



## Angle of Attack

# WATCH OUT FOR THE Other Guy

It seems like Halloween just happened and Thanksgiving was yesterday; yet the holiday season is still ahead. There are only three weeks left for preparations, presents, wrappings, and party supplies. A lot of people will be traveling to visit friends and relatives. Others will simply stay home to enjoy the holiday season. Whatever your plans, watch out for the other guy.

In 1976 and 1977, we did not experience a fatality during the holiday season. In 1978 we were not so lucky. A TAC member lost his life in an automobile accident between Christmas and New Year's. In this mishap, a vehicle traveling the opposite direction went out of control, crossed the highway median, and struck the car driven by the TAC member. On New Year's Day 1979, another TAC member was walking down a road after dark and was killed by a hit-and-run driver.

Neither of these accidents was the fault of the individuals, but that doesn't change the final result. Nor can we ignore our drastic increase in

ground fatalities. In 1976 and 1977, we had 37 and 39 fatalities, figures which we can't take any pride in. However, in 1978, 54 of our people lost their lives; and in 1979, we've already experienced 48 fatalities through the end of October.

Some were caused by our own people, while others were not their fault. We need to drive and work defensively. It's all up to you. Watch out for the other guy. You'll be watching out for yourself at the same time.

See you in 1980.

RICHARD K. ELY, Colonel, USAF  
Chief of Safety





By Capt Gary R. Porter  
HQ TAC/SEF

"Well, it's that time of year again; someone in some obscure desk somewhere has decided I need so many hours of night time each half; so, here we go again! Night flying is never much fun. But this flight will finish me up for the half, so I'll just grin and bear it. We're scheduled for night intercepts, 1 v 1, no biggie, done it before. Weather's going to be tough though, 500 foot broken with layers up to 18,000. Chance of cirrus above that. I'm sure we'll be able to find some clear airspace somewhere in the area . . .

"I didn't pay that much attention to the briefing; we flew the same kind of mission two nights before. Lead briefed again the lost wingman

# SPATIAL

procedure; 15 degrees for 15 seconds. He said if I get spatial disorientation, just get on the gauges and believe the instruments . . .

"Never did like night formation takeoffs, but somehow we got airborne together. Hit the soup almost immediately. Man, is it hard to see that airplane! Everytime I think I'll have to go lost wingman, we break out for a moment. In and out, in and out, I think that's harder to handle than straight wing weather. Oh well, we should be on top in a minute . . .

"This really is getting tough ! Wish Lead would rollout. Seems like we've been in a 30-degree bank for some time. Hey Lead, come on, can't you fly any smoother than that, or is it me? I ought to be able to fly better wing than this. Don't feel so good. I'm upside down. Or am I? Maybe I should glance at the ADI. Boy, if I do that I'll lose him completely the way I'm bouncing around. Besides, don't they say not to move your head or you'll induce more vertigo?



"Man, I can't even see straight. Sure wish we would break out. Keep sight of that light, keep sight of that light. Maybe I should tell Lead--na, we'll be out in a moment, I can hack it . . .

"Can't stand it any longer, I've got to get my head straight. Almost lost Lead there for a moment . . .

"Where did he go? Oh no! Two is going lost wingman."

*"Roger Two, get on the gauges; I'll get a separate clearance for you. Center, 01 flight would like a separate clearance for 02. He's separating off the right wing now."*

*"Maintain separation, Two; Lead's at 14, heading 093."*

These are primarily influenced by delicate structures in our inner ears. When visual references are removed, we quickly learn how much we rely on them to keep these little gyros erected.

There have been recent mishaps which reinforce the potentially tragic results of spatial disorientation and the unique hazards encountered during formation flight. Alone on a night cross-country, there are a variety of actions a pilot can take to combat vertigo; and a good discussion of these preventive measures and the general topic of spatial disorientation can be found in AFM 51-37. But flying as wingman, in a single seater, at night, in the weather, or both, you are not only far more sus-

Disorientation

# DISORIENTATION

"Which way's up? That can't be right! What's my altitude? Got to get separation. Let's see, 15 degrees; what was our heading? How long's it been? Where's the altimeter? I'm in a left turn now, no, a right! Is that right? 45 degrees? How'd I get in a dive? What's my altitude? Roll wings level! Where's the ADI? Pull the power back! Oh my God!"

The preceding narrative highlights a very serious problem--SPATIAL DISORIENTATION. The definition is simple: not knowing how you're oriented in space. The problem is complex. While I'm no expert on the subject, I'd like to share a few observations.

Spatial disorientation, or vertigo as it is often called, (I will use the two terms interchangeably) is an individual phenomenon. Every flyer encounters it in varying degrees of severity when visual references of our attitude in space are removed and he or she has to rely on physical references, namely, "seat of the pants" feelings.

ceptible to the phenomenon, but also more restricted in what you can do to combat it.

Let's look at your options. Believing your instruments is difficult if you are not able to look at them without possibly falling off the wing. If you can quickly glance at them, you may even induce more vertigo by the rapid movement of your head and the resulting effect on the inner ear. To have your leader confirm your flight parameters may help convince your mind, but your leader must first know you need help. Fighter pilots notoriously like to think themselves capable of handling any situation. This pride and fighter pilot macho image can prevent us from broadcasting our plight. But broadcasting it is precisely what we need to do.

A flight leader who has discovered one of his wingman is experiencing vertigo has several options. The first decision to make is whether the wingman would be better off on the wing or on a separate clearance. Before you tell the guy to



## SPATIAL DISORIENTATION



go lost wingman consider this: it may be impossible for him to properly and safely execute those procedures. Disorientation can progress to the point of physical incapacitation, in that the pilot may be unable to digest the variety of information available to him. For instance, if a severe coriolis effect (read AFM 51-37) is induced by a rapid head movement, it may be impossible to read a rapidly unwinding altimeter, or even interpret an unusual attitude on the ADI.

If the wingman remains in formation, establishing straight and level, unaccelerated flight should be the first action. Changing lead may allow him the opportunity to align his personal gyros. However, severe weather may prevent a lead change. Reassuring him verbally by describing flight parameters may help. Perhaps general words of reassurance may be all he needs to hang in there until you break out or the vertigo can be overcome. In any case, when vertigo increases to the point of compromising flight safety, the wingman must make this known and request help. A flight leader has a responsibility for the safety of his flight members, morally, traditionally, or otherwise. But if he is never told there is a problem, there is little he

can do. It might be possible to detect disorientation in a wingman if you are alert to possible symptoms. Spurious radio calls indicating apprehension or detecting a difficulty in maintaining good, steady formation are probably the best symptoms but would not always indicate spatial disorientation. It would be appropriate to ask a guy how he is doing if these signs are observed, especially if you are in conditions you know are conducive to vertigo.

A recent development has been the implication of quinine as a factor in the susceptibility to spatial disorientation. Quinine has an affinity for, and can be toxic to, the tissues of the inner ear, i.e., the vestibular mechanisms, and will accumulate there. Symptoms of quinine toxicity include: ringing in the ears, degraded hearing, degraded night vision, and vertigo. The USAF Surgeon General is investigating this subject, as a result of a recent mishap board recommendation. Until all the facts are in and an official policy is established, it would be wise for aircrews to avoid beverages with quinine (tonic water) as an ingredient.

In summary, spatial disorientation is a complex problem. I haven't attempted to give any concrete answers because there may not be any. The variety of conditions of flight, aircrew experience, and individual susceptibility prevent a simple answer. But I hope I've jogged your thought processes a little. Aircrews need to be aware of the causes, effects, and treatment of spatial disorientation. Flight leaders must thoroughly brief this subject when applicable (as required by AF 55-series manuals) and discuss more than just how to precisely execute lost wingman procedures. We need to really evaluate how best to combat this killer and prevent the loss of more people and aircraft.

What would you do if your wingman suddenly said, "Hey Lead, I've got vertigo." ➤



# AIRCREW OF DISTINCTION



56 TFW  
MacDill AFB, FL

On 26 July 1979, Captain Patric J. Pepe and Lieutenant Marty W. Allen were on an F-4 student training mission. Just after takeoff, the crew heard a muffled explosion on the right side of the aircraft followed immediately by the illumination of the right fire warning light. Captain Pepe quickly retarded the right throttle to idle, but the fire warning light persisted. Carefully analyzing the situation, the crew realized they might need both engines to climb to a safe ejection altitude. They decided to keep the right engine operating at idle. The fire warning light went out momentarily as they continued to climb to a safe altitude. Reillumination of the right fire light was accompanied by high EGT and maximum fuel flow indications. The right engine was then shut down and the fire warning light went out. The emergency generator (RAT) was extended and a heavyweight, single engine approach was planned and coordinated. While establishing the landing configuration, the bus tie opened causing the loss of additional aircraft systems and a series of uncommanded flight control inputs. Captain Pepe maintained control and turned off the stability augmentation systems, eliminating the uncommanded inputs. While on final approach, the left generator failed and the fuel indications dropped to zero. A few seconds later, the generator came back on and the bus tie closed. Captain Pepe completed the single engine landing and made a departure-end cable engagement despite failure of the antiskid and nose gear steering during the landing roll.

Maintenance specialists' troubleshooting discovered that the engine bleed air duct had failed, exploding into the engine bay. The hot bleed air (over 900°F) caused the spurious and unrelated electrical malfunctions, including the uncommanded flight control inputs throughout the short flight.

