAX, there's very little fuel left to accomplish the lengthy radar checks that are necessary. If everything works just absolutely perfectly and a target is available in the right place at the right time, they will be able to get it in one flight. But it's a pretty comprehensive amount to do with the fuel available after making a speed run.

*What is the crew composition for acceptance flights?*

**Major Knirsch:** One pilot per aircraft. Every seventh F-15 off the production line is a two-seat model. The two-seat F-15D is flown on its acceptance flight with both front and back aircrew members fully qualified. We do integrate with contractor crewmembers. We very often fly target for the company, and they fly chase or target for us.

*Where do your pilots come from? What's their experience level?*

**Major Knirsch:** The pilots come from the Tactical Air Forces. When I first arrived in Saint Louis, I was qualified in the F-4. I checked out in the F-15 locally, as have two of my other pilots. Captain Skip Boles came to us from Bitburg AB, Germany. He was the first F-15 pilot to come from an operational squadron. We try to keep a person in the office who is tactically up to date so that we have a "realistic" acceptance flight check. We are not test pilots, and don't necessarily look for a test-pilot background for the job here in Saint Louis. We accept the aircraft for the government, and we like to consider ourselves tactically oriented.

*What are the weather limitations you operate under for the F-15 flights?*

**Major Knirsch:** We look for 1,500-foot ceiling and 3 miles visibility—basic VFR. We will not fly a first flight profile or a profile where we must shut down the engines unless we can get back to Lambert VFR. We plan for that time where total electrical failure may occur, or an engine just will not start. Our primary weather requirement is to see the ground, but we do fly many sorties where the amount of cloud cover makes no difference.

*At the completion of your F-15 acceptance flight, what takes place before the plane gets to its initial TAC unit?*



**Major Knirsch:** The aircraft engines are borescoped to make sure there is no damage to any of their internal sections prior to delivery. The airplane is cosmetically cleaned up; McDonnell Douglas touches up paint that may have been damaged or disturbed through the acceptance process. They hang external tanks and check them to assure they transfer fuel properly. Generally, they clean up any other





discrepancies that have not been corrected prior to that time. When the airplane is cleaned and readied to go, the company quality assurance personnel present it to AFPRO quality control people, who make a final aircraft inspection and sign the bill of sale (DD Form 250). At that time Tactical Air Command is notified that the F-15 is ready at the factory for pickup.

*Do you provide any special services to delivery pilots?*

**Major Knirsch:** We sure do. Each delivery pilot that comes in to pick up his aircraft gets a face-to-face briefing from one of our AFPRO flight acceptance pilots. This briefing includes local area procedures and safety hazards, his particular aircraft and maintenance problems we've had with it, and how those problems were resolved. The pilot usually gets a tour through the factory to see how his Eagle jet is put together. We assure that we have a supervisor of flying (SOF) available for his takeoff so that if he has any questions about his aircraft or problems once he gets airborne, we can help.

*How important is flying safety to your operations?*

**Major Knirsch:** Safety to our operations is absolutely paramount. We realize constantly that we are working with aircraft that could have some latent problem in them from the manufacturing process, which could be devastating to the pilot at any time. Each of my pilots is highly qualified and has to be able to work alone in an environment where he's the only decision maker. We cannot accept anything less than a totally safe operation. We cancel flights if all conditions do not favor safety.

*What is the most rewarding aspect of your job?*

**Major Knirsch:** It's in the compliments we receive from the field when they get their new airplane free of "squawks." In the past we ran a string of squawk-free deliveries that was up to 130 before we had one minor squawk. That's a very satisfying part of the job, when you consider the immense effort to produce an aircraft. Other satisfactions are assuring that contractual problems are solved.

*We understand the U.S. Navy will take over the management of AFPRO and begin to perform flight acceptance on the F-15. Is that true?*

**Major Knirsch:** The United States Navy is replacing the Air Force's management function in contract administration. We're in the process of bringing Navy flyers up to speed in the acceptance flying of the F-15 and F-18. At the present time I'm the government's only F-18 qualified acceptance pilot at McDonnell Douglas. We have three pilots checked out as F-15 acceptance pilots. Soon, we'll have a Marine pilot checked out. To cover the interim period after the Navy takes over and before all their people have arrived, two Air Force pilots (Captain Skip Boles and myself) will remain at the plant until the summer of 1983. We'll assure that there's a smooth transition and that all the new Navy pilots accept the F-15 to the standards that the Air Force has been used to in the past.



# TIPS

Any fool can criticize, condemn and complain—and most fools do.

—Dale Carnegie

## AIRPLANE WARNS, NO ONE LISTENS

On an air refueling mission at night, the A-10 pilot couldn't get a Ready light when he tried to open his air refueling receptacle. The pilot asked the boomer in the tanker whether or not the air refueling receptacle door appeared to be open. The boomer said he could see light around the door, so they tried to hook up and refuel. The boom bounced off the refueling receptacle and struck the center windscreen. That convinced the pilot not to refuel. But shortly afterwards, the Ready light came on. The pilot then refueled without any problems.

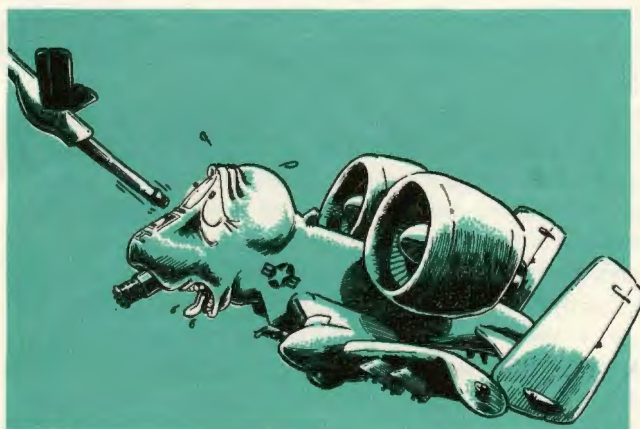
An hour later, the pilot was on final approach for landing. He saw what looked like sparks on his center windscreen and noticed that the windscreen

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TAC aircrewman

was cracked. He declared an emergency and landed without any problems.

The cracks, of course, were caused by the boom hitting the windscreen. The cracks spread out from a small fracture at the bottom right corner of the windscreen. The so-called sparks were apparently a glow in the cracks caused by the defog/deice system.

The cracked windshield was the result of the pilot ignoring what the airplane was trying to tell him. It wasn't ready to refuel. The Ready light comes on when the refueling receptacle door is open all the way. But the receptacle lights, which are what the boomer saw, come on when the pilot selects Open on his air refueling control. Moisture in the door may have frozen the mechanism at altitude. Without a Ready light, the pilot should not have been refueling. The airplane tried to tell him, but he wouldn't listen.



## FORMS GO BUMP IN THE NIGHT

It was o'dark-thirty when the F-16 pilot went out to preflight his airplane. At the airplane he reviewed the aircraft forms, did his walkaround, and climbed into the cockpit. The crew chief checked the intake and exhaust areas with a flashlight. Then the pilot cranked the engine; it started normally. As the pilot began to taxi, an expeditor noticed sparks coming out of the tailpipe. The expeditor told the crew chief, and the crew chief got the pilot's attention and had him shut down the engine.





Inside the engine they found the aircraft forms partially ingested. As best the pilot remembered, he had laid the forms down on the concrete after checking them. But it seemed to the crew chief that the pilot had actually placed the forms on the lip of the intake. If that's where they were, then the crew chief missed them when he checked the intake with his flashlight before engine start.

