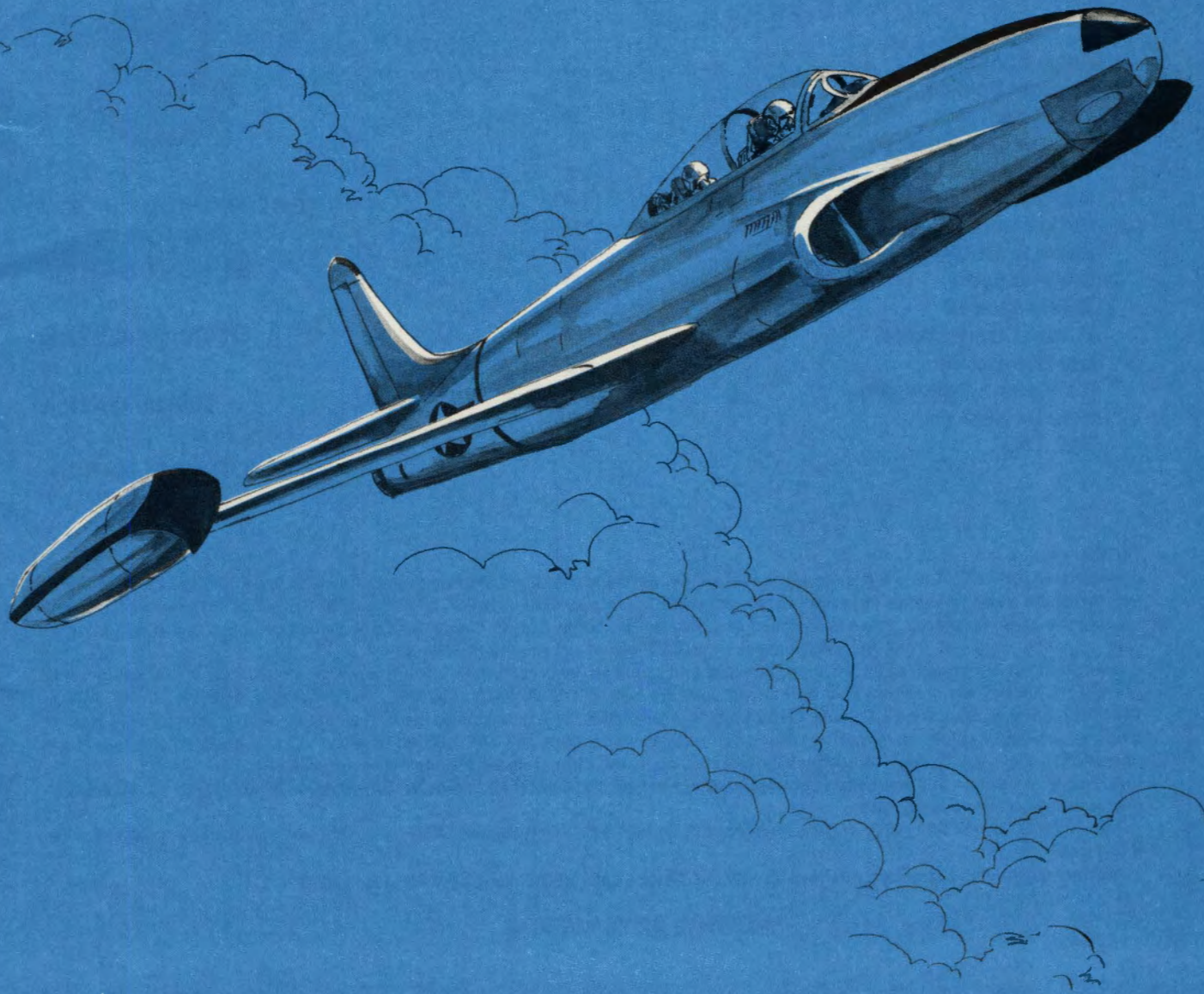


TAC ATTACK

JUNE 1981





READINESS IS OUR PROFESSION



TACTICAL AIR COMMAND
GENERAL W. L. CREECH
COMMANDER

LT GENERAL THOMAS H. McMULLEN
VICE COMMANDER

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TACRP 127-1

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Angle of Attack



TRUST AND CONFIDENCE

The American people have shown their trust in the military. The need for a strong defense is recognized. That places a responsibility on us which we cannot take lightly.

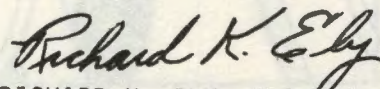
We can help repay that confidence by taking care of the resources we have, both people and equipment. If we cause a loss, we have wasted those resources. We can prevent mishaps by doing our job right. We have a system of checks and crosschecks—use the system and catch the errors.

If we find a defective design or procedure, we must pass the word to those who can fix it. There are many means: materiel deficiency reports, haz-

ard reports, high accident potential reports, Project Nickel inputs, AF Forms 847 and AFTO Forms 22, hazardous air traffic reports, and suggestions. They all serve a purpose; but if we sit on a problem, we are contributing to the mishap.

By doing our jobs and passing the word on when needed, we'll be carrying out our obligation to the American people. As Gen Lew Allen, Jr., Air Force Chief of Staff, said recently:

The American people place a great deal of trust in us. Each of our members has a unique responsibility to maintain that trust, that confidence.