The superior airmanship, crew coordination, and prompt reaction to a serious in-flight emergency demonstrated by Captain Pepe and Lieutenant Allen saved a valuable aircraft and averted injury or loss of life. Their actions qualify them as the Tactical Air Command Aircrew of Distinction.



Capt Patric J. Pepe



2Lt Marty W. Allen



# TIPS

Tac tips

The man who makes no mistakes  
does not usually make anything.  
E. J. Phelps

## HEY, CHIEF, TAKE A LOOK AT...

By Maj Garry Mueller  
HQ TAC/SEF

The "hey chief, take a look at" syndrome recently popped up again at a cost of \$2,574 to TAC. During what was apparently a normal landing, the drag chute was deployed followed by a right drift. After full left rudder failed to stop the drift, the nose gear was lowered and left brake used to counteract the drift. The right main failed, but the aircraft was successfully stopped.

Turns out this was the second sortie of the day for that aircraft. Following the first sortie, the tire showed signs of excessive wear, apparently from skidding. The pilot from the first sortie claims he did not use the brakes hard enough to cause the observed damage. He did, however, SUGGEST that the maintenance crew check the brake system while changing the tire.

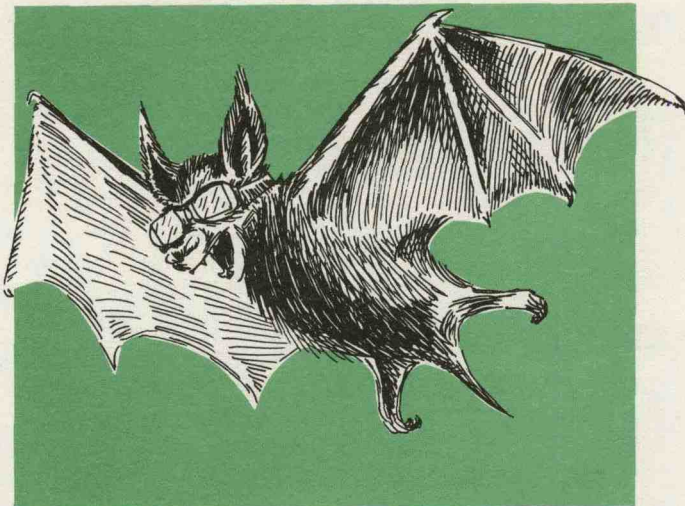


## ...interest items, mishaps with morals, for the TAC aircrewman

No documentation of the discrepancy was apparent, nor was there any documentation of an anti-skid or wheel brake assembly check. The end result was the blown tire--and it could have been worse.

The "hey chief, take a look at" syndrome just doesn't work. Maintenance guys are too busy to remember every little remark about this or that not being right. Pilots are not that busy during maintenance debrief.

Use the 781 for write-ups. That's its purpose.



## BAT STRIKE

By TSgt Gary W. Potter  
USAF SAM  
Brooks AFB TX

As an aspiring civilian pilot, Aeromedical Technician, and instructor at the School of Aerospace Medicine, I devour the Air Force safety publications whenever they come into the office.

Bird strikes have both fascinated and frightened me, and I would like to relate a similar story.



Halloween night, 1978, dual VFR short cross-country in a Cessna 150: About seven-tenths into the 1.1-hour flight, a moderate thump was heard but was only barely distinguishable above the engine noise by the student pilot (me). Upon entering the pattern at home airport and turning on the landing light, a dark blob was noticed on the left strut midway between the wing and fuselage. After landing it was discovered that the blob was a very dead bat.

Sonar, as an anticollision device, did not work for this fellow. But since it is forward-looking only and I closed at his six o'clock, he really

could not see and avoid (or hear and avoid, actually).

Night flying in central Texas is interesting. The sky is not crowded and the twinkling lights are beautiful, but all pilots need to remember we are all sharing the skies with our feathered (or leathery) flying friends.

It all boils down to know what all the hazards can be and be prepared to react accordingly.

My reaction to hitting a bat on Halloween night was to go straight home and forego the festivities. I ask you, what else could be worse than having a black cat cross your path?



## RIGHT OR WRONG

By Lt Col Dwight Wilson  
HQ TAC/SEF

In a recent incident, a civilian boat owner was more than displeased by a fly-over he received. One of his children was frightened and as a result, the boat owner became angered. It seems the two aircraft, from another command, were in an extended trail formation over water, but close to a popular resort beach looking over the area. The boat was anchored in a cove not far from shore when the aircraft flew over--twice. There lies the crux of the matter.

The complainant himself stated he probably wouldn't have become so angered had the flight passed over once and pressed on their way. The pilots knew the boat was there, but they had not observed any persons aboard, and they were flying at a safe distance. The investigation into the incident revealed that the aircraft were probably at a distance of about 500 feet and at a low altitude. The pilots contend they never flew

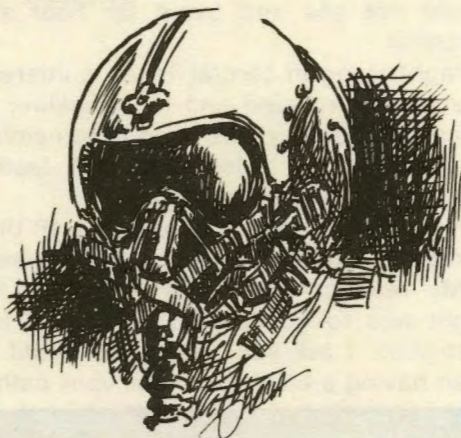
below 500 feet over or near the boat.

So what's the problem? Let's put the scene in perspective, if we can. Here is a quiet, peaceful cove, an anchored pleasure boat, and a family aboard, relaxing. Two aircraft fly over at a relatively low altitude and high speed--twice. The resultant noise was greatly disturbing to a child not familiar with loud aircraft noise--and certainly not expecting the experience twice in a short time period. The father becomes angered (who could blame him?) and complains to authorities. An investigation ensues--with embarrassment to the pilots and commanders involved. Certainly the pilots' judgement could be questioned. Also, the supervisors' for perhaps not emphasizing enough the local flying restrictions and peculiarities associated with resort type areas. Here, unnecessary aircraft noise can be an irritant with subsequent negative community relations. Remember, the jet noise that you live with is not necessarily "music" to everyone's ears. To the folks who don't fly, the noise can be downright annoying.

In this case no one seems to have done anything wrong--but did they all do everything right?



# TAC TIPS



## VERTIGO

It doesn't matter what name you give to it; the leans, vertigo, spatial disorientation or anything else. It's uncomfortable, disconcerting, and sometimes--deadly. Whatever it is, it can happen to all aircrew members--day, night, in the soup or in the clear. Here are a few narratives from actual vertigo incidents experienced by TAC aircrews:

I have only encountered what I consider normal problems with vertigo. The most recent was also the worst in retrospect. I was in VMC doing a systems check. I never thought it possible for me to get disoriented in VFR conditions, but it happened. As I rolled in rapidly for a vertical scan lock, my gyros tumbled. It scared the heck out of me, and I just maneuvered to lead's six o'clock and stayed there for about a minute until things began to straighten out. If this had occurred at night, I am sure the situation would have been worse . . .

I had vertigo so badly after going lost wingman in a turn while flying the F-4 that I had to give the aircraft to my GIB. I learned a good lesson: that being--the first step in any lost wingman actions must be transition to instruments. In the above case I did not and it caused me a lot of problems . . .

The worst case I have had was hitting a dark cumulous buildup on a bright day. The eyeball

refocusing and turbulence put me out of phase with the leader, and I lost him. I started to go lost wingman and saw him again so I started to rejoin, and we hit it again. Dumb. So now I really had to turn away from him. Rather disorienting but it worked out. Never again . . .

GCA base to final turn in SEA. Night weather. Primary attitude failure. When I moved to select standby system, I tumbled my gyros. Although in only a slight left descending turn, recovery was difficult. Due to eyeball flicker, I could not focus on the gages. Using the gray-black reference on the ADI, I could maintain level flight, but could not read the gages for several seconds. My backseater (F-4) assisted in the recovery . . .

Lost wingman in F-4's as number four in a four-ship as leader tried to pick his way through a thunderstorm on radar. The entire flight eventually went lost wingman. Severe vertigo, unusual attitude recovery at 3000 feet AGL. Backseater had no idea of what was happening when asked to confirm our attitude. It was a single-seat recovery. Believing the gages paid off. Very rarely is lost wingman in a fighter 15 degrees for 15 seconds!

The inherent difficulties with color and wingspan should be understood, and pilots should be mentally ready for lost wingman episodes at all times. All aircrews should be aware that vertigo happens to everyone and sometimes quite often. In the event of a lost wingman situation, the pilot must expect vertigo and react to make sure his aircraft is flying. When severe vertigo sets in, the ADI must be leveled no matter what the body feels. The autopilot may help fly the aircraft until things can be sorted out. Staying ahead of the aircraft and expecting lost wingman conditions along with vertigo should help when the real thing comes along.

If any of you have experienced an unusual vertigo incident, we'd like to hear about it--both how you got into it and how you recovered. Remember, your experience could save someone else from making the same mistake, or boxing himself into the same corner.



# Hello all you folks out there in radioland !

Flash! This story just came across the teletype from Headquarters TAC. The world famous, highly coveted, and completely rustproof Fleagle T-shirt is available free. That's right, I said FREE! Here's all you have to do to cash in on this amazing free offer.

Write a story, poem, or other article for TAC ATTACK on any aspect of aviation--maintenance, operations, life support, training, survival, weapons delivery or even your own personal, completely original "war story." If your article is selected as the best-of-the-month, you'll be a winner and join the exclusive club of T-shirt wearers.