Wherever the forms really were, neither the crew chief nor the pilot made sure that the forms were removed to a safe area before the engine was started. That oversight on both their parts cost us seven sets of fan blades, a bearing assembly, and a fan case assembly. That's about \$40,000 worth of damage.

## FORWARD AND LOW-LOOK OUT

An F-15 pilot was having trouble air refueling. On his first attempt to make contact, he became erratic in the envelope; and the boomer sent the F-15 back to the precontact position to get stabilized. The pilot then moved in more smoothly and established contact with the KC-135. After taking on about 500 pounds of fuel, the F-15 suddenly moved forward and down to the inner and lower limits of the refueling envelope. The boomer called, "Disconnect," followed immediately by "Breakaway!"

But the tanker couldn't disconnect, because the nozzle was binding in the receptacle. The F-15 pilot lowered the nose when he heard the breakaway call, but he didn't pull the power back or make sure he was clear of the boom. The result was a brute-force disconnect below the refueling envelope. However, the disconnect was between the boom nozzle and the boom, not the receiver's receptacle. The F-15 flew home with the tanker's nozzle in its receptacle.

We had often heard that forward and low was the worst place to be in the refueling envelope. When



you get down there, the tanker can't pull the boom out. We heard that before there were F-15s, but it seems just as true today.

## THE MISSING WRITE-UP

On a transition mission in an F-15B, the instructor in the back seat took control of the airplane to give the student an unusual attitude from which to recover. The instructor noticed a lack of pitch response: he could only get  $2\frac{1}{2}$  Gs with full aft stick at 375 knots. The front cockpit's stick seemed to work OK; so the student in the front seat took back control, flew home, and landed without any problem.

Two days earlier, the airplane had been aborted for control augmentation problems. During trouble-shooting, the technician asked the pilots in both cockpits to disconnect the stick-force-sensor cannon plugs. They did, but the sensors proved not to be the problem. The pilots were asked to reconnect the cannon plugs. The pilot in the rear seat had trouble reconnecting the plug, so he told the technician that the plug wasn't secure. Then both pilots left to fly the spare. No one wrote up what they had done or the fact that the connector was loose.

Maintenance worked on the airplane, but they didn't notice the loose connector. The next day, the airplane flew; but the pilot in the rear seat never tried flying it. When the problem turned up on this flight, it fortunately wasn't at a critical point in flight. But it could have happened when the instructor was taking



# TAC TIPS

control to prevent a collision with another airplane or the ground.

So, who was responsible for writing up the problem? The technician could have helped; but, ultimately, it was the responsibility of the rear seat pilot who aborted to write up the condition of the cockpit he was leaving—even if he was in a hurry to get to the spare. Our responsibility to make good write-ups protects our fellow pilots and ourselves. It's more important than taking off on time.

## CLEARED TO CLIMB

Here's a situation you've probably either been in or will be someday: You're leading a flight of fighters; and the weather's not so great, but it's supposed to be good enough to join up underneath. You know that you might not be able to join up on top if you do a trail departure, so you decide to join up underneath. After takeoff you're cleared to climb to 10,000 feet. But as you near the base of the clouds, your flight hasn't joined up yet. What do you do?

That problem came up recently when a flight of two F-111s took off from the base where they had deployed. When the leader reached the ragged base of the clouds at about 3,500 feet, his wingman still hadn't joined up; but the wingman was close enough that entering the clouds could have been hazardous. So the flight leader decided to stay beneath the clouds.

At the same time, departure control was clearing another aircraft through the airspace below the clouds at 3,000 feet. Since the F-111 flight leader had not requested a deviation from his clearance to climb to 10,000 feet, the radar controller assumed there would be no conflict between the F-111s and the other airplane. The radar controller may have anticipated even more separation than was available because he was used to the climb rate of F-16s instead of fully loaded F-111s. Nevertheless, with a continued climb, the F-111s should have been clear of the opposing traffic.

But the F-111s hadn't continued their climb. To avoid the clouds, the flight leader had stopped climbing and may even have descended a couple of hundred feet. The departure controller noticed the problem when the F-111s were one mile away from the other traffic: their altitude readout indicated that they were only 300 feet above the civilian plane. The controller warned the civilian pilot of the potential

conflict and asked the F-111 flight leader to confirm his altitude. That's when the F-111 flight leader first told the controller that he was not climbing because of the clouds.



The civilian pilot spotted the F-111s, and they also saw him. Even though they had very little vertical separation, the airplanes stayed well clear horizontally. The civilian pilot estimated that the F-111s passed 2,000 feet in front of him. Of course, the 2,000 feet of separation was by chance, not design. The airplanes could just as easily have been on top of each other. The point is, they were supposed to have vertical separation.

Why didn't they? Because the F-111 pilot deviated from his clearance without advising the controller. According to the *Airman's Information Manual*, when you as a pilot have been issued a clearance to climb that does not include the phrase "at pilot's discretion," you must notify air traffic control anytime you cannot climb at a rate of at least 500 feet per minute. The same holds true for descents. If your clearance includes the phrase "at pilot's discretion," you may temporarily level off at an intermediate altitude. But, even then, once you've vacated an altitude, you may not return to it.

So, there's your dilemma. You don't want to go into the clouds with your wingman closing on you, but you may not level off or descend to avoid the clouds. What do you do? The only way out of the dilemma is to notify air traffic control that you have to deviate from the clearance. If air traffic control is working with you, they need to know what you're doing; so tell them. Save your unpredictability for the tactical phase of flight.



# NOW WHAT DO I DO ?



**By MSgt Phillip G. Henriksen  
HQ TAC Ground Safety**

Congratulations, ROTC, OTS, Academy, or PME 3 graduate. Welcome to your first supervisory assignment. This is your office and here is a list of the people you will be supervising.

*Me, a supervisor? Manage that many people? What did my instructor say? I can't remember. Where do I begin? They are all just sitting there.*

Sound familiar? At some point every supervisor or manager has been confronted with the realization that he or she is the boss and is responsible to get the job done, the sortie produced, the report written. To do that, the supervisor must lead his or her people to meet the established requirements. The question

How do I do it? surfaces very frequently. An answer is, simply through motivation, that's how. Here are some specific ways to motivate people:

- First, get to know them. If you don't take time and show interest, you can't begin to motivate people.
- Find ways to enlarge or enrich the job. Restructure it to make it more interesting to the worker.
- Rotate people's jobs. Change them to relieve boredom.
- Find ways to offer people more important, challenging, and interesting assignments.
- Praise people for work well done. Many managers are too "busy" or thoughtless to recognize and reward good work.
- Provide people the opportunity to discuss and participate in plans and decisions which affect them.
- Show genuine respect for your people.
- Provide your people opportunities for training and growth, personal and career.
- Explain the reasons for and the importance of the job or assignment.
- Encourage a friendly social atmosphere for the group.
- Help your people develop a high personal and professional pride in the quality and value of their work.
- Provide clear, specific, and reasonable job goals.