RICHARD K. ELY, Colonel, USAF
Chief of Safety

BECOMING A SAFE BOATING



STATISTIC

By Arnold W. Mueller
Vice Commander
U.S. Coast Guard Auxiliary Flotilla 61
Hampton, Virginia

Editor's Note: June 7-14 is Safe Boating Week. Mr. Mueller's article emphasizes the positive side of safety statistics, the majority who don't have accidents. If we take the boating safety courses which are available and follow Mr. Mueller's tips, we'll be well on our way to becoming and remaining a safe boating statistic.

"Boats for Sale," read the sign. There before me were all sizes, large, small, and in-between, on and off trailers. The prices weren't really too high either, considering that everything of any real value had been rising in price. So, here we were, my wife and son and I, at the marina looking for the boat that would be just right, one that would take us to where the fish were biting and that would be safe for water skiing. We wanted to become a *safe boating statistic* and had prepared for this day as a family. All of us had taken the safe boating courses offered by the U.S. Coast Guard Auxiliary and the United States Power Squadron. In addition to these courses, we had studied the many pamphlets available from the Coast Guard and Red Cross. My son, a sea explorer scout, had also read the pamphlets which are published by the Boy Scouts of America and made available to everyone.

We looked over many boats. Some appeared as if they had barely survived the worst naval engagement in history, some were obviously a "handyman's delight," and some were in very nice condition. We picked out a nice 18-foot outboard setting on a trailer to study.

She had a high freeboard (the height of the top side from the water line to the deck) which meant that it wouldn't be easy for water to enter the boat if it got very rough; her engine ran smoothly when the salesman demonstrated it for me. He also pointed out the compass and the Danforth type anchor (one of the better types). There was enough line on the anchor to insure anchoring safely under most conditions (about 5 to 7 times the depth of water). While the salesman was showing me the first aid kit that came with the boat, my son was squeezing the PFDs (personal flotation devices, or life jackets) to see if any air escaped or they collapsed. He also checked to be sure there was a

type IV throwable PFD.

My wife insisted that we check the navigation lights before buying the boat. They worked properly and we were pleased to see that they had a fuse in the circuit. In fact, all of the electrical system had fuses, something we knew was a good idea. While checking each circuit, my son discovered the horn button. We jumped six feet when he pressed it. It worked well! He was also the first to discover the newest piece of equipment on the boat, a Coast Guard approved visual distress signal (VDS) kit. He explained to us that the kit contained a flare pistol and three meteor cartridges in addition to three flares. He was quick to point out that each had been Coast Guard approved, although we needed only one set or the other to meet the new Federal regulations. He thought having both, however, was a good safety practice. He told us there were other ways we



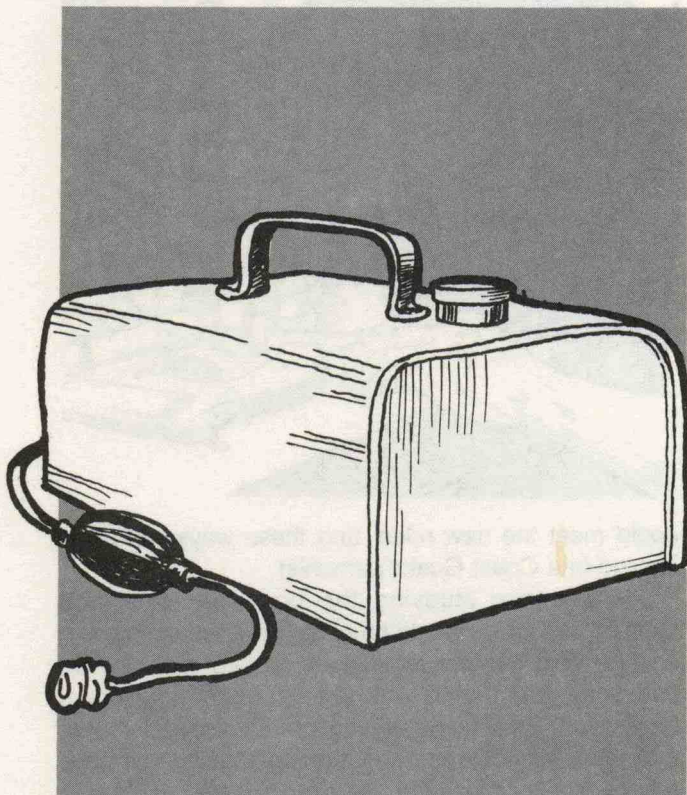
could meet the new rules, and these ways were discussed in a Coast Guard pamphlet.

As we were studying the boat, the salesman showed us that we would be getting two fire extinguishers. He said Federal regulations require only one on this boat, but that it was always better to have a backup unit as a safety precaution. He showed us that they were fully charged and their nozzles did not have any evidence of leakage. He even showed us how to

BECOMING A SAFE BOATING STATISTIC

lightly tap the bottoms of the extinguishers to be sure and loosen any of the powder inside and keep it from compacting at the bottom. My son told us we should do this every few months and not count on the bouncing of the boat on the water to do it.

After checking the fire extinguishers, I looked over the fuel system and the ventilation. The gas tanks were portable and rust free. I was pleased to see this because I knew that external rust on tanks most likely meant internal rust. Any rust was cause for concern since the metal would be weakened and a very dangerous leak could develop. If there had been a permanent fuel tank, I would have wanted to look at it to be sure it was rust free.