Don't delay. This limited offer could expire at any time! The postal service and phone operators are standing by. Send your articles to:

Editor, TAC ATTACK  
HQ TAC/SEPP  
Langley AFB, VA 23665  
Attn 432-2937/3373

This is a free call.

Dick Lamb is a radio and television personality in the Tidewater area of Virginia. He is morning man on 2WD Radio and hosts a weekly show on WTVZ TV. Dick is also an emcee on many Miss Universe/USA beauty contests throughout the country.



Photo by Joe Lahouchuc

## My friends at TAC ATTACK are waiting to hear from you.



# WHICH WAY WHICH WAY

## ...OR SAACING THE DIZZIES

"He's coming. . .2 o'clock low, John, I'm engaged. . .you're free. . ."

"I'm bingo plus two, Sam, I'm separating. . ."

"OK, John, I'm high in his six--I've got him wired!"

This scenario could have taken place in many USAF squadrons, but today we're in the Simulator for Air-to-Air Combat (SAAC) at Luke AFB.

"FREEZE--hold it right there guys. See where you are, Sam. You'll overshoot him, and he'll wind up right in your six. Now if you had yo-yo'd then, you'd be in good shape to drive him out of the fight and separate with your wingman. . ."

"Now let's reinitiate and try it again. . ."

There's another side to the successful story of SAAC. . .you might hear it like this at the bar. . .

". . .It's a super trainer, but wait till your bed does a 3-turn spin in the middle of the night. . ."

". . .Does that SAAC ever make me sweat. . . I've never worked so hard. . ."

Sounds pretty stimulating for a simulator, but just this sort of response has been taking place in the SAAC. Recent investigations by the AF Human Resources Laboratory have turned up some interesting psychophysiologic reactions on the part of F-4 pilots while flying simulated dog fights in the SAAC. Some pilots have been experiencing orientation disturbances which have been labeled "simulator sickness" for lack of a better term. (No, this doesn't mean you can get out of a simulator mission just 'cause you're

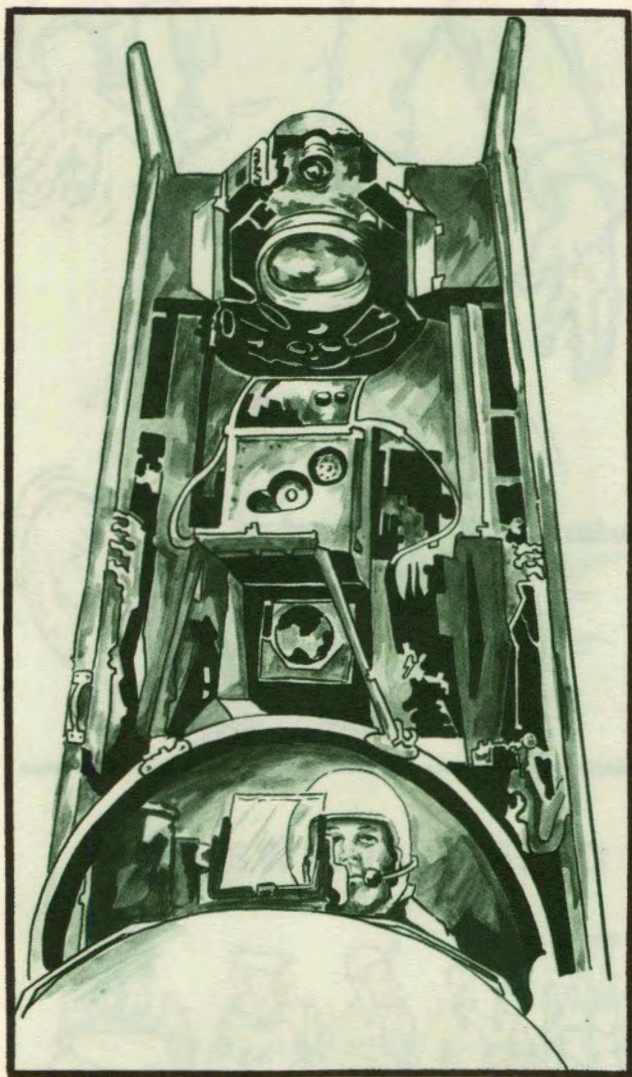
sick of it.) "Sim sickness" is not strictly motion sickness which many people have experienced. Rather, it is caused by internal imbalances which arise when the body compares what's happening to it in the SAAC to past experiences in the aircraft.

During your flying career you have become accustomed to certain physical sensations occurring in conjunction with certain visual sensations. Rapid rolls, reversals, loading the airplane with G, unloading, etc, have accompanying visual pictures which are part of your brain's data bank. You have become conditioned to a force environment which isn't there in the simulator. One sense (visual) indicates changing attitudes in space while another (vestibular) indicates no change in body position. Since you have become accustomed to having both sensory systems react to the change simultaneously, when they don't occur together or one happens alone, strong conflicting internal sensory cues are produced which result in the symptoms of "sim sickness." Wide field-of-view simulators can present most of the visual cues arising from motion without any physical motion present. This addition of a motion platform to the simulator doesn't appear to reduce this sensory conflict either. The stresses of rapid rolling maneuvers and sustained high-G loading cannot be provided. A motion system simply cannot mimic the physical strains created on the F-4 pilot in



# IS UP ?

By Robert E. Coward  
Robert S. Kellogg  
Carl H. Castore  
AFHRL/OTO  
Luke AFB AZ



actual flight--no neck strain--no mask pull--no upper body compression--no sustained G.

But what are these symptoms anyway? Well, they can be as mild as a slight disorientation or as severe as physical reactions including nausea and vomiting. Between these two extremes are symptoms such as profuse sweating, vertigo, dizziness, unusual fatigue, and feeling totally washed out. Some pilots have reported disrupted sleep and short sessions of dizziness.

The most common place where these symptoms are experienced is in the SAAC cockpit while you're flying. Now don't get the impression that everyone who steps into the SAAC gets his gyros tumbled. Far from it. Most people experience mild disorientation during the initial flight, but that usually passes rather quickly. A few individuals have reported a "replay" of certain visual sequences from SAAC missions. These "replays" may occur during any period of light mental activity--later that day while working over a paper or just relaxing in the BOQ. A few other interesting perceptual disturbances have also been reported. One pilot was watching TV and experienced all the physical sensations of a climbing turn and had the impression that the TV was now suspended from the ceiling. Another pilot reported that while lying down his visual field temporarily became inverted 180 degrees until he sat upright! (J. D. Black or Green Label will do that to me



## Which Way Is Up?



Coward, Kellogg & Castore  
are this month's  
Fleagle T-shirt winners

every time. Ed) One of the most frequently reported sensations is that of imbalance similar to that experienced after a long boat or train ride. Many people who have been on a boat all day still occasionally experience the rocking sensation of the waves several hours later. Reactions from the SAAC are basically the same as these, but perhaps a bit more vivid

Some concern has been expressed by pilots, "...if I report these kind of things, I'll be grounded" or "...fighter pilots don't have these problems." These kinds of physical reactions can be expected and are normal reactions to an initial experience in a wide field-of-view simulator! These symptoms do not occur in all aircrews and tend to disappear due to adaptation with repeated experience in simulators like the SAAC.

Full mission simulators with wide field-of-view capabilities will play an increasing role in the development of new tactics and the enhancement of force readiness. The F-4 pilots who have flown the SAAC are enthusiastic about its value as a combat trainer. However, the users of such simulators and future simulators with these capabilities should be aware that some adjustment may be required by pilots when stepping back into the real world from the computer-generated world to "SAAC" the dizzies. An awareness of the nature and possible extent of the symptoms of "sim sickness" can help the pilot deal with such symptoms when and if they arise. The consensus of TAC pilots who have participated in the SAAC training program is that the temporary discomfort brought on by these symptoms is a small price to pay for the kind of combat training afforded by the SAAC.

Additional information can be obtained from the Tactical Research Branch at this address: AFHRL/OTO, Luke AFB AZ 85309.



## Hey! pass it along... nine others are waiting.





# AIRCRAFT RECOGNITION

*How sharp are your eyes and how quick are you? Identify these aircraft and time yourself. These should be easy. How do you rate? Answers on page 22.*

1.



2.



3.



4.



5.



6.



6 correct in 6 seconds or less..... ACE Material  
 6 correct in 6-10 seconds ..... Above Average  
 4-5 correct in 10 seconds or less ..... Air-to-mud Only  
 3 or less correct no matter how long it takes .. Stay home if  
 a war starts

*Photos Courtesy of the 460th RTS*



# F-100, 1953



MAY 1953- First flight of the F-100 prototype.

SEP 1954- First F-100 delivered to TAC unit-- 479TFW.

SEP 1955- First production flight of the F-100C.

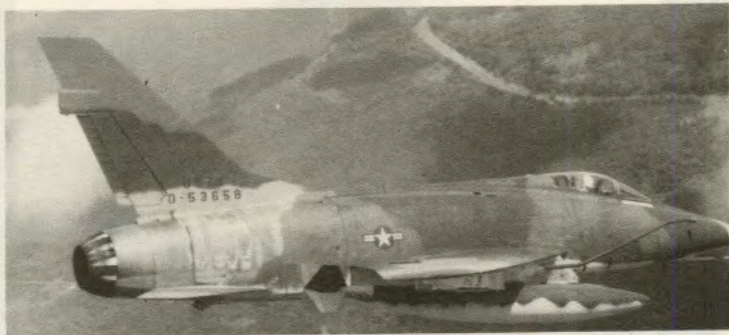
JAN 1956- First production flight of the F-100D.