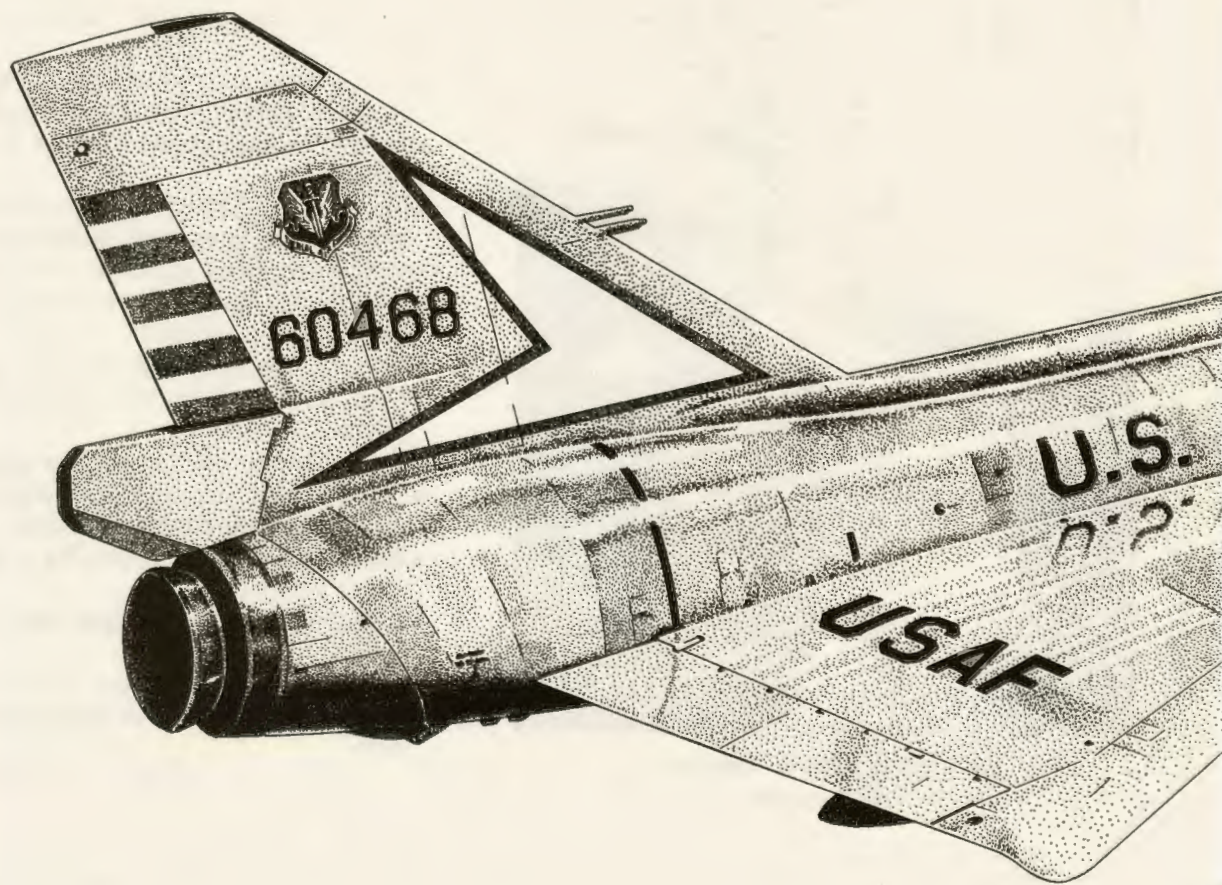
This list certainly isn't all-inclusive, and there are other variations on the same theme. But most importantly for the new supervisor, it's a place to start.

The next question is What do I motivate them to do? Again the answer is simple: to do the job—the right way. You are leading them to use common sense and to follow the tech data. If they do, then safety will follow naturally. Every good supervisor is concerned about the safety of his or her people and the people who rely on their product.

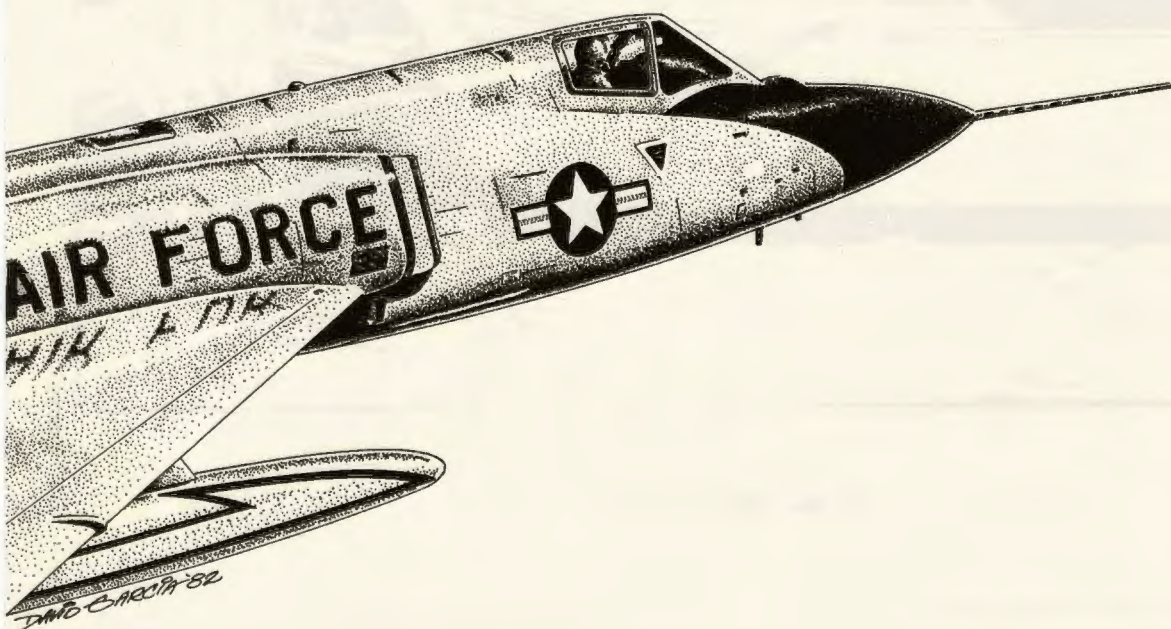
There is no real conflict between safety and the mission. That's why in TAC we say, Safety is the by-product of doing the job right. It's also the byproduct of good supervision.



# F-106A Delta Dart









# SUMMER BOATING REFRESHER



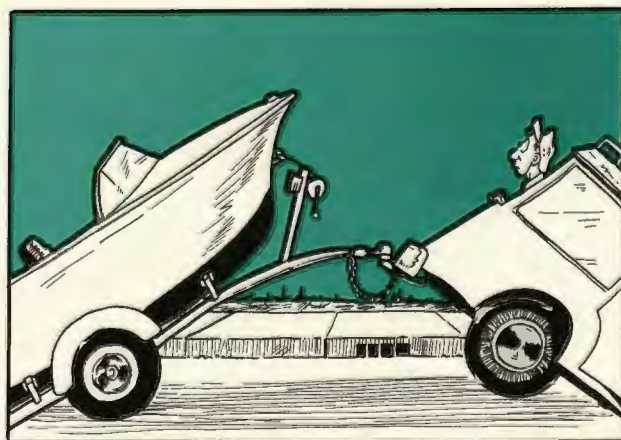
By Ms. Marty Diller

Summer's here, and to many of us that means it's time for recreational boating. It's probably been a while since you had to think about your boating skills, so here's a little refresher course on several different aspects of boating.

First, remember before you start out to give your boating plan to someone who's staying behind and tell them when to expect you back.