The next thing we checked was the trailer. I noticed that it seemed to be in good condition. There was no rust on the axles (a possible sign of future trouble), and the tires had no cracks on their sidewalls. I had read that this was really the place to look for bad spots on a trailer tire. Rarely does a trailer travel so many miles that tire treads wear out before improper inflation or age shows up on the sidewalls. I asked the salesman if he could demonstrate the trailer lighting system for us. We checked to see that the taillights and stop and turn signals all worked well. I was pleased that they did; since I knew that if the lights had not worked, a re-wiring of the trailer might be required. I wondered aloud if the trailer wheels had ever been submerged when the boat was launched or retrieved. The salesman borrowed a small jack from the repair shop and jacked the sides of the trailer up. I spun each wheel and listened for grinding sounds coming from the wheel bearings. The wheels spun easily and the bearings sounded OK. While we were checking the wheel bearings, my son pointed out the walkboard on the trailer. He was happy that he wouldn't have to balance himself on the end of the trailer when putting the boat on. He also noticed that the boat tiedown strap on the trailer was in good condition.

It seemed to us that we had checked the boat and trailer out pretty well. The time for a family conference had arrived. We began discussing our financial situation. Images of large fish catches and fun filled ski trips flashed before us. We unanimously agreed that boating could be safe and did not have to be expensive. We had received our tax refund and had been saving for our own boat for a year. Now was the time to buy. Our safe boating courses and study had helped us find exactly what we wanted.

We made the salesman an offer he said he couldn't refuse. With great pride, I signed on the bottom line, and my family and I became boat owners. We were sure our boat would pass a courtesy motorboat examination offered by the Coast Guard Auxiliary and would be awarded a CME decal. Once we had earned this decal, we could eagerly look forward to further applying our newly learned safe boating knowledge. We would practice being a *safe boating statistic*. ➤

Mr. Mueller has been active in safe boating activities for 9 years, teaching for both the Coast Guard Auxiliary and the United States Power Squadrons, Hampton Roads. He has completed advanced courses of study with the Auxiliary and Power Squadrons and does Search and Rescue Patrols for the Coast Guard.

VISUAL DISTRESS SIGNALS

Since the beginning of this year, the Coast Guard has required most boats to carry visual distress signals. The signals must be Coast Guard approved and legibly marked with an approval number or certification statement. You are affected if you operate your boat on coastal waters.

Coastal waters include the Great Lakes, the territorial seas of the United States, and the bays and sounds which empty into those waters. Rivers are not included unless the distance across the river is over 2 miles. In that case all portions of the river from the mouth to the point where it first narrows to 2 miles are considered coastal waters.

In certain cases, you may be exempt from the new requirement. Except when operating after sunset, you don't need visual distress signals for any of the following:

1. Competing in any organized marine parade, regatta, race, or similar event;
2. Operating a manually propelled boat; or
3. Operating a sailboat of completely open construction, not equipped with propulsion machinery, and under 26 feet in length.

In other than those cases, visual distress signals are required. If your boat is 16 feet or more in length, you must have signals for day and night. You can satisfy this requirement by getting day signals and night signals or by getting combination day-and-night signals. If your boat is less than 16 feet long, you don't need night signals unless you are operating after sunset.

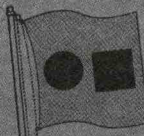
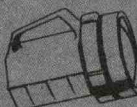
The approved visual distress signals are shown here. In addition to these, certain types of pyrotechnic devices which have not been approved will be considered acceptable until 1 July 1982, as long as they are serviceable. The following pyrotechnic devices are temporarily acceptable:

1. Pyrotechnic aerial red flares, either hand held or pistol projected, for day and night signal requirement;
2. Pyrotechnic hand held or floating orange smoke, for day only signal requirement;

3. Signal pistols for use with cartridges.

We don't recommend you purchase the non-approved pyrotechnic devices; but if you have them, you can continue to use them.

The final thing to remember is not to misuse visual distress signals. Coast Guard regulations prohibit the display of a visual distress signal unless there is immediate or potential danger to the persons on board. If you display it any other time, you'll be giving a false alarm.

Description	Accepted Use	Required	Approval Number
Red Hand Held Flare 	Day and Night	3	160.021
Red Aerial Flare 	Day and Night	3	160.066
Distress Flag Bright red-orange Background with Black Ball & Square 	Day only	1	160.072
Orange Smoke—either hand held or floating 	Day only	3	160.022 160.037 160.057
Distress Signal Light S—O—S 	Night only	1	161.013
Red Parachute Flares 	Day and Night	3	160.024 160.036

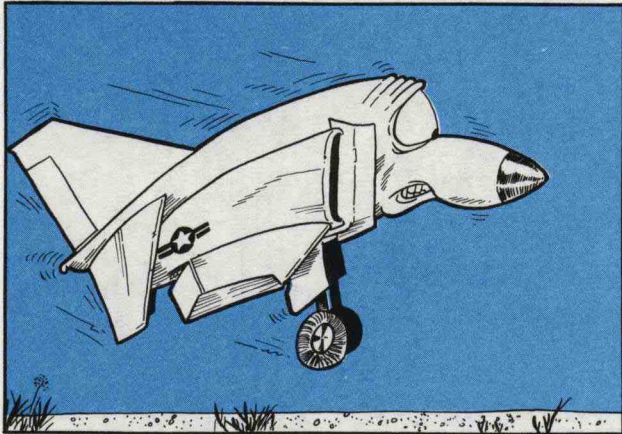
TIPS

Fools despise wisdom and instruction.