JUN 1956- First Thunderbird show in the F-100.

AUG 1964- First TAC F-100s deployed to Southeast Asia.

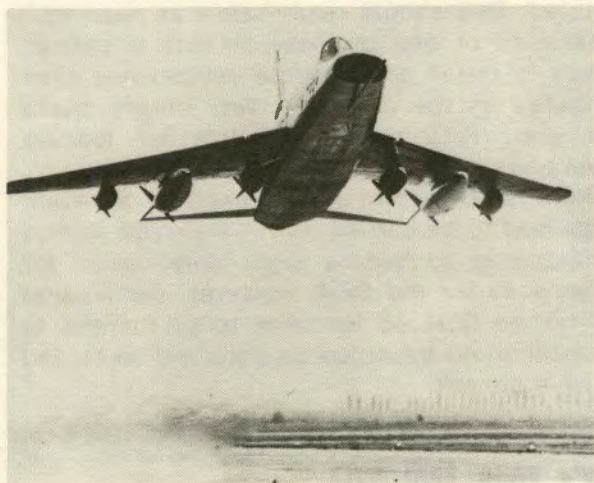
JUN 1971- Last F-100 departed Southeast Asia.

NOV 1979- Last F-100 flight from Hulman Fld, Indiana, 181TFG (ANG), to permanent storage at Davis-Monthan AFB, AZ.





# 1979

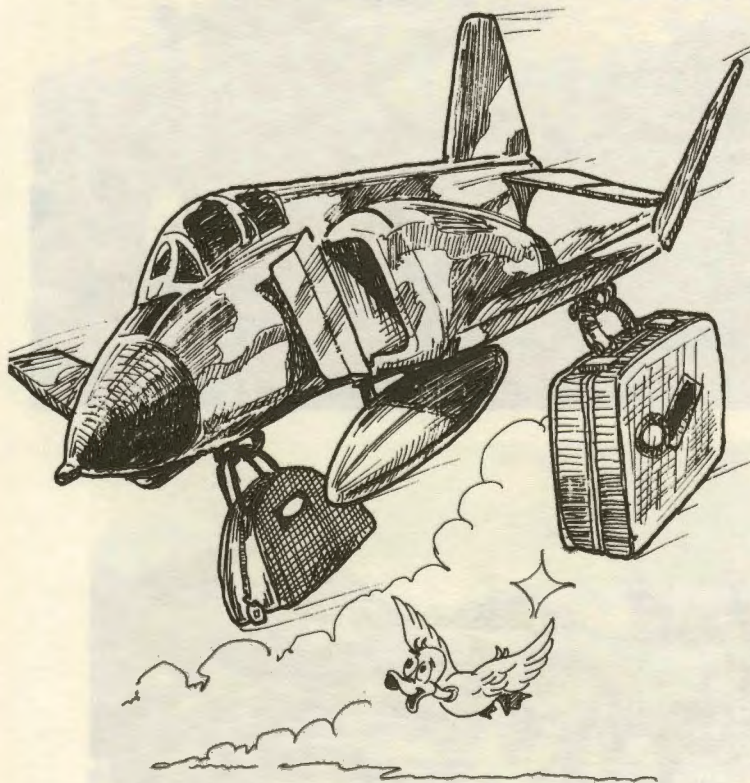




# chock talk

## TRAVEL PODS FOR F/RF-4 AIRCRAFT

TAC has experienced three dropped travel pods this year. Losses have been attributed to fatigued pods and improper loading. Pods which



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

are not modified IAW TO 16W41-2-1 and not airworthy, i.e., structurally sound, will not be loaded on F-4C/D/E/G aircraft. Tech data deficiencies could result in a pod being loaded without a guarantee that the locking latches will remain closed. The checklist requires that a locking pin, or drilled bolt, castlenut and cotter pin, or safety pin without streamer be installed in the ground safety lockout pin hole on the MAU-12 pylon. However, immediately following the word "installed," the checklist states "if req" (if required). This can be interpreted to mean that the pins or bolt, etc., are to be installed only if required. This should read "safety as required." Installation of one of these devices is critical. Failure to install one of these devices has been attributed as the cause for two inflight losses this year. Personnel responsible for loading travel pods must be aware of this deficiency.

There is no current authorization for a travel/cargo pod to be carried on RF-4 aircraft. Action is underway to secure flight certification for cargo pods for the RF-4. However, certification will not be finalized for three to six months. In the interim, no travel/cargo pods will be carried on RF-4 aircraft.

## HOW'S YOUR TOOL KIT?

In the October issue, we ran a short item about an aircraft which had its nose gear jammed by a breaker bar. The investigation of the incident is complete and brought out one other item. The breaker bar had been "borrowed" from another individual's tool kit by the crew chief. When the individual returned his tool kit, the missing breaker bar was discovered, the kit was impounded and appropriate personnel were notified--but the aircraft had already taken off.

Consolidated Tool Kit (CTK) procedures are designed to prevent this type of incident. When those procedures are ignored, the results can be costly--even tragic. Do yourself and your friends a favor--use your own tools.



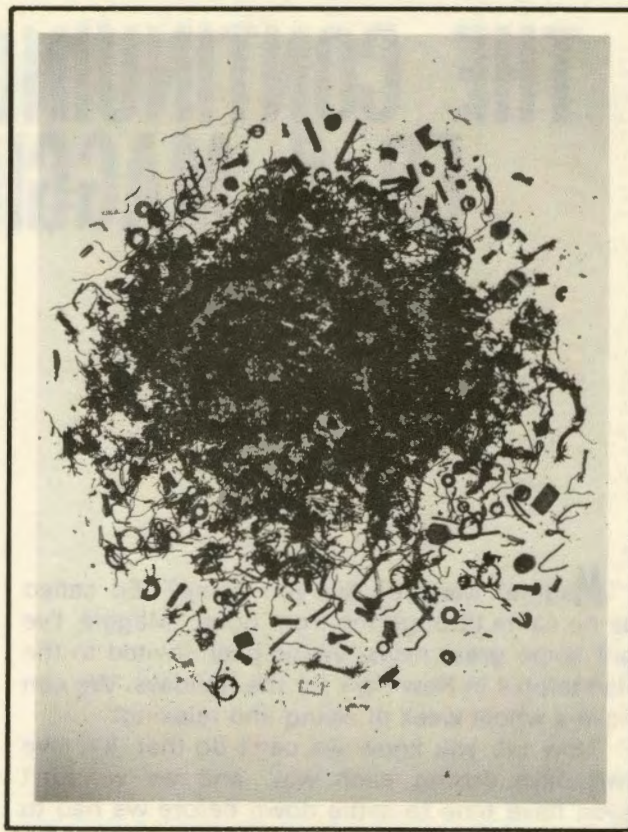
## FOD COLLECTOR

By Maj Roger Cochran  
132 TFW/SE

Since the conversion to the A-7 aircraft, a number of FOD incidents have been experienced resulting in expensive engine replacements at the Des Moines ANGB. To cope with this problem, a concerted effort has been made to reduce FOD by sweeping the ramps and taxiways more frequently. For several months, two supervised FOD walks have been performed each week. We thought that the flight line was exceptionally clean. In fact, we have received numerous favorable comments relative to the same. Read on to find out how wrong we were.

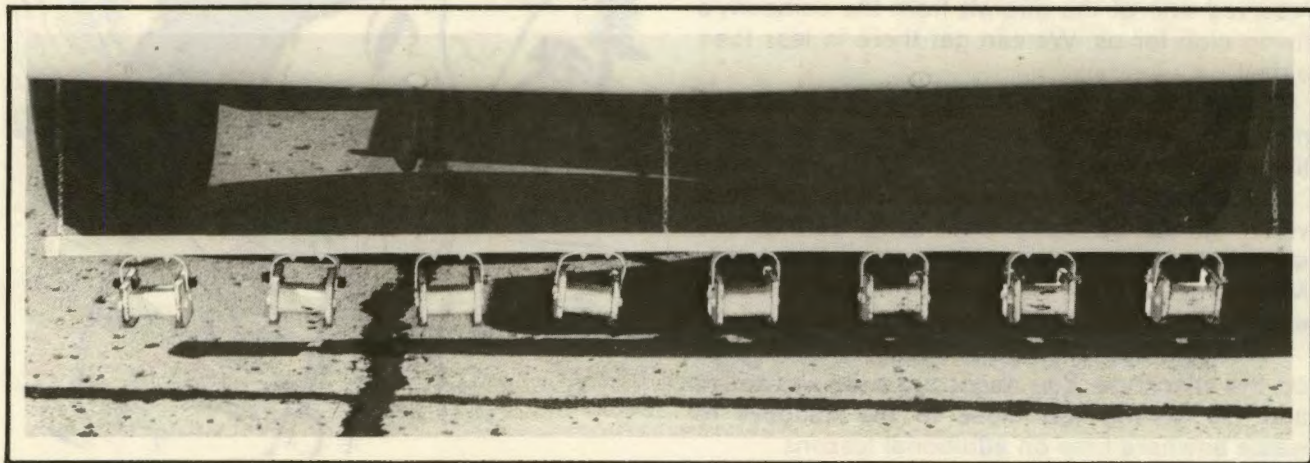
Flight line personnel from two units of the 132 TFW have incorporated an array of magnets to the flight line van to aid in their assault on foreign object damage. Initially, the 185 CAMRON from the Sioux City ANGB adopted this system to assist them in removing FOD from their flight line. The concept was picked up by members of the 132 CAMRON at Des Moines ANGB. The device was fabricated and recently put into service. In one week of operation, the FOD shown in the accompanying photograph was collected. Some of the FOD picked up by this system includes cotter pins, nuts, bolts, washers, safety wire, sweeper bristles, electrical connectors, and other assorted pieces of metal that had some iron content.