**Trailer**ing. Keep in mind that the trailer, towing vehicle, and boat are a team and have to support each other. The length and width of the boat determine the length and width of the trailer. The boat should be supported at as many points under the hull as possible. When figuring the weight, make allowances for extra equipment and gasoline (gasoline averages 6.6 pounds per gallon). Weight distribution is important. You need to know both the total gross

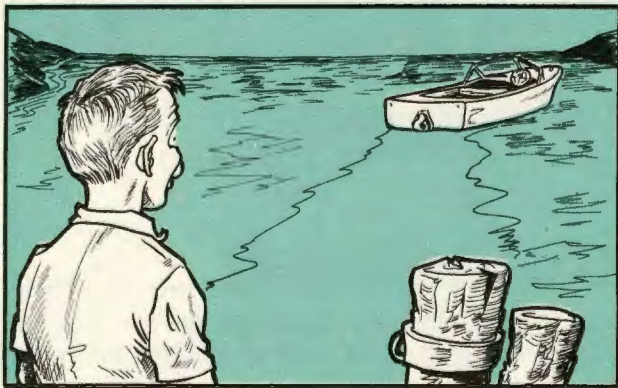
vehicle weight and tongue weight. Too much tongue weight makes the towing vehicle hard to handle; too





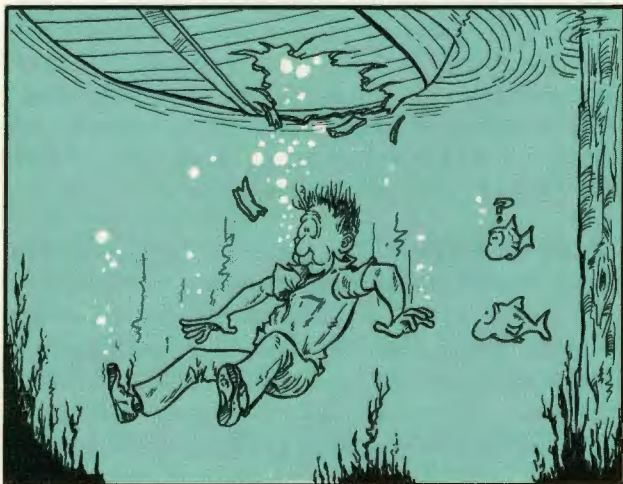
little makes the trailer fishtail. Hitches should be attached to the towing vehicle's frame. Safety chains should be hooked in the form of an X to the frame of the towing vehicle so they will catch and hold the tongue if the hitch fails. Your safety check should include the lights, hitch, mirrors, brakes, wheel bearings, tie downs, safety chains, and tires.

**Launching.** Prepare your boat away from the ramp. Raise the lower unit or outboard, install the drain plug, release tie downs, and disconnect lights. If you have a sailboat with a metal mast, make sure there's no overhead wires between you and the ramp before setting up the mast. Keep the car engine running and parking brake set while working the boat on or off the trailer. Let the trailer hubs cool down. The bearings will be damaged if they enter water when they're hot. Make sure someone is on the shore



or pier to catch the bow line; you'd like to go with the boat when it goes to sea. When throwing lines have them coiled and throw underhand.

**Boarding and Loading.** Step into the middle of the boat, don't jump. If you're moored by bow line or



beached bow first, board over the bow. Put things away as you bring them on board. Keep the load as low as possible. The total weight of gear, people, and engine should not exceed the figure on the capacity plate. Distribute the load evenly. The boat at rest should float so the waterline is even with the water and visible. The number of seats in a small boat is not an indicator of the number of people the boat was designed to carry.

**Fueling.** Most boat fires occur just after fueling; so be very careful. Check the entire fuel system for leaks. Make sure bilges are free of oil and gasoline. Shut off anything that might cause a spark like



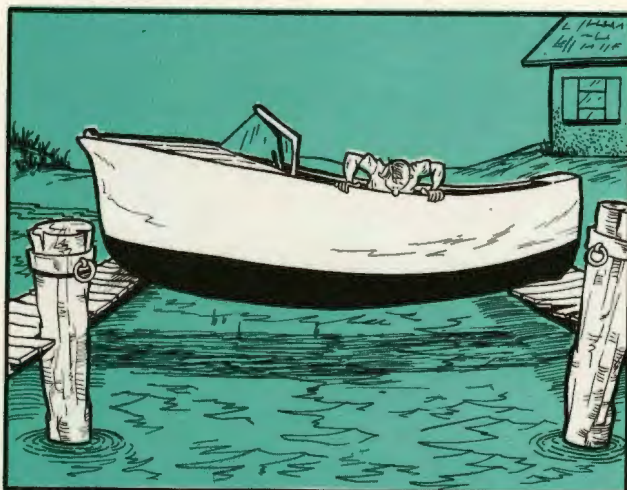
electrical equipment and radios. Close all compartments to prevent gas vapors from seeping into the boat. Don't smoke. Whether filling from a gas can or pump, make sure the nozzle touches the tank to ground it and prevent a spark. Leave room for gas expansion and know your fuel gage. Remember the fuel rule: One-third to go, one-third to get back, and one-third in reserve. Wipe up any gas spills and throw the rag away, but not on the boat. Don't fuel at night unless you're in a well-lit area. Ventilate the boat of gas vapors before starting the engine; and don't get mad at the guy in front of you if he doesn't leave the fuel area quick—he might be ventilating his boat. When filling a gas can or adding and mixing oil, don't do it in the boat.

**Handling the Boat.** Both planing and displacement hulls follow the same general rules; but planing hulls respond more quickly, so you'll have less reaction time with a planing hull. A loaded boat is more stable but less able to rise and pass over waves. Wind affects an empty boat more than a



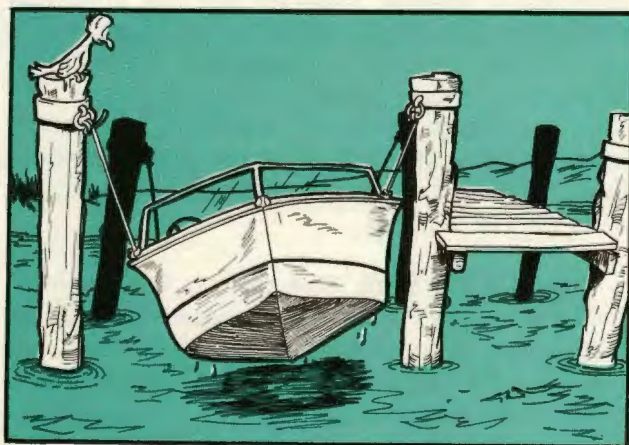
# SUMMER BOATING REFRESHER

loaded one—a point to remember when docking. A boat always turns at the rear, swinging the bow in and the stern out. When backing up, the boat will follow its stern. To reduce speed, throttle back. To stop, put the engine in reverse. When docking, head into the current and wind, or whichever is strongest. Come in at an angle so the bow points in. Normally you back into slips; but if either the current or wind is



strong, go in bow first. When leaving a dock, remember the boat turns from the rear, so make allowances. Push the bow off to make a slight angle with the dock and then ease slowly ahead till you're clear.

**Mooring and Anchoring.** Secure the bow line first then the stern line. Don't shut off the engine until all lines are tied. When mooring, allow enough line for



changes in water level and rough water. If you're mooring away from piers, allow enough clearance for a full-circle swing of the boat and the swing of boats moored nearby. Know your knots: square knot, bowline, anchor bend, clove hitch, and half hitch. Use a bow and stern line for short pier stays; add a breast line for longer pier stays. Make sure your lines are always in good shape.