Proverbs 1: 7

ONCE MORE UNTO THE BREECH

The F-4 overseas was in an air combat tactics engagement when the pilot discovered that he couldn't pull the left throttle out of afterburner. Knowing how quickly he'd run out of fuel, he diverted to a nearby emergency field. He shut down the left engine with the master switch on ten mile final and continued to a successful landing.



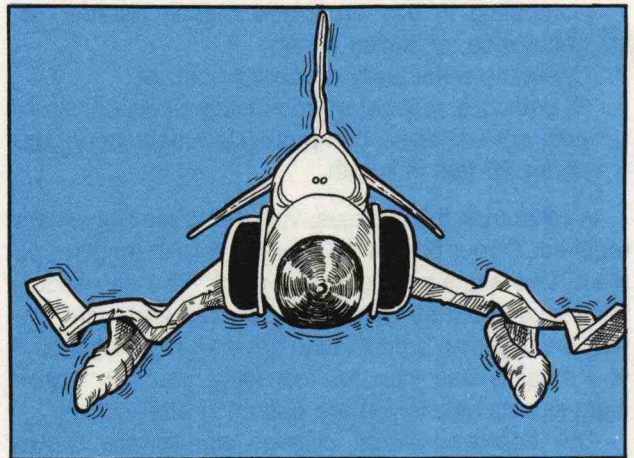
The maintenance inspectors found nothing wrong with the engine, but the breech cap from the left engine starter cartridge was loose in the engine bay. Apparently the breech cap jammed in the throttle linkage. Both the crew chief's checklist and the aircrew's checklist call for checking the breeches for security. The pilot had checked it by shaking it, but not by turning it. Turning it would have shown it to be unlocked.

Loose parts on an aircraft always seem to work their way into trouble.

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

WHAT THE HECK IS "ASYMMETRICAL"?

A recent incident pointed out a misunderstanding among some pilots about the term "asymmetrical (or unsymmetrical) load factors." It's been confused with uncoordinated flight, but the two don't mean the same thing. In symmetrical maneuvers, the load on both wings is equal. Anytime the aircraft is rolling, the load on the wing coming up is greater than on the wing going down; so a rolling maneuver is, by definition, asymmetrical. It doesn't matter whether the roll is caused by rudder or aileron, coordinated or uncoordinated.

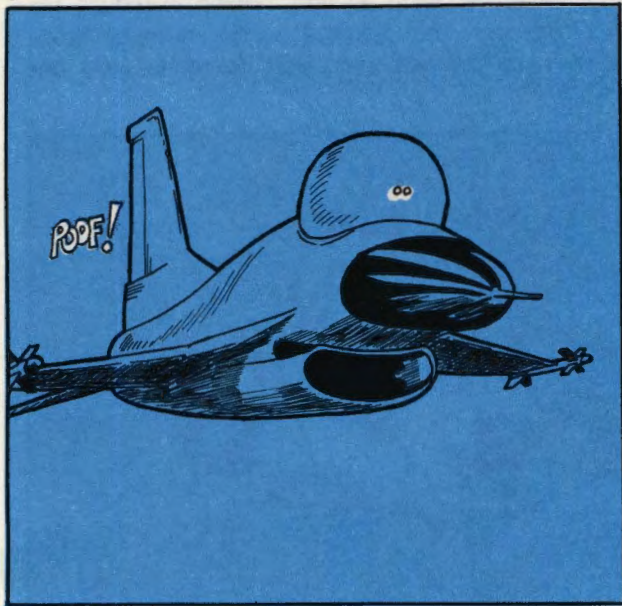


The classic example is a rolling pullout where the G-meter reads 5 G's, but the rising wing is pulling 7 G's. A more subtle example is the load restriction on the F-4's Royal Jet tank. Unsymmetrical maneuvers are restricted to 1 G when the tank is 75% or more full. That means you aren't supposed to roll into a bank with more than 1 G. Once the bank is set, you are symmetrical again; but you have to watch yourself so you don't apply the G while you're still rolling. It's a tough limit to fly within.

FRATRICIDE

The F-16 is showing some fuel transfer problems. Trapped fuel is insidious because it always seems to happen when you're too busy to notice; for instance, on the range. What's even worse is when your squadron mate has a fuel transfer problem, but doesn't write it up. Then he helps trap you.

A case like this occurred on a night surface attack mission. After air refueling their F-16B, the pilots flew a night low altitude navigation route and then entered the gunnery range. Prior to entering the range, they



checked the external wing tanks, which were feeding normally. The next time they checked was after completing their range work. They had 3,200 pounds of fuel trapped in the external tanks and only 1,300 pounds available in the fuselage. They declared emergency fuel, climbed, and flew a precautionary flameout landing pattern.