The heart of the system is a series of eight magnets (FSN 3990-P58-W090) installed on a piece of angle iron and attached to the vehicle bumper by three pieces of furnace chain and



eye bolts. When in use, the magnets are suspended approximately one inch above the ground. The existing vehicle tow hooks are used to stow the bar and magnets at other times. A picture showing the device ready for use is included.

Some TAC organizations have been using this concept for a long time. Why not try it in yours? It's cheap--it's simple--and it works. It certainly couldn't hurt, could it?





# THE CONTINUING TRAVELS OF ED & MAGGIE

By Maj Pete Abler

"**M**aggie? Maggie? Are you home?" Ed called as he came through the front door. "Maggie, I've got some great news. We've been invited to the Randolph's in New York for the holidays. We can have a whole week of skiing and relaxing!"

"Now Ed, you know we can't do that. It'll take two days driving each way, and we wouldn't even have time to settle down before we had to turn around and come back. Besides, who's going to watch the kids? We can't leave them alone."

"Sure we can. Jerry is 17, and Jean will be 16 next month. If we can't trust them alone now, we'll never be able to. Besides, they're both good kids, and I'm sure everything will be all right. I've already talked to Tom, and he's agreed to check with them while we're gone. The best part is yet to come. I take my flight check for the private pilot certificate next week. We can fly! I've reserved one of the aircraft from the company's flying club for us. We can get there in less than a day!"

"I don't know, Ed. After all, you'll be a brand new pilot. Are you sure you can handle a trip like that so soon?"

"You gotta be kidding me? Who do you think you're gonna be flying with, some yutz off the street? I happen to be pretty good, you know. My instructor said I was one of his best trainees ever. He said the checkride would be a breeze!"

"Well OK, but let's wait and see how things go on the checkride. You might not pass you know, and it's getting too close to the holidays to waste anymore time on additional lessons."

Ed was humming to himself as he came into the house. "Dum de dodo dee dum. Maggie, I'm home. Come say hello to the world's newest pilot! Oh, I have slipped the surly bonds . . ."

"Wow! That's terrific, Ed! How did the checkride go?"

"The proverbial piece of cake," answered Ed. "I had a few minor problems with the instrument work and forced landings, but otherwise I dazzled him with my footwork. In just three short weeks we'll be out on the slopes . . ."





• • •  
"Now Maggie, I told you last summer that we don't need all this stuff! Besides, a 150's not like our station wagon. We can only carry a small amount of luggage in addition to our ski stuff. Two of these suitcases have to stay."

"Ed, we're going to be gone a whole week. I can't possibly be gone for a week without my clothes and stuff. I'm only taking what's absolutely necessary. How could a little extra weight hurt that airplane anyway?"

"Something about center of gravity or something like that. I suppose one extra suitcase won't hurt."

Jerry drove Ed and Maggie to the airport. It didn't take too long to load the airplane, and they didn't bother to tie everything down. The skis were the toughest part, but Ed solved that by opening the bulkhead access door and sticking them halfway back into the fuselage.

• • •  
Ed handled himself pretty well for a guy with so few hours in the aircraft. He patiently explained all the gauges, dials, and other instruments to Maggie. He pulled out onto the runway and was cleared for takeoff. The engine ran smoothly as the aircraft strained against the brakes. Feet off the brakes and away they went.

"We're off like a dirty shirt!" exclaimed Ed as the nose came up. As the nose pitched mildly up, the heavy suitcases slid rearwards, and Ed frantically shoved the yoke forward to get the nose back down where it belonged. Maggie asked Ed what happened, but the only reply was some unintelligible mumbling. (Lucky for Ed)

Once the aircraft was climbing smoothly, Ed relaxed his iron grip on the yoke and sighed in relief. "Gotta tie down those suitcases next time," he thought to himself. As they leveled at 5,500 feet it seemed like they could see for miles. "Should be good weather all the way," said Ed. "The weatherman on TV said the east coast will be clear all day. Just smooth sailing. We'll be stopping in Maryland for gas and a bit of lunch."

"Did you get a weather briefing from the flight service station? You told me that you were always supposed to do that before you flew."

"Naw, that stuff is for the students. Once you get your license, they leave those things to your common sense. After all, what would the FAA weather guys know that the TV forecaster doesn't know? The weather information all



comes from the same place anyway. And look outside, it's beautiful, right?"

"If you say so," said Maggie unconvincingly. "I hope he knows what he's doing," she thought silently.

• • •  
After a landing that could have been better called an arrival, they taxied in to the ramp. Ed made sure the luggage was all tied down before they went into the snack bar. A quick lunch, pay for the gas, and they were on their way once more.

Ed was prepared for the nose overrotating on takeoff. He had explained to Maggie that the extra weight caused the tail to rotate downwards but that he could handle it.

As they leveled off once more, Maggie asked, "Ed, what were all those people doing in that room back at the airport?"

"Oh, that's where you do your flight planning; you know, for winds and how far you can fly and stuff. You file your flight plan with the flight service guys there."

"How come you didn't do that?"

"No need for that. That's for guys who are going to fly IFR, you know, under instrument flight rules. They fly under air traffic control and are followed the whole way by ground radars. The



## THE CONTINUING TRAVELS OF ED & MAGGIE

only time you do that is when the weather's bad, anyway."

"Sounds smart to me," said Maggie. "You know where you are the whole time, and they can help you right away if you have trouble."

"Naw, it's a real pain. You have to make a lot of extra radio calls, and you need an instrument rating to fly in real weather anyway. I don't have the instrument rating and the weather's good, so we'll be OK."

"Did you file a flight plan, Ed?"

"No way, that's just like the weather. You don't need to if the weather's good. Besides there're so many airports around here, we could practically glide to one if we had to," Ed explained impatiently.

Crossing over the border between Pennsylvania and New York, it began to get turbulent. Ed and Maggie were being bounced around pretty well. Left, right, up, down, and all over again. Maggie was starting to look a little green around the gills. "How much longer is this going to keep up?" she asked.

"Don't know," said Ed. "The weatherman didn't say anything about turbulence at all--I guess they wouldn't cover that on TV anyway. Look at that smoke on the ground. The wind must really be blowing down there!"

The last 45 minutes of the flight seemed like an eternity to Maggie as she was continually bounced around the cockpit. "Anyone who thinks this is fun has to be crazy!" she thought to herself. "I feel like I'm going to get sick any second, but Ed would die laughing if I do--and I'm not going to give him the satisfaction."

"Podunk Unicom, this is Cessna 2463 Uncle Mike. Request landing instructions. We're 10 miles south."

"Roger Cessna 2463 Uncle Mike. Runway 32 is in use. No other reported traffic. Enter a left downwind, winds are 270 at 12. Altimeter 29.83."

"Roger, dodger," replied Ed. "See, Maggie, I told you it would be a piece of cake. Nothing to worry about."

Maggie kept her thoughts to herself. Besides she was afraid to open her mouth . . .

Ed didn't realize that all the turbulence had bounced things around pretty well and that one of the skis had migrated all the way back in the fuselage and was resting on the control cables.

One last air pocket on base leg was all it took to jam the elevator.

Ed hadn't noticed the binding until about halfway down final approach. Fight as he would, he couldn't break the yoke free. He yelled to Maggie to hang on and closed the throttle when they were about 20 feet in the air.

The aircraft hit nose wheel first with a jolt that rattled their teeth--and also broke the elevator loose. The porpoise which followed reminded Ed of the Brahma bull riding he had witnessed in his youth. Somehow, miraculously perhaps, the aircraft came to a stop. Ed regained his thoughts as he taxied off the runway. He noticed that the engine was running pretty roughly as he stopped on the ramp.



They didn't have a prop at Podunk to replace the bent one. At least the engine seemed to be OK and no apparent damage to the airframe. The flying club manager seemed pretty perturbed when Ed called him. As a matter of fact, he was downright nasty and told Ed not to fly the aircraft back. The club would send a new prop, mechanic, and pilot up for the aircraft, and Ed was going to have to pay for anything the insurance wouldn't cover . . .

The bus ride back home was uneventful--neither Maggie nor Ed seemed eager to talk, especially since their skis were ruined, and they only spent two days with the Randolphs. "Oh, well," thought Ed, "maybe we can fly to Yellowstone in the spring."

### Answers to Aircraft Recognition from pg. 15

- |            |                 |
|------------|-----------------|
| 1. KFIR    | 4. MIRAGE III   |
| 2. G-91    | 5. MIRAGE F-1   |
| 3. HARRIER | 6. MRCA/TORNADO |





# TAC SAFETY AWARDS

## Crew Chief Safety Award

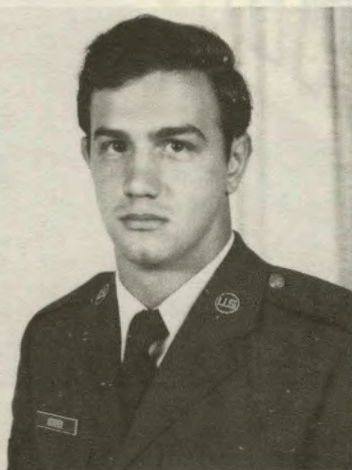
Senior Airman Michael Reidy, 49th Aircraft Generation Squadron, 49th Tactical Fighter Wing, Holloman Air Force Base, New Mexico, is the recipient of the Tactical Air Command Crew Chief Safety Award for December 1979. His thoroughness and technical ability are evident in his superior performance as an F-15 Assistant Dedicated Crew Chief. His aircraft is one of the most consistent high flyers in the 7th Aircraft Maintenance Unit. In addition, his adherence to safety practices in all aspects of his job is commendable.