To anchor, pick a spot with a level, holding bottom. Approach into the wind and stop the boat. When the



boat moves backward, lower the anchor over the side of the boat hand-over-hand. Don't throw the anchor, and make sure no one is standing in the anchor line coil. When the anchor hits bottom, let out line so the ratio of line length to water depth is no less than 3:1. Now tie the line to the cleat and put the engine in reverse. If the anchor catches, the line will be taut. Shut off the engine and let out the rest of your line. For normal conditions and short-term anchoring, 5 feet of anchor line for every foot of depth from the bottom up to the boat's deck is recommended. If the boat is left unattended, 7 feet of line for 1 foot of depth is better. In a storm, 10 feet to 1 foot is good. To raise the anchor, move ahead slowly, taking in line as you go until the anchor line is straight up and down; then pull the anchor free.

**Rules of the Road.** The three situations to remember are meeting head on, crossing each other's path, and overtaking and passing another vessel. When meeting, neither boat has the right-of-way and each should swing right, then straighten course to pass, left side to left side. But it's better to pass right side to right side than to exchange positions if you have to cross in front of each other to do it. When in a





crossing situation, the boat on the right has the right-of-way. He should maintain his course and speed. The other boat operator takes action to get clear. In an overtaking situation, the boat being overtaken always has the right-of-way. When passing, swing clear of the overtaken boat's wake, preferably on the left side. Pass quickly.

Sailboats have the right-of-way over engine-driven vessels except when passing (the overtaken boat then has the right-of-way). No small vessel has the right-of-way over a large vessel in a narrow channel. When two sailboats approach one another and they each have the wind on a different side, the vessel with the wind on the left side shall keep out of the way. When they have the wind on the same side, the vessel to windward shall keep out of the way of the vessel leeward.

All boats should watch their wake around piers, docks, or bathhouses; around vessels underway, lying to, at anchor, or made fast to the shore; and around persons swimming or using water skis or surfboards. A motorboat should reduce speed when approaching sharp bends in narrow waterways or approaching other obstructions (like bridges) and in heavy weather or fog. Motorboats in narrow channels should always keep to the right side.

**Heavy Weather.** Always check the weather before you go out. Some heavy weather indicators are dark clouds, an increase in wind, static on the AM radio, and a drop in barometer pressure. Most bad weather changes come from the west and will more than likely hit soon. Storms to the north or east may pass over, but be prepared. If you're caught in heavy weather, reduce speed, put on your personal flotation devices and have everyone sit on the bottom of the boat near center. Secure loose items. Head for shore or a protected area. Point the bow into waves at a slight angle and watch for floating debris. Keep bilges free of water and have your emergency gear ready to use. If your engine stops, anchor. Even if the water is

too deep for the anchor to hold, the weight will hold your boat's bow into the wind and sea—the safest position in rough water.



Well, that's our review this month. Next month we'll look at equipment you should have and the systems of navigation aids. If you found some areas that seemed unfamiliar, maybe you need to know more before you take the boat out. For more information contact your local Coast Guard Auxiliary or your local game and fisheries office.

As a boat owner, it's your responsibility to plan ahead. Make sure you know your boat and how it handles, and take all the necessary safety precautions. When you have guests on your boat, be sure to tell them what they should do in an emergency and give them a brief rundown of your boating rules. As a guest, make sure you know what the boat owner wants you to do and be sure to tell him if you can do it or not. Safe boating is everyone's responsibility. Have fun and enjoy it.



# chock talk

*...incidents and incidentals  
with a maintenance slant.*

## THE SILVER DOLLAR CLUE

An F-4E returned from its sortie without any complaints by the aircrew, but postflight inspection revealed damage to the wiper panel on the left slab. Further investigation showed that the left stabilator hinge bolt had moved enough for its bushing to come out of the hinge. That allowed the stabilator to twist and scrape the fuselage.

The hinge bolt should have been fastened by a castellated nut secured by a cotter pin. But six months earlier when the stabilator was changed, the cotter pin was not installed. The supervisor who inspected the stabilator replacement didn't notice the error. So the castellated nut eventually backed off the bolt.

The week that the problem was discovered, the airplane flew five times. During preflight for the second flight of the week, the pilot noticed that the "silver dollar" panel on the left stabilator hinge bolt was rotated out of its normal position. The crew chief simply realigned the panel. Between the third and fourth sorties, the airplane was ground aborted once when the silver dollar panel was found rotated and loose. Again the fix was just to realign the panel and

tighten it. No one associated the loose panel with potential problems beneath the panel.

Afterwards, we learned that the silver dollar panel can be a clue to other problems. It can rotate for several reasons: a loose screw in the panel; bent metal on the back of the panel where it fits around the hinge bolt; or, as in this case, a loose hinge bolt nut that allows the bolt to rotate. Another clue is if the silver dollar panel protrudes beyond the wiper panel. Anything strange about the silver dollar panel deserves investigating.

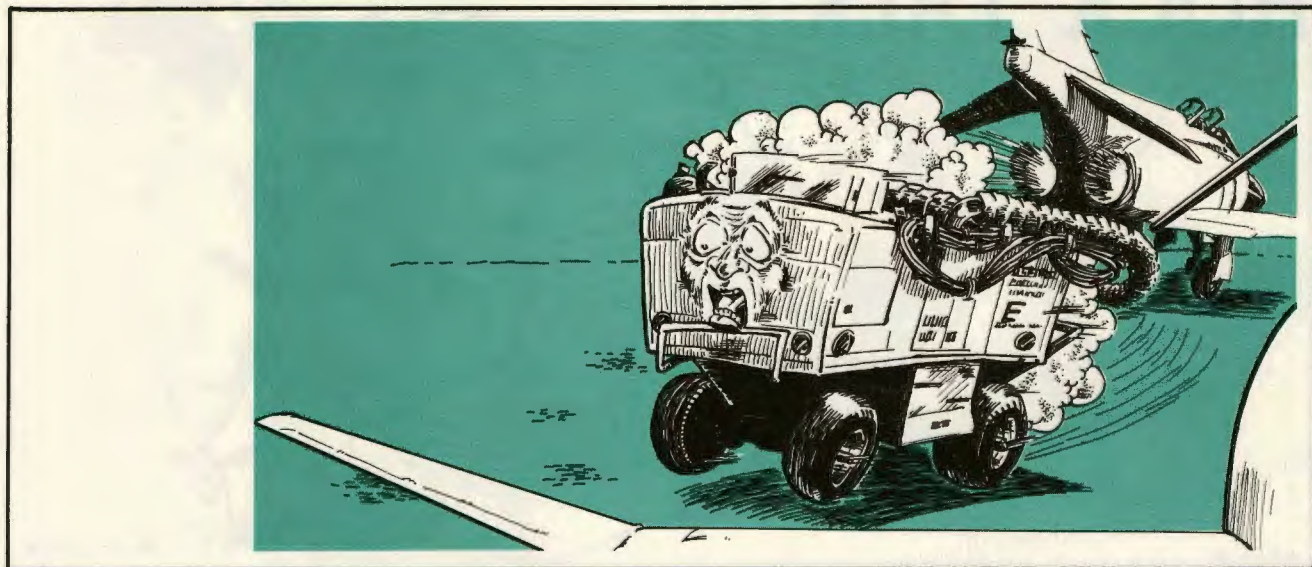
## MOTHER KNEW SOMETHING

While buttoning up an F-15 before it taxied, a new crew chief got too close to the intake. His headset was pulled off his head and sucked down the intake.



Remember when your mother used to say, "Good thing your head is screwed on . . ."? It sure is.