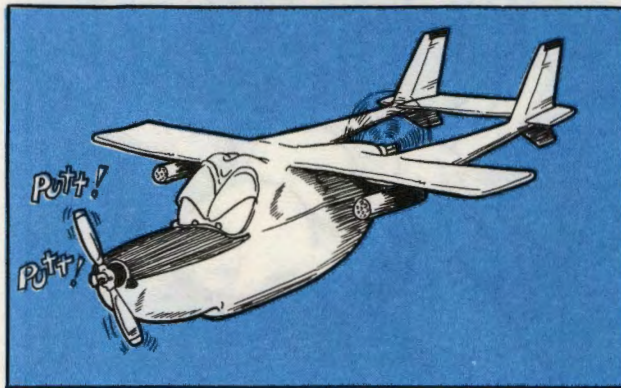
Granted, the pilots should have checked the fuel more carefully while they were on the range. The thing that bothers us is that on a flight before this one the pilots encountered tank feeding problems. They had fuel venting at 4½ G's and then uneven feeding from the wing tanks. The uneven feeding resulted in a fuselage fuel imbalance which had to be corrected with the engine feed switch. No writeup was made in the aircraft forms.

Lately, we've noticed quite a few failures to communicate. If a unit doesn't send in MDRs when they're needed, defective parts don't get identified until it's too late. If a pilot doesn't write up a problem, his squadron mates suffer the results. Let's quit doing each other in.

O-2 NEEDS A BOOST

Overseas, two O-2 pilots were going on a proficiency flight together. The crew chief asked them to burn down fuel in the left main tank because he had to defuel it after the flight. During the flight, the pilots ran both engines off of the left main tank to deplete it. A little while later, both engines quit. The left main tank was dry; the right main had 30 gallons. They switched both fuel selectors to the right main tank. The rear engine started back up immediately, but the front engine wouldn't start. They headed home while trying the engine restart and alternate engine restart procedures. No start. They contacted the supervisor of flying on the radio. He told them to make sure the mixture and prop levers were full forward and to use the boost pump. They again attempted to clear the fuel line using the left boost pump. The engine still wouldn't start. They ended up making a successful single engine landing.

There were two problems here: First, the pilots were unaware of the requirement to have a minimum of 6 gallons in each main tank for minimum fuel. Second, they didn't understand the aircraft boost pump system. Their first error caused fuel pump cavitation and air in the fuel lines of the front engine. Their lack of knowledge led them to use the wrong boost pump, so they couldn't cure the problem.

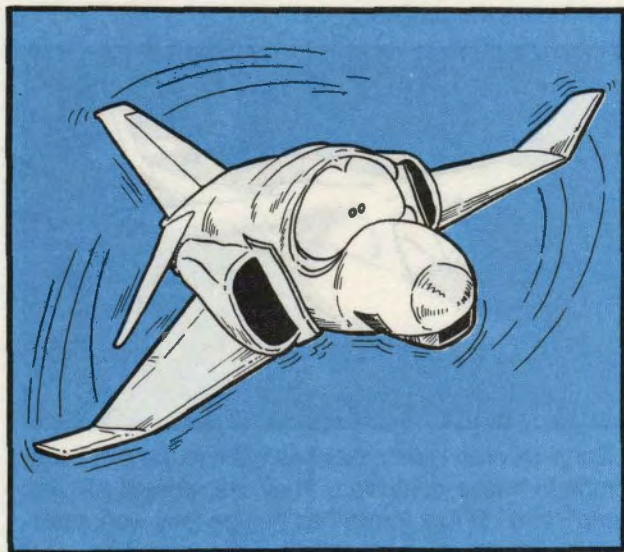


Some devilish labelmaker has marked the O-2 boost pumps to cause confusion. They are labeled "F Aux Pump" and "R Aux Pump" as though they were associated with those respective engines. They're not; they're in the left and right fuel tanks. So when they turned on the "F Aux Pump," all they did was motor the boost pump in the empty, deselected left tank. They never used the other boost pump which could have cleared the problem. The SOF didn't specify which boost pump when he talked to them. So they came back single-engine. They're lucky; some places where the O-2 flies it can't get home on a single engine.

TAC TIPS

CARRYING IT TOO FAR

The RF-4 was scheduled for some formation work with a student in the front seat and an instructor in the back. During the preflight checks after engine start, the aircrew noticed a problem with the autopilot check: after the AFCS was disengaged, the stick drove aft. For a few minutes after that, the autopilot wouldn't reengage. Some maintenance troops checked the system, but they couldn't duplicate the problem. So the aircrew took the airplane and continued the mission. At about 100 feet in the air, in close formation after takeoff, the aircraft suddenly pitched up and the stick drove aft. The pilot depressed the paddle switch and regained control. He declared an emergency and started a right turn. In the turn, the aircraft continued to roll right with the ailerons neutral. The pilot again hit the paddle



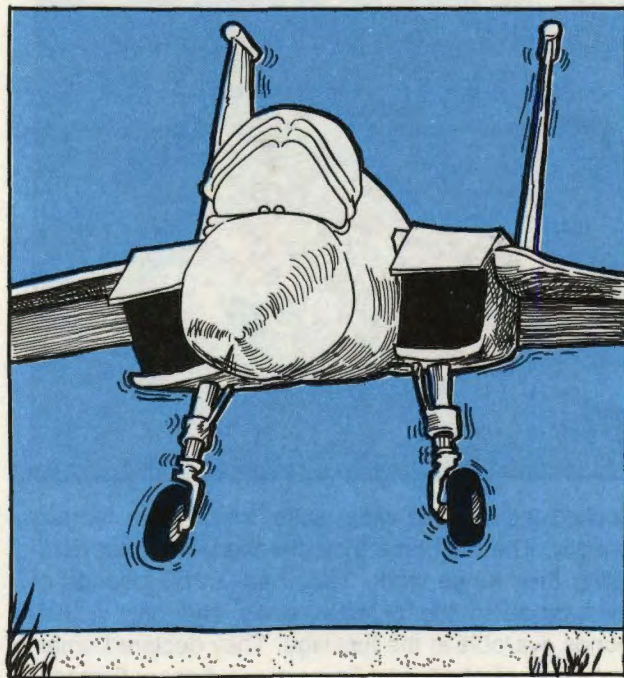
switch and then turned off the roll and pitch augmentation systems. They landed without any further problems.