SrA Michael Reidy

## Individual Safety Award

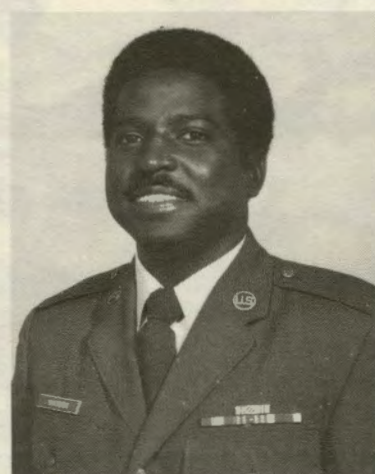
Airman First Class John E. Cooper, 49th Component Repair Squadron, 49th Tactical Fighter Wing, Holloman Air Force Base, New Mexico, is the recipient of the Tactical Air Command Individual Safety Award for December 1979. He demonstrated uncommon presence of mind when he noticed a child submerged in a swimming pool. Quickly retrieving the child from the pool and administering mouth-to-mouth resuscitation, Airman Cooper saved the child's life. His immediate, correct response in this critical situation reflects credit upon himself and his unit.



A1C John E. Cooper

## Ground Safety Award of the Quarter

Staff Sergeant Bennie J. Watson, 67th Tactical Reconnaissance Wing, Quality Assurance Section, Bergstrom Air Force Base, Texas, is the recipient of the Ground Safety Award for the third quarter of 1979. His efforts to insure safety such as the use of reflectorized belts during darkness on the flight line and his initiation of an office checklist to help identify and correct discrepancies have enhanced his unit's safety program. Sergeant Watson's involvement in mishap prevention reflects credit upon his unit and the Tactical Air Command.



SSgt Bennie J. Watson



# LEADERSHIP, DISCIPLINE, AIRMANSHIP

By Col Robert D. Anderson  
HQ TAC/DOX

This is the second in a series of articles on leadership, discipline, and airmanship. In the last issue, we discussed leadership and how it



applies to tactical aviation. But leadership cannot exist in a vacuum. A leader must have someone to lead--other flight members who will aid in accomplishing the mission. Just as the flight members rely on the flight lead to provide the expertise and leadership to accomplish the mission, the flight lead relies on the wingman to provide the mutual support necessary for him to devote his attention to flight lead duties.

As I stated last month, from August 1978 to July 1979 we lost 38 aircraft and 26 aircrew members. In 27 of our accidents, operational factors caused or contributed to the mishap. Out of all the accidents involving operational factors, 52% involved breakdowns in discipline. Individuals in a formation did not carry out their duties to the point that their lack of accomplishment caused an accident. Here are some examples of breakdowns in flight discipline that cost us aircrews and aircraft:

- During a syllabus training mission, a four-ship was split into two elements. During the subsequent maneuvering, numbers two and four violated their altitude blocks and collided.



- During a cross-country mission, a wingman from another command failed to maintain position in tactical formation and flew into the lead aircraft.

- After entering IMC conditions, the number four aircraft in a four-ship lost sight of the formation and went lost wingman. The pilot did not follow established procedures to maintain positive separation from the rest of the flight and eventually collided with the number three aircraft.

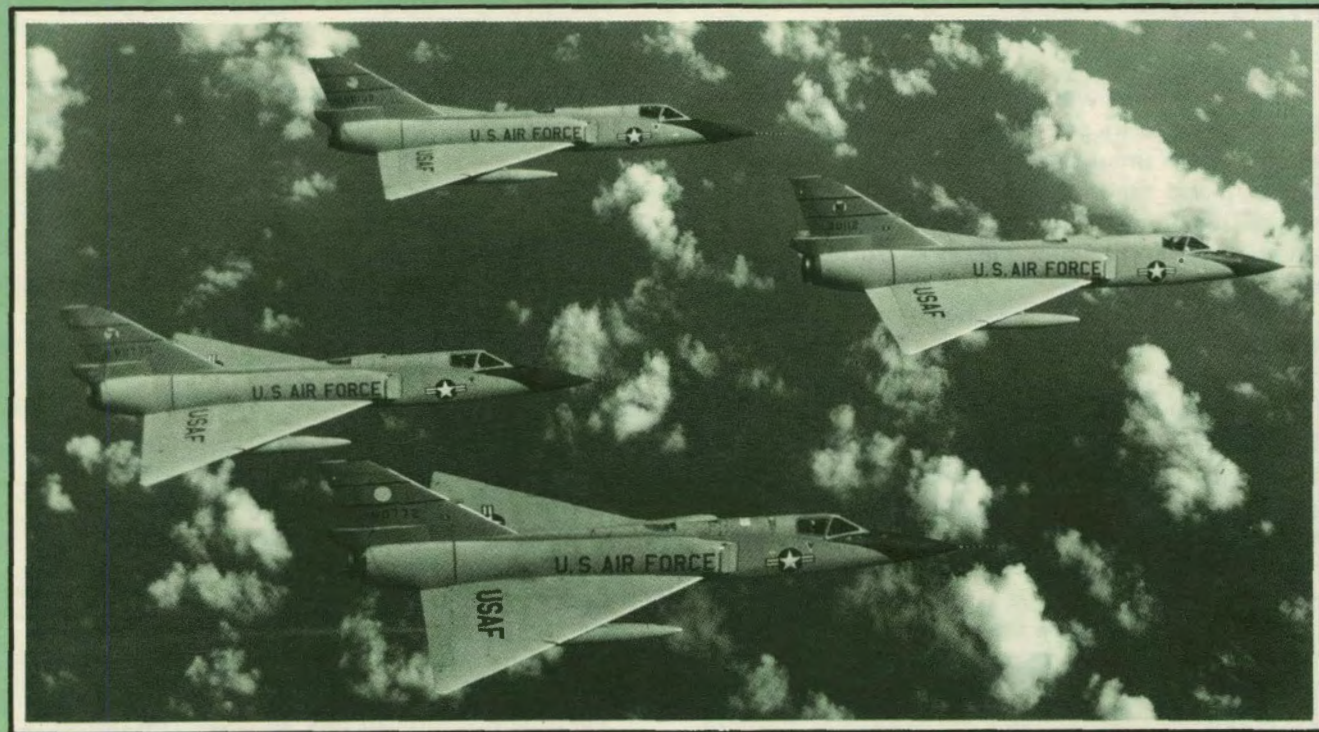
Discipline is both an individual and group responsibility, but the discipline of the entire flight grows out of the need for mutual support and the individual discipline of flight members. What do we mean by individual discipline? Well, some attributes of the disciplined individual are:

- Is physically, mentally, and emotionally ready for the mission.

- Uses correct radio terminology. I'm not implying that "two, bingo, and mayday" are the way to go, but there is no room in tactical aviation for unnecessary, extraneous radio chatter.

- Supports the leader and other flight members to the best of his ability. If you don't believe it's worth the effort, remember the last time you were in a flight where folks didn't do their job. Do you remember when the free fighter tried to come into the fight too soon and almost hit the leader? Or how about the time number four was making wise cracks about everyone's range scores? Made you pretty mad, didn't it? Can you remember any close calls within your flight that were caused by someone in the flight not doing their job? I'll bet you can.

Discipline then is the invisible ingredient that holds the flight together, enabling it to effectively accomplish its mission--particularly when



- Listens closely during the briefing and questions items that are not clear.

- Maintains prebriefed formation positions throughout the flight. If he gets out of position, works immediately to get back in.