## BRAKES AND BRAINS

We expect that about everyone, pilots and maintainers, can learn from this incident. It happened to an F-4, but it could have been any airplane.

After start and pretaxi checks, the pilot pushed up the throttles to taxi out of the chocks. The pilot had to increase the rpm to 77 percent before the airplane would move. The aircrew supposed that the high thrust required was due to heavy gross weight, strong gusty headwinds, and early morning stiffness in the wheels. After they finally were rolling, the pilot began a right turn. After thirty degrees of turn, the airplane quit rolling.

A Dash 60 cart took up the slack: when the F-4 stopped, the cart, which was behind the airplane, began to roll. It picked up speed and headed toward another F-4. The exhaust stack on the cart crunched into the underside of the right wing of the parked F-4. Then everything quit rolling.

The F-4 that was trying to taxi had a locked brake. The Dash 60 had no brakes. That's why the cart rolled when the airplane wouldn't. With the high thrust setting it took to get the airplane rolling, the engines probably hadn't returned to idle thrust when the pilot began his turn, even though he may have pulled the throttles back to idle just before he turned. The jet blast from the engines was pointed at the Dash 60 when the airplane began to turn.

The Dash 60 was ready to roll because its braking system was inoperative. The parts weren't available to fix it; so wheel chocks were provided, and the brakes were written up on a diagonal in the maintenance forms for the cart. The chocks didn't do much

good, though, because they weren't used. The cart was freewheeling when the jet blast, accompanied by the already strong winds, hit it. Maybe you could call this "A Tale of Two Brakes"; one worked too well, and one didn't work at all. But in the midst of all the brake problems, brains properly applied could have made a difference.

## F-4 FLIGHT CONTROL BINDING

Two instructor pilots were practicing instrument flying. On a 6-mile final approach, the instructor in the rear cockpit found that he could not roll the airplane out of the 10-degree right bank it was in. The front seater took control of the airplane and forcefully righted it. He declared an emergency and landed out of that approach without any other problems.

The stick-well cover in the front cockpit was found bent in about  $\frac{3}{4}$  inch from the top rear. So the bent well cover was binding against the base of the control stick just under the boot cover. The aircrew had not detected the binding during their flight control checks before takeoff.

The airplane had just come out of a 600-hour periodic inspection. During that inspection both ejection seats were removed. Checks of the flight controls were done with the seats out, so the cover was probably OK then. The front seat was installed the night before this flight, and that's most likely when the damage was done. Someone may have rested something heavy on the cover or stepped on it.

Guess the point is that the mouth isn't the only wrong place we can put our feet. Around an aircraft there are lots of other wrong places to put them.



# CHOCK TALK



## ASSUMPTIONS VERSUS TECH DATA

An F-4 was operating out of a deployed location supported by that base's transient maintenance branch. During preflight inspection the pilot found the right strut completely flat. He told the transient maintenance sergeant, who got a high-pressure air cart and serviced the strut. Since the strut then showed proper extension, the pilot accepted the airplane.

During takeoff, as the aircraft weight lifted from the wheels, the aircraft heeled over to the left. Then when he raised the gear, the pilot heard a bang. The right main gear indicated that it was in an intermediate position. The pilot put the gear handle back down, and all three gear showed down and locked. With the gear down, the pilot diverted to the nearest base that had F-4 maintenance. There he made a normal landing without incident.

When the transient maintenance troop had serviced the strut, he did it the way he serviced other aircraft on the station. He connected high-pressure air to the upper strut fitting and increased pressure until the strut extended. That was fine for the other aircraft he worked on, but totally wrong for the F-4. The F-4 uses high-pressure air only in the lower chamber for strut extension; the upper chamber should have a measured charge of low-pressure air. An overpressure in the upper chamber of as little as 10 psi can cause the strut to extend too much and interfere with the retracting of the gear.

This strut probably had over 1,000 psi in the upper chamber. When the weight came off the gear, the right strut immediately hyperextended; that's why the airplane heeled over to the left. The attempt to raise

the hyperextended gear broke the upper shrink link.

The transient maintenance sergeant had never been trained to service F-4 struts. Instead of getting qualified help, he assumed the F-4 struts were the same as others he'd worked on. He never even checked the tech data. As always, assumptions proved to be a sorry substitute for tech data.

## MURPHY'S GOT THE ODDS

During a functional check flight of an F-5E, the right engine compressor stalled, rolled back, and flamed out. The pilot restarted the engine and returned to base without any problems. After he shut down the engine, foreign-object damage (FOD) was found in it.

The FOD was extensive in the compressor section, with metallic tracking throughout. Several semicircular imprints with thread marks were found. Postflight inspection also showed that one screw was missing from the right gun-gas-purge door. The size and threads of a similar screw matched the imprints on the compressor blades.

The door had 47 screws in it; eight of them were the wrong ones. These screws were identical to the proper screws in every detail except length. The wrong size screws would engage the fasteners only to a depth of one and a half or two threads, and they wouldn't engage the locking mechanism. So vibration could cause them to loosen and fall out. This unit decided to inspect the screws in the gun-gas-purge doors on all of their F-5s. They found 165 of the wrong screws installed. That gave Murphy 165 chances to knock out an engine on this base. How many chances does he have on yours?



# Quarterly Safety Awards

## *Ground Safety Award of the Quarter*

**T**SGT JAMES D. HAWKINS is the recipient of the Tactical Air Command Ground Safety Award for the first quarter of 1982. Sergeant Hawkins is maintenance supervisor for the missile maintenance section, 33d Equipment Maintenance Squadron, 33d Tactical Fighter Wing, Eglin Air Force Base, Florida.

Sergeant Hawkins started a briefing program to inform crew chiefs of technical order changes and missile mishaps. His program has contributed to the improved safety record of the shop. He also installed a retractable ground system in the AIM-9 maintenance bay to eliminate a tripping hazard during all operations. In addition, he designed and built an AIM-9 influence-fuze holder that not only decreases the time to clean and molly-coat the fuzes but allows the fuzes to be held mechanically instead of by hand. On another occasion, Sergeant Hawkins was checking on the transporting of 6,000-psi argon bottles when he noticed the tanks kept shifting. He decided to put the bottles in pairs and added another strap, which has eliminated the shifting problem.



**TSgt James D. Hawkins**

Sergeant Hawkins' day-to-day efforts to ensure quality maintenance, coupled with his safety conscious attitude, have made a safer environment for all those who work with him. He deserves the Tactical Air Command Ground Safety Award of the Quarter.

## *Weapons Safety Award of the Quarter*

**T**SGT GARRY E. BRADLEY is the recipient of the Tactical Air Command Weapons Safety Award for the first quarter of 1982. Sergeant Bradley is an academic instructor for the load standardization crew, 35th Aircraft Generation Squadron, 35th Tactical Fighter Wing, George Air Force Base, California.

Sergeant Bradley teaches explosives safety procedures and practices and how the F-4E aircraft weapons release system works to all newly assigned workers in armament systems. He conducts courses in conventional munitions and nuclear weapons systems safety not only to armament systems workers but to everyone whose duties bring them in contact with loaded aircraft. He also instructs those people who assist the weapons load crew chief in handling and loading ammunition into the F-4E gun systems during combat turnaround exercises. This is a very important portion of the exercise since the ammunition is particularly sensitive to ignition by static electricity or by mishandling. He recently started an armament systems trouble-shooting course for the release system on the F-4E aircraft. Sergeant Bradley is so successful at instructing these courses that there have been no explosives accidents or incidents during this period.