When the airplane is nice enough to let us know something is wrong on preflight, we ought to listen to it, especially when it has anything to do with the flight controls. If you carry the problem, things are likely to get worse. Mechanical problems don't heal themselves.

REVERSE COMMAND

We've been carrying a discussion of aerodynamics and the region of reversed command in our letters section the last couple of months. We aren't trying to become physicists, but we can all profit from applying the lessons of aerodynamics. A landing incident overseas shows what can happen if we don't.

On his landing, the F-15 pilot flared high and floated. Leaving the throttles at idle thrust, he let the airplane settle toward the runway. At the last second, he increased his pitch attitude, hoping to reduce his rate of descent. That didn't work. He ended up dropping it in on the tailcones. Both tailcones were destroyed.



Why couldn't he slow his rate of descent by pulling back on the stick? Because he was operating in the region of reversed command. When he increased angle of attack, he increased induced drag. With the thrust at idle, the greater drag meant a larger deficiency of thrust, which meant an increased sink rate. The increased sink rate coupled with the excessive nose high pitch resulted in crunched tailcones when the gear struts bottomed out on touchdown. Ground effect, which reduces induced drag, probably kept the aircraft from hitting harder than it did.

Aerodynamics simply attempts to describe the laws of nature. There is a way of evading those laws: it's called a miracle. The rest of the time, the laws will be obeyed, whether we like the results or not.

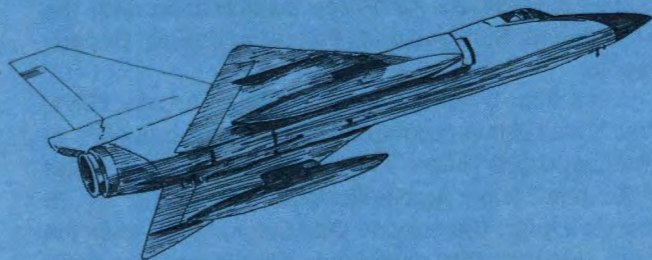
Aircrew of Distinction

On 6 January 1981, Lt Col Jerry W. Hover and Capt Eugene A. Lutz were flying an F-106B aircraft on a coordinated attack mission at the USAF Interceptor Weapons School. During a practice attack at 15,000 feet, the throttle stuck at 95 percent RPM. They declared an emergency, began their return to home field, and contacted the supervisor of flying for guidance.

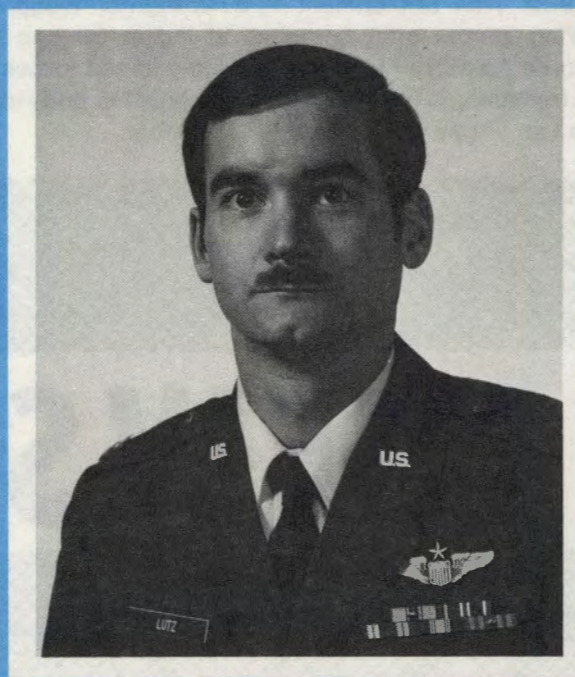
Using G-forces and speed brakes, they slowed enough to arrive over the airfield at a 15,000-foot high key with the landing gear extended. They spiraled with high G to 3,000 feet; however, they couldn't hold down the airspeed due to the high RPM. They tried a wide overhead pattern at normal pattern altitude while keeping constant G on the aircraft to avoid airspeed buildup. But, during the descending turn to final approach, the airspeed increased; they had to go around.

Knowing they had only enough fuel for one more pattern, the aircrew flew it lower and tighter, using more G. Precise control gave them an acceptable approach speed and they landed. Immediately after touchdown, both pilots yanked on the throttle simultaneously and forced it to idle. The aircraft successfully engaged the departure-end barrier, and the engine flamed out shortly afterwards.