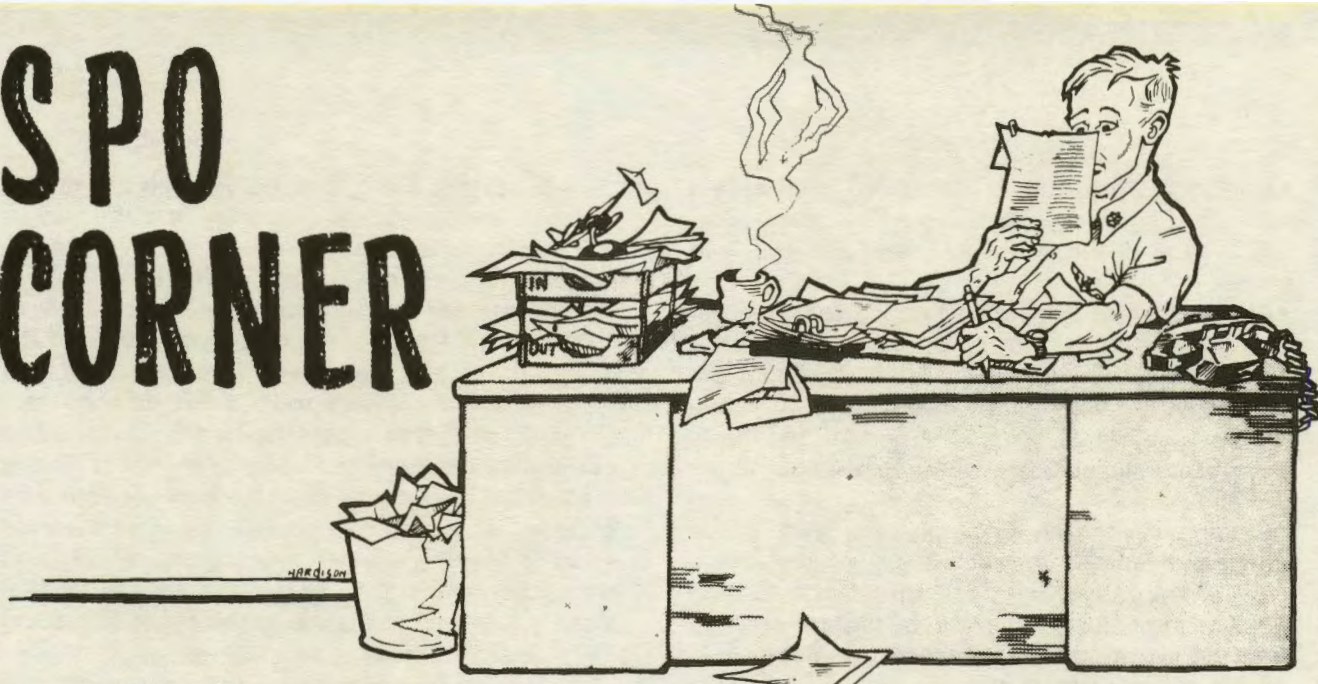
- Never performs unauthorized maneuvers. How many wingman have you seen try to join out of a barrel roll maneuver and end up going straight up, straight down, or any other way but the right way?

the going gets tough. Every winning team or individual requires discipline whether it's baseball, football, golf, or flying tactical fighters. In the next armed conflict, we could very well be outnumbered and outgunned. A well disciplined, well trained force is the only way we can hope to come out on top.

Next month we'll tie all three subjects together in the final article on airmanship.



# SPO CORNER



## A-10 FLIGHT CONTROL JAMS

By Maj Wayne P. Skora  
HQ TAC/SEF

The A-10 pilot was on a Maverick pass when his stick froze in pitch. First attempts to regain control were unsuccessful. The pilot prepared to bail out and made one last attempt to free the stick. This time it broke loose. The landing was uneventful. Sometimes it feels good to get back on the ground!

The jam was caused by a screw lodged between the bellcrank and the floor in the A-10 "white area."

The A-10 flight control system is the cable-bellcrank-actuator type. Like any system with interconnected mechanical parts, it is subject to jams caused by foreign objects. Because of minimum clearances, any foreign objects in the "white area" can be especially critical. The primary "white area" is a compartment which extends from just forward of the stick boot, runs between the pilot's feet, and ends behind the seat. This area is painted white and houses components that connect the stick and rudders to the rest of the control system.

Thus far in 1979 there have been four confirmed flight control jams caused by: a nut, a screw, and a mechanical pencil in the primary white area and a 3/8-inch drive socket which jammed controls outside the white area. In addition, a probable flight control jam was cited in an A-10 fatal accident.

Actions being taken to alleviate the problem include: increased emphasis on quality control,

sealing of migration paths into the white area, increasing flight control clearances, and improved jam indicators. Remember, however, if something is jammed in the white area, you won't get a jam light.

The possibility of a flight control jam still exists, and you must be mentally prepared with a game plan at all times. Above all, if you can't free the jam, don't forget your minimum ejection altitude.

## SYSTEM SAFETY GROUPS

By Capt Roger E. Parks  
HQ TAC/SEF

At least once a quarter, sometimes more often, a call comes in from a bewildered wing FSO asking what we meant by our message soliciting agenda items for a Systems Safety Group (SSG). It seems that confusion over what an SSG is, what it does, and how it affects folks at the unit level, is as recurring as ground training requirements. Perhaps what follows will clarify the subject:

Each of our aircraft has an SSG. The group is comprised of representatives from the using commands, the maintenance and technical communities, and in some cases, contractor representatives. Meetings are chaired by either the systems safety "type" from the aircraft System Project Office or by a representative from the prime air logistics center. TAC Safety is normally represented by the safety SPO for the appropriate aircraft. Numbered air force and wing Flight Safety Officers are also invited to at-



tend. Each SSG meets at least annually; most meet semiannually.

The SSG is a safety forum. It allows crosstalk and coordination on safety problems among all agencies associated with a weapons system. Since SSG members represent a broad spectrum of special experience and expertise, the group attacks all safety problems related to a system.

HQ TAC/SEF is currently stressing the SSG as one of the best flight safety sounding boards we have. However, the vitality of these meetings depends on your inputs. Agenda items are comprised primarily of ideas from the field. We recommend the wing FSO advertise the SSG and solicit potential agenda items wing-wide. Many of our best inputs are generated by safety problems encountered by maintenance personnel and aircrews. The only criterion for an agenda item is that it address an existing or potential safety problem.

Finally, we encourage wing representatives to attend. The FSO isn't the only guy who can address existing or potential safety problems.

## F-15 MULTIPLE EMERGENCIES

**By Capt Gary Porter  
HQ TAC/SEF**

Immediately after takeoff in your Eagle jet you get Master Caution, Fuel Hot, Right Bleed, Right EEC, and Hook lights. To top it off, your right engine begins to spool down. What do you have?

An F-15 student pilot and his IP chase had to make this decision recently, and it points up the complexity of multiple emergencies. The incident was caused by an improperly torqued nut which allowed a bleed air manifold to come loose in the right engine bay. Unfortunately the leak occurred right beside the Fuel Hot sensor. The sensor, set to respond to 215°F fuel, responded to the 1000° air and gave the pilot a bogus Fuel Hot light. Additional air struck a wire bundle going to the tail hook, severing several wires and releasing the hook. The hook didn't extend, however, because of a previously incurred binding in the cable housing. Meanwhile, back in the engine bay, a flying transfer tube penetrated the right EEC, causing the EEC light but, contrary to appearances, did not result in engine spool down. The spool down was started by the sudden loss of combustion chamber burner pressure which told the UFC to cut back



to subidle conditions and probably prevented a restart after the pilot shut down the engine. Why no overheat light? Well the same tubing that plowed into the EEC also hit and crimped one of two fire warning loops and rendered it inoperative. This loop should have been eliminated by the fire warning controller and the second signal used. It is thought that due to bypass air in the engine bay the temperature around the other loop was probably less than required 740°F.

The flight lasted 14 minutes and kept the student and IP busy to say the least. Fuel was dumped and an uneventful landing made. We see here the multiple effects of hot bleed air rampaging in an engine bay and also that there was more than met the eye. The F-15A Dash-1, like all Dash-1's, starts Section III with the words:

1. Maintain aircraft control.
2. Analyze the situation and take the proper action.
3. Land as soon as practicable.

We also see the words: "The situations covered are representative of the most probable malfunctions. However, multiple emergencies, weather or other factors, may require modification of the recommended procedures. Accomplish only those steps required to correct or manage the problem." If the Dash-1 contained a procedure for every eventuality, you would never digest it all. The big questions we all need to ask ourselves are, "What would I have done under these circumstances?" and "Is my knowledge of aircraft systems and emergency procedures sufficient to analyze this situation and take the proper action?"



# HYPOXIA BLUES



**By Capt Don Rupert**  
**479 TTW/SEF**

Joe Jock: Ho hum. Another trip to the vacuum box. You'd think that they'd figure out that our symptoms don't change every three years. I bet I have the same ones as last time. Why don't they put this thing in rehear and get it up to altitude?

(A couple of minutes later.)

Amn Chamber: Okay, all of you on the right can remove your masks now.

Joe Jock: Here we go again . . . Nothing yet. Who makes up these crazy questions? Can we use our calculator on these math questions? Yep, tingling again starting in my feet and working up . . . The lights just went dim and my yellow pencil doesn't look so yellow any more

. . . My heart beat really kicked into high gear. Gotta work fast; can't let that SAC guy answer more questions than I do . . . Come on fingers, write! Dumb, trick questions . . . My head feels like a 1Lt flying BFM--all speed and no direction; must be anxiety . . . I'll bet the volume on the tingling really gets turned up soon. Yep, there it goes; like a whole army of ants. My fingernails sure are turning blue now . . . That guy next to me is gonna pass out if he didn't getiz mask on soon . . . (Expletive deleted.) I dropped my pencil. (After picking it up.) Wow! Do I feel dizzy. That's 'nuff! Mask on. Fingers, I said, mask on! Dumb offset bayonets.

Amn Chamber: Need some help, sir?

Joe Jock: Huh? I can do . . . do it myself.  
(On the way back down.)

Joe Jock: I'd never let my symptoms go that far any other time, but I wasn't gonna have those heavy drivers stick it out longer than I could.



Sound familiar? Did you ever think of what you can't notice about your hypoxia symptoms while flying a fighter? We already know from Murphy's buddies that if the cabin pressure quits, the oxygen probably will too; statistics prove that happens all too often. Put yourself in the following situation: 2-ship MIG CAP, approx FL 200, tactical turns to stay in your assigned area, head and torso look like a rotating beacon checking six, position, and the radar. Think you'll notice the initial tingling? Your G-suit has been inflating and deflating ad infinitum and you've been twisting around to check six. These motions have your skin already tingling somewhat, and your mind has desensitized that brain input because there're more important things to think about.

Think you'll notice the lights go dimmer or if colors lose their brilliance? Your lights dimmed every time you put 5 Gs on your bod. Your eyes have already been adjusting because of turning toward and away from the sun several times. You're squinting to see the aggressor before he sees you, and there ain't no colors to look at anyway. Scratch those symptoms.