As explosives safety NCO for his squadron, Ser-



**TSgt Garry E. Bradley**

geant Bradley also has complete knowledge of the safety program. He is presently setting up new procedures and locations for the storage and handling of each AMU's aircraft cartridges used for weapons release systems.

Sergeant Bradley regularly shows his safety consciousness and dedication to sound safety procedures. He has earned the Tactical Air Command Weapons Safety Award of the Quarter.



# HOW TO AVOID A BLIND DATE WITH TERRI FIRMA

By Capt Thomas A. Hughes  
363 TTS

How many times have we launched into the wild gray yonder faced with a marginal weather situation. Do we really have everything working in our favor when the weather is 300-and-1? It's exceedingly important that we assess our capabilities and limitations before actually jumping into an actual weather approach flown to minimums. Granted, "command guidance" says we may fly the approach with 300-foot ceiling and 1-mile visibility but, again, let's consider some points:

1. A reported weather ceiling of 300 feet and 1-mile visibility is great for the weather troops who walk out of their reporting station, look horizontally, and see their favorite water tower a mile away, but from where we sit as instructors our visibility is much more restricted. At our altitude above the ground when we reach decision height, we may not have that luxury of 1-mile slant range visibility. Chances are that mile to the water tower may translate to  $\frac{1}{2}$ - to  $\frac{3}{4}$ -mile visibility to the runway. Strike One!
2. Speed is also important. Assuming you are flying the 20-ton sled with an approach ground speed of 160 kts, one mile to touchdown is going to take approximately 22 seconds. Twenty-two seconds sounds like an eternity to us with hands stamped 24 Karat, right? But if that 1-mile visibility is actually .65-mile slant range, that touchdown time is cut to 14 seconds. Getting a little more tense? Now, one more little factor: flying instruments is not exactly the best position from which to view the runway. There comes that little need to sneak a peek out from behind the instrument panel, to try to find what the instruments tell us should be waiting out front. Let's say we can do that in 4 seconds and positively determine our position, drift, and height above





the approach end. That puts our touchdown time down to 10 seconds. Still no sweat—right? But now ol' golden fist, let's say you're not in the most advantageous position to land, and you need to correct to the centerline. Our good friends from flight safety tell us the total reaction time to see the needed correction, put in the appropriate control movement, take out that initial input when we have achieved our desired correction, and then assess what we have done is about 9 seconds. This means your margin for error is 1 second until touchdown. Barely a heart beat—one minor error and guess what? Strike Two!

**3. Limitations**—you've got to know and respect your limitations. Granted on most occasions our hands are 24K. But what about those days (or approaches) when we can't believe our eyes and those 24K pure gold ones suddenly lose their luster and turn into 5 pounds of cured pork leg? Sometimes things like that happen. Couple that with looking (or trying to look) for the ol' concrete through a distorted windscreen or with that dreaded crosswind condition which places the nose of the aircraft in front of our favorite lookout side, and that approach we're flying could turn into one of the best war horror stories ever told. These things all affect our ability to safely accomplish our desired objective—getting our bodies safely on the ground. Limitations,

whether they be with the aircraft, weather, or ourselves, are things we must be prepared to analyze and overcome in seconds. They are factors which we cannot underestimate in order to achieve a safe, professional landing. Can we really afford to have that third strike?

These are but a few things that could go wrong. So with all the possibilities to wreak havoc on our ol' bodies, what do we have at our disposal to help us in our quest for excellence? Well the answer should be obvious—*judgment*. When the weather is called 300-and-1, be prepared! Realize that just because Captain Joe Weather can see his favorite landmark, that doesn't mean you will be able to see the runway. Be aware of the speed as it equates to time to touchdown. Also pay particular attention to the time to touchdown when reaction time is brought in as an additional variable. As we've seen, time to touchdown decreases significantly when reaction to those not-so-ideal factors are brought into play. Wind-screen distortion, cross wind component, bad hands—all lead up to what could be a situation which even the best of us could not recover from.

Don't sacrifice good judgment by trying to recover a bad approach. Judgment: if it doesn't look good or feel right—go around! We owe it to ourselves to continually strive for excellence. Only by always striving for excellence can we keep those dates with Terri Firma controlled, happy, and most importantly, safe.







## SAILORS, TAKE WARNING

A sailboat owner took a co-worker sailing with him on his catamaran. They went out together on a small inland lake. Somehow, the sailboat overturned, and the two men were thrown into the water. But they were both able to swim to the shore and save themselves.

Then, for some reason, the two of them decided to swim back out and right the boat. The passenger dove under the boat and was trapped in the mainsail rigging. The owner dove under the boat three or four times, trying to free the passenger from the rigging. On the last dive the owner could no longer find the passenger. The body was recovered two days later.

Before you go sailing, even as a passenger, it would pay to learn the proper way to right the boat if it capsizes. The proper way doesn't mean trying to do it when you're fatigued from swimming to the shore and back. Fatigue, frustration, and ignorance can lead to trouble in a hurry. Don't risk it.

## PLANNING YOUR VACATION ?

Your vacation will be more enjoyable if you don't have to worry about the house you left behind. Make yourself a little checklist of things to do about the house now, while you're planning the trip. Here are a few things that can go on the list:

- Stop newspaper deliveries and arrange for a neighbor to pick up the mail. A pile of newspapers at the door or a mailbox full of mail may draw some unwanted attention.



- Put an electric timer on the lights. Leave your drapes or shades in their normal position. You may not fool a professional thief, but at least you might eliminate the vandal who's just looking for a target of opportunity.
- Let the police know you're leaving and who has your spare house key. In some areas the police will make random checks of empty houses.
- Just before you leave, walk through the house and check that all appliances are off. You may want to have your water heater turned off to save money.
- Lock your windows and doors as you leave, and give a neighbor a key. Then give your neighbor a copy of your itinerary.

While you're checking off the steps in protecting your house, don't neglect getting your car ready for the trip. Give it an overall physical and pay special attention to tires, shocks, lights, fan belts, battery, windshield wipers, and brakes. It's probably smart to take along spare wiper blades, a fan belt, a quart of oil, and a container of water. Also carry a tool kit, which includes flares, booster cables, a flashlight,



duct tape, and a tire pump in addition to the normal hand tools. And, above all, make sure you have a first-aid kit at hand when you travel.

After the planning and preparation are over and you're on the road, remember your responsibilities. Don't drive after drinking. Don't drive when you're tired. If the kids are getting on your nerves, maybe that's a sign that it's time to take a break or even stop for the day. The extra miles aren't worth the hassle or the danger. Take it easier and enjoy the trip. And remember, your whole family is trusting you for their safety.

## SUMMER HEAT AND BEER

**A**t last the summer's here. It's getting nice and warm out. Soon nice and warm will become hot. But we won't care. We'll be having too much fun outside, on the beach and at picnics, drinking beer and getting dehydrated. That's right—dehydrated. That's what happens when we drink beer in the heat.

Although drinking beer seems to us to be replacing the fluids in the body, actually we're losing them. Beer makes you eliminate more fluid, just like coffee does; those kinds of drinks are called diuretics.



Alcohol also depresses the nervous system, which increases our vulnerability to the physical effects of heat.

Our body uses up fluids to cool us down. The most obvious way is by sweating. Evaporation of the sweat on the skin cools us. But a less apparent way the body uses evaporation to cool us is in breathing. The water vapor we breathe out is the product of evaporation. In fact, that's the main evaporative system in dogs; that's why they pant and don't sweat.