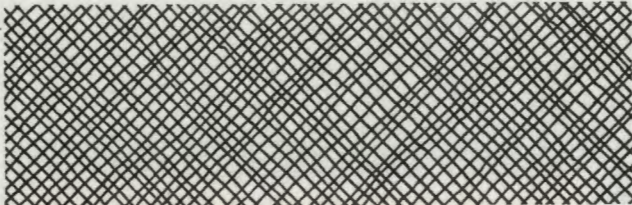
The superior expertise and professionalism displayed by Colonel Hover and Captain Lutz in executing this difficult recovery qualify them as the Tactical Air Command Aircrew of Distinction.



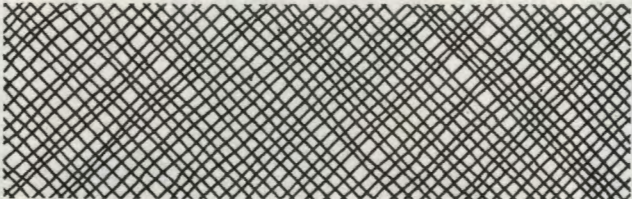
Lt Col Jerry W. Hover



Capt Eugene A. Lutz

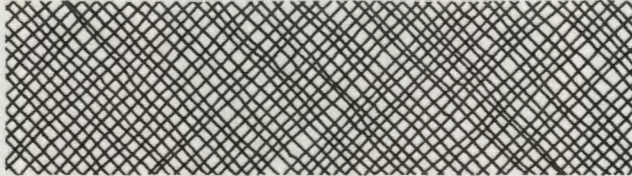


TAC's

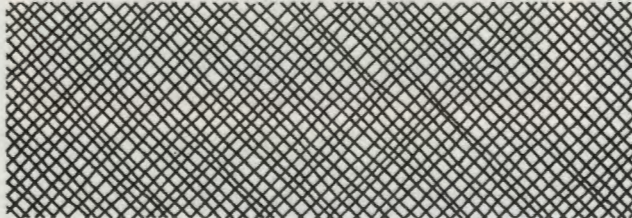


Rescue is normally MAC's business, specifically the Aerospace Rescue and Recovery Service (ARRS). But recently TAC and TAC-gained Reserve units have been pressed into the role, and they handled it superbly.

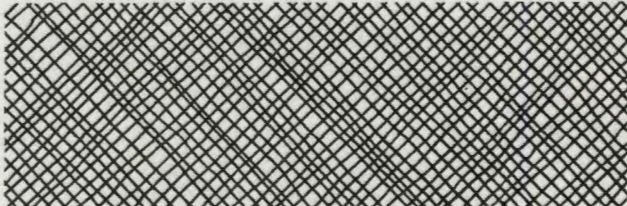
The 302d Special Operations Squadron, AF Reserve, and the 20th Special Operations Squadron, 1st Special Operations Wing, were deployed to Red Flag 81-1 at Nellis AFB, Nevada, in late November 1980. With Detachment 1, 57th Fighter Weapons Wing, permanently stationed at Indian Springs Air Force Auxiliary Field, Nevada, they joined forces in a tremendous rescue effort at the MGM Grand Hotel in Las Vegas on the 21st of November.



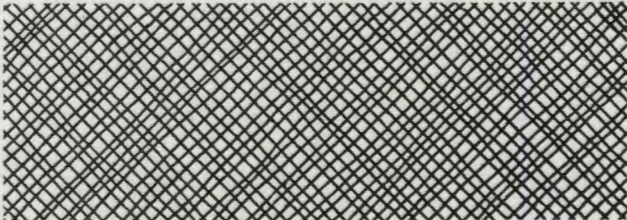
CREWS



The three units are equipped with helicopters: the 302 SOS has CH-3E "Jolly Green Giants"; the 20 SOS and Det 1 have UH-1N "Hueys." Throughout the day as the hotel burned, the Hueys landed on the roof and Jolly Green Giants ran hoist operations to the upper floor balconies. Together they rescued 79 people. Det 1 rescued 57. The 302d saved 15 from the balconies by lowering their flight engineers on hoists to reach the balconies. The 1 SOW provided crewmembers to augment the 302d and also helped rescue survivors from the roof using their Hueys. They also transported firemen and rescue workers with their equipment to and from the burning hotel.



RESCUE



Thanks to their efforts and the efforts of their maintenance and support crews, the catastrophe was nowhere near as bad as it could have been. Nellis and Indian Springs firefighters also pitched in to help fight the fires. The Nellis command post helped coordinate Air Force participation with the Las Vegas Metropolitan Police and Fire Departments.

Less than 3 months later, on 10 February 1981, Det 1 was again scrambled to help in a hotel fire at the Las Vegas Hilton. They were notified at home at 8:25 p.m. Their first helicopter was in the air 25 minutes later; the second was five minutes after the first. This time they saved nine people from the fire.

TAC is proud of these crewmembers who risked their lives flying to save others in the two fires.