How about a heart beat increase? It's already pumping hard 'cause of the Gs, then GCI calls the bandits airborne or converting on your flight or Atoll! Atoll! And see if that doesn't peg your heart beat!

Think you'll notice anxiety? Fat chance. It'll be masked by frustration or panic, because you can't see the bandits yet and you just know they see you. Ever notice that the feeling of hairs standing up on the back of your neck (when you know someone is behind you and about to shoot) feels a lot like a hypoxia symptom. Both have saved lives.

Consider manual dexterity (fast fingers). Our air-to-air machines already have more keys than a piano. How would you know if it was a lack of practice, fat fingers, or hypoxia that made you select the wrong radar mode, or guns when you wanted a heat seeker? That happens even on good days.

You might notice the army of ants sharing your flight suit, but would you knock-it-off when you only needed a little more lead to get a kill?

How about dizzy? Break turn! Extend, pitch back, high AOA reversal; he didn't overshoot. Slice back; he's still on your tail about to go guns. Jink out! Lost sight; diving spiral and now beam down to a little white line and bet a cop a

paycheck that you can walk a straight line. Even though a little dizzy is normal, it still is one of the symptoms you might notice. It may only be situation awareness or spatial disorientation, but it could be hypoxia. Going 100% O<sub>2</sub> is a good procedure until you figure out which, 'cause if it was hypoxia, you may euphorically plant yourself in the dirt along side a molten mass of metal.

Since USAF doesn't issue see-through gloves, unless worn for two straight years, it'll be hard to tell if our fingernails or lips look like Dracula's. So much for seeing cyanosis.

We know that a rapid or explosive decompression cuts our time of useful consciousness in half, but did they tell us how physical activity (max performing a fighter) cuts it down? There's no set amount, but you can believe it's a lot. Think how much faster you burn oxygen in the middle of a hard turning fight as compared to sitting calmly in the cool altitude chamber.

All of the above point out how hard it is to recognize your own symptoms, but what can you see to suspect your buddy might have hypoxia? Slurred speech, a transmission which doesn't make sense, sloppy flying, can't stay in formation, leads like a roller coaster, or eases off a turn or fight when being hammered. All of these are also typical new-guy mistakes, and are usually followed by a query or directive call. An improper response, series of responses, or total lack of response may warrant a clear and distinct call to go 100% oxygen and emergency flow--or to eject if the situation requires it. A personal name may get his attention better than a call sign at this time. Which call to make will probably be influenced by the aircraft's altitude and attitude, and whether you can see the crew's head (nodding, down, or up and looking around). Above all, if funny things start happening, don't assume that things are OK. Use whatever means you have to get things on the right track.

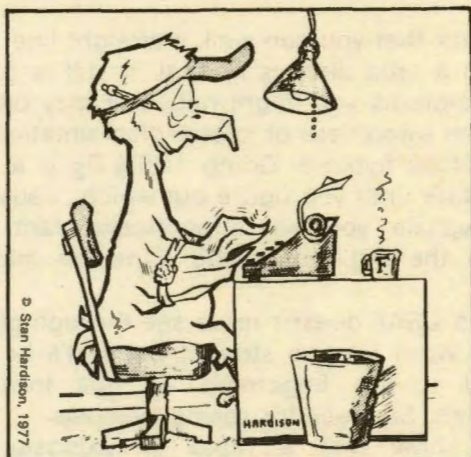
It takes some occasional mental preconditioning to remind yourself to mentally sample what you feel in flight for the possibility of hypoxia. If it ever crosses your mind that something you feel may/might/could be a hypoxia symptom, go 100% O<sub>2</sub> before you think about it and then check it out.

Our tactics should be as sneaky and insidious as hypoxia; we would hardly ever lose.





# LETTERS



Dear Editor,

You, no doubt, have received other correspondence in regard to the subject of this letter. If not, it is in reference to the second column of page 18 of the September 1979 issue. The portion that reads, "After the Gun locking/unlocking cam was removed, the crew pulled the gun safing pin. The GAU-8/A firing pin released and the gun functioned as advertised . . ." is in error. Actually, nothing will happen at this stage of disassembly. In referring to unclassified message that was released on this incident:

"...mid track and lock/unlocking cam were removed, clevis pins (2) were removed from safing cam, and gun safing pin was removed in order to remove the safing cam. When safing cam was removed, cocking pin went forward, striking primer, and fired the round."

The safing pin prevents electrical actuation of the safing cam. With a round positioned at the sear point, manual raising of the safing cam will fire the round.

Your publication is vital to all our efforts and is greatly appreciated in the field.

D. FLETCHER, Fairchild Republic Co.  
A-10 Weapons System  
103 TFG

T. RAYMOND, General Electric Co.  
GAU-8/A Gun  
103 TFG

Dear Mr. Fletcher and Mr. Raymond

September's "Weapons Words" incorrectly summarized the maintenance steps leading to the inadvertent ground firing of an A-10 30mm gun round.

Actually, the GAU-8/A gun's mid track and lock/unlocking cam, safing cam clevis pins, and gun safing pin were removed. When the crew removed the safing cam, the cocking pin went forward, firing the round.

In attempting to emphasize the hazards of forward firing ordnance on our flight lines, we simplified the mishap scenario, but at the same time, overlooked vital system safety design features of the GAU-8/A system.

Our apologies to GAU-8/A gun folks.

Ed

Dear Editor,

On receiving your new issue of TAC ATTACK (VOL 19, NUM 10), I was pleased to find your issue contained the former members of ADCOM joining our TAC team.

On reading through your magazine, I encountered some mention of my former unit, 5 FIS, Minot AFB, ND. And also a picture of the unit patch. But on closer inspection of the logo on the bottom of the patch, I noticed a small mistake.

The bottom logo that was on the patch on page 5 read:

ISTI NON PENETRASUNT

Because of wearing this patch for two and a half years, I got to know it very well. The error was in the spelling of the third Latin word. The correct spelling being PENETRABUNT.

A small error I know but one that stands out to someone who took pride in wearing one great looking patch of one outstanding unit.

All in all, let me thank you for welcoming some great people into TAC plus putting out a very good mag.

Sincerely,  
Dan Sullivan, SrA, USAF  
474 TFW/HSS  
Nellis AFB NV

SrA Sullivan,

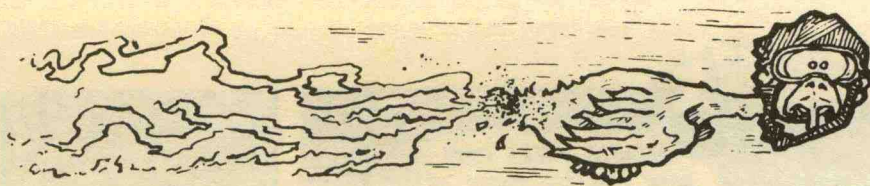
You caught us with our Latin showing. Actually, we were working from a photo of the patch and the "B" looked more like an "S" which is how we drew it. If we offended any former or present members of the 5 FIS, we apologize.

Thanks for the kind words about the magazine. I hope all former ADCOM personnel enjoy TAC ATTACK. I'd really like to hear from you out there as to how we can improve the magazine to fill your needs.

Ed



# TAC TALLY



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

TAC		
Oct	THRU	Oct
	1979	1978
2	34	27
0	25	17
2	36	30
2	23	24

ANG		
Oct	THRU	Oct
	1979	1978
1	7	12
1	6	9
0	4	7
0	2	6

AFR		
Oct	THRU	Oct
	1979	1978
0	3	2
0	2	0
0	3	2
0	1	2

## TAC'S TOP 5 thru OCTOBER '79



TAC FTR/RECCE	
class A mishap free months	
34	347 TFW
21	479 TTW
20	33 TFW
13	1 TFW
12	31 TFW

TAC AIR DEFENSE	
class A mishap free months	
95	84 FIS
81	57 FIS
34	5 FIS
31	48 FIS
17	318 FIS

TAC GAINED FTR/RECCE		
class A mishap free months		
57	156 TFG	(ANG)
38	184 TFTG	(ANG)
37	123 TRW	(ANG)
22	121 TFW	(ANG)
22	108 TFW	(ANG)

TAC GAINED AIR DEFENSE		
class A mishap free months		
87	191 FIG	(ANG)
68	102 FIG	(ANG)
64	177 FIG	(ANG)
43	158 DSEG	(ANG)
30	125 FIG	(ANG)

TAC/GAINED Other Units		
class A mishap free months		
116	193 TEWG	(ANG)
103	USAFTAWC	(TAC)
99	919 SOG	(AFR)
91	105 TASG	(ANG)
72	1 SOW	(TAC)

## CLASS A MISHAP COMPARISON RATE 78/79

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

TAC	1978	16.0	12.4	8.3	7.5	5.8	6.3	6.1	6.7	6.5	6.3		
	1979	6.9	7.0	5.9	6.6	7.4	6.2	7.2	7.1	7.8	7.4		
ANG	1978	0	3.4	4.0	5.9	8.1	7.4	7.9	6.9	6.7	6.6		
	1979	0	11.4	9.0	9.7	7.6	6.2	5.4	4.6	4.1	4.2		
AFR	1978	0	0	10.9	7.8	6.0	4.8	8.1	7.1	6.3	5.7		
	1979	0	0	19.9	23.1	17.0	13.4	11.6	9.9	8.7	7.8		

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

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# FLEAGLE