Evaporative cooling is very effective; but if we don't

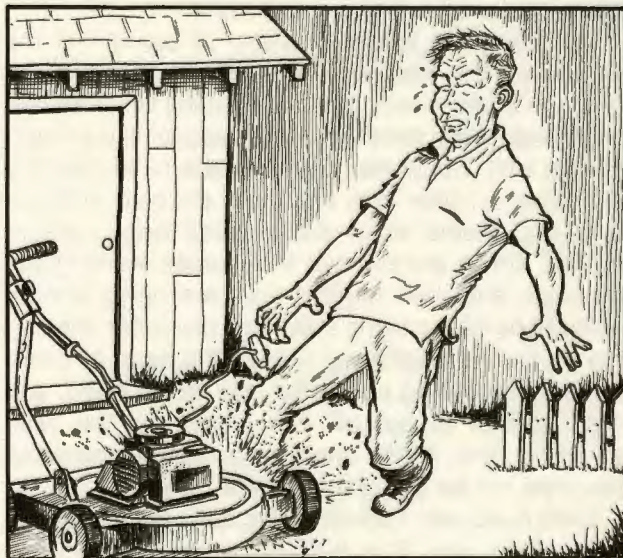
replace the liquids in our body, we'll suffer from dehydration. Even if we replace the water, we may lack electrolytes in the body fluids. Electrolytes are trace minerals that are necessary to the body's normal functioning. They must be replaced also. That's what products like Gatorade and Quick Kick do for athletes—they replace the electrolytes.

Beer, of course, doesn't do that. It only quenches your thirst and fools you into not noticing your dehydration. Any number of beverages will be better for your body at a picnic or beach party in the heat. And if you back off on the beer, you'll also have a safer trip home.

## HINTS FOR MOWING

**I**t's probably no surprise that the greatest danger in using a power mower is accidental contact with the rotating blade. Flying objects hurled by the blade cause many injuries; but, still, 64 percent of all walk-behind mower injuries are caused by contacting the blade.

Often the contact occurs when the operator clears grass clippings out of the discharge chute while the blade is turning. Another time is when the operator tries to adjust the cutting height of the mower with the engine running. And quite a few incidents of blade contact happen when a foot slips under the mower housing.



Most of the time, blade contact results in lacerations; but 15 percent of the injuries are fractures or dislocations, and 3 percent result in amputation. The U.S. Consumer Product Safety Commission estimates that more than 120,000 people are injured in



# DOWN TO EARTH

power lawn mower accidents each year.

The commission offers these tips to do before mowing to reduce chances of injury:

- Pick up all debris on the lawn.
- Check for hazards, especially near shrubs, trees, and fences.
- Adjust the cutting height before starting the mower.
- Fill the gas tank while the mower is still cool.
- If the lawn is wet, wait until it dries.

We have some suggestions to add to the list. First, tune up the lawn mower. When the mower starts easily, we're more likely to shut it down when we should to clear the discharge chute or adjust the cutting height. Second, when the lawn is dry and it needs cutting, do it. Don't put it off. The next day the lawn may be wet and hazardous to cut.

## DRUNKEN DRIVERS BEGIN TO PAY

**D**runk drivers are responsible for 26,000 deaths each year. They also account for a total of 800,000 crashes, 750,000 serious injuries, and \$5 billion in economic losses. That's the price we pay as a society for tolerating drunk drivers.

On any given weekend night, 10 percent of the drivers on the road are legally drunk. Historically, only 1 in 2,000 is ever arrested. But the story may be changing. Many states are beginning to take a tough stance with the drunk driver. Arrests have risen by half again in New York state and doubled in Maryland and Maine since those states began crackdowns. Other states have task forces working the problem; and new, tougher laws are being written. None of us can assume that if we drive after drinking too much, we'll get away with it. The odds of being arrested are going up. And if you are arrested, you can't expect to get off with a slap on the wrist anymore. You better bring a toothbrush, because you may not be going home for a while.

Even if you aren't arrested, the odds of an accident may catch you. The 800,000 drunks involved in crashes last year didn't get away with anything. And some of them are going to have to live with the knowledge that they killed an innocent person. That's a worse sentence than any court can hand down; and it's for life, at least.



### Could Your Job Performance Use a Little Jog?

Col (Dr.) Frank H. Brunstetter, Staff Surgeon at Aerospace Rescue and Recovery Service says: "Enthusiastic joggers believe this exercise improves their quality of life, despite scientific uncertainty as to whether or not regular jogging results in a long life span. Before and after comparisons of regular runners with other people show improvements in job productivity, psychological outlook, enjoyment of life and libido after jogs of 15 to 30 miles a week."

**Are You Hooked on Jogging?** The National Institutes of Health reports that regular vigorous exercise increases the secretion of a natural opium-like hormone, beta-endorphin, in the blood. This hormone produces a sense of well-being and increases tolerance to pain. The increased beta-endorphin level during exercise may explain "runners' high"—a condition similar to drug-induced euphoria. The effects of this hormone, though still speculative, could cause runners to become depressed when they miss a day of exercise, similar to withdrawal symptoms.

**Buckle-up the Baby Too.** Proper use of a child safety seat increases your child's chances of surviving serious or fatal injury by 70 percent. Choose the right seat for your car and child. Install the seat according to instructions. For maximum protection, place seat in center of back seat. Tuck rolled-up receiving blankets on each side of an infant for additional support. Most important: Use the seat every time you take baby for a ride. (Many hospitals and community agencies have infant car seat rental programs.)



# TAC TALLY



CLASS A MISHAPS	▶
AIRCREW FATALITIES	▶
TOTAL EJECTIONS	▶
SUCCESSFUL EJECTIONS	▶

TAC		
APR	THRU APR	
	1982	1981
2	12	12
2	8	9
3	11	14
1	9	9

ANG		
APR	THRU APR	
	1982	1981
1	3	3
0	2	2
0	2	0
0	1	0

AFR		
APR	THRU APR	
	1982	1981
0	0	0
0	0	0
0	0	0
0	0	0

## TAC's TOP 5 thru APRIL '82

TAC FTR/RECCE	
class A mishap-free months	
43	1 TFW
30	49 TFW
29	355 TTW
22	474 TFW
20	347 TFW

TAC AIR DEFENSE	
class A mishap-free months	
111	57 FIS
64	5 FIS
61	48 FIS
20	318 FIS
11	87 FIS



TAC-GAINED FTR/RECCE		
class A mishap-free months		
120	188 TFG	(ANG)
112	138 TFG	(ANG)
111	917 TFG	(AFR)
108	116 TFW	(ANG)
98	434 TFW	(AFR)

TAC-GAINED AIR DEFENSE		
class A mishap-free months		
98	102 FIW	
94	177 FIG	
60	125 FIG	
43	119 FIG & 142 FIG	
33	144 FIW	

TAC/GAINED Other Units		
class A mishap-free months		
153	182 TASG	(ANG)
146	193 ECG	(ANG)
141	26 ADS	
137	110 TASG	(ANG)
133	USAFTAWC	

## CLASS A MISHAP COMPARISON RATE

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

TAC	1982	7.8	5.7	5.9	5.2								
	1981	4.0	3.0	3.2	5.6								
ANG	1982	0.0	2.7	3.2	3.5								
	1981	9.3	4.8	4.6	3.3								
AFR	1982	0.0	0.0	0.0	0.0								
	1981	0.0	0.0	0.0	0.0								

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