302d Special Operations Squadron (AFRES)

Luke Air Force Base, AZ 85309

MSgt James Connett
Capt David Ellis
TSgt Jerry Fletcher
TSgt James Hodges
TSgt Daniel Jaramillo
Maj Lawrence Lybarger
Capt Michael Martin
Maj William Ponder
MSgt William Reynolds
MSgt Everardo Reynoso
Capt Lester Smith
Lt Col Bruce Wood



**Det 1, 57th Fighter Weapons Wing
Indian Springs Air Force Auxiliary Field, NV**

1Lt Bob Antoniazzi
SSgt Tim Barr
SrA Steve Bisso
SrA Larry Clarke
TSgt Mike Codini
1Lt Mark Comer
Maj Larry Doege
2Lt Brian English
2Lt Bob Ferguson
2Lt Brian Galbreath
Capt Scott Holman
2Lt Guillermo Jimenez
Capt Joseph Kruppa, Jr.
AIC Stuart Lambert
1Lt Quinn Nixon
2Lt Tom Palmer
Sgt Bob Rogers
Capt Doug Stewart



20th Special Operations Squadron

Hurlburt Field, FL

SSgt Edgardo Acha
SSgt Cordis Blackwood
1Lt Robert Donnelly
MSgt Jesse Herrell
Maj Warren Hubbard
2Lt Richard Kianka
Maj Burton McKenzie, Jr.
1Lt James Mehegan
MSgt Richard Mustered
Capt Howard Stevens
Lt Col William Takacs
1Lt Frank Wallace
SMSgt Floyd Watson, Jr.
1Lt Dyke Whitbeck



chock talk

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

THE MISSING SPACER

An F-16 was taxiing out for takeoff and was making its second turn when the wheel came off the left main landing gear. The pilot decided it would take too much power to taxi without a wheel, so he shut down.

The day before, the wheel had been replaced; but the anti-rotation spacer was left off. The tire was changed by a qualified 5-level crew chief, and it was signed off by a 7-level supervisor. The supervisor used a local inspection guide that did not include a check of the spacer. Without a spacer, the axle nut backed off as the wheel turned.

Tech orders and inspection guides, especially for our newer aircraft, are bound to have some unclear areas and some oversights. If we notice a problem, let's get the tech data updated; and then let's follow it.



PENCIL-WHIPPED

The F-4 put down the gear at 10 miles on final approach. The utility hydraulic system failed and the nose gear indicated unsafe. The aircrew landed it safely. Examination of the nose gear showed that it had over-extended because the nose gear actuator had broken. The only thing that kept the gear from collapsing was the sheet metal bulkhead.

The actuator was analyzed and an interesting fact turned up: the actuator was supposed to be replaced in 1976. A 1976 TCTO predicted exactly this type of failure and called for its replacement. At that time, the airplane was in another command. The TCTO was signed off as accomplished but the work was never done. The obsolete actuator remained on the nose gear until it failed.

We don't know why it was "pencil-whipped" and never done; we do know it almost cost us an airplane.

HOW NOT TO DO IT

Given the job of an F-16 engine run, the crew chief got help from a radar/INS specialist. The specialist had received the proper training and had been on the headset with the pilot for two previous aircraft launches. The crew chief did a very quick walkaround, checked the cockpits, and told his assistant to remove the ladder. After checking in on the intercom with the specialist, the crew chief started the engine. Shortly afterwards, the assistant saw that the intake cover was still on. He told the crew chief who shut down the engine. They did a belated intake check and found part of the cover on the engine face. Luckily, the engine suffered no damage.

"First, I'm going to show you how *not* to do it. . . ."

TUNNEL VISION

Just before midnight, the tow team hauled an F-106 out to the engine trim pad. While their attention was riveted on maneuvering the aircraft around the tie down cables on the trim pad, the pitot boom hit a ground power unit.

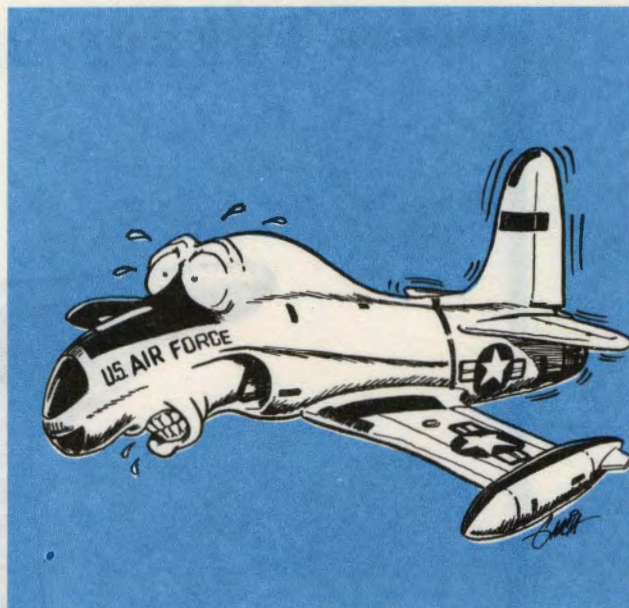
Tunnel vision is concentrating on one thing to the exclusion of everything else. Most times, everything else proves to have deserved some attention.

TOOLS AND ENGINES

As the pilot was starting engines on the F-106 for the second sortie of the day, the crew chief heard unusual noises and saw sparks coming out of the tailpipe. The crew chief had the pilot shut down. It turned out that the engine had tried to eat a low pressure air valve used to inflate the tires.

The crew chief had been carrying the 6-inch air valve in the upper pocket of his jacket while he did his through-flight inspection. He leaned into the engine intake to look closely at a crack in the vari-ramp system. The valve fell into the intake and went unnoticed during the rest of his check and the pilot's preflight. Then it showed up so rudely on the engine start.

Tools can be a problem. That's why we should account for them after each job we do. And we ought to empty our pockets before we work around the intake. Saves tools and engines.



T-BIRD CORROSION

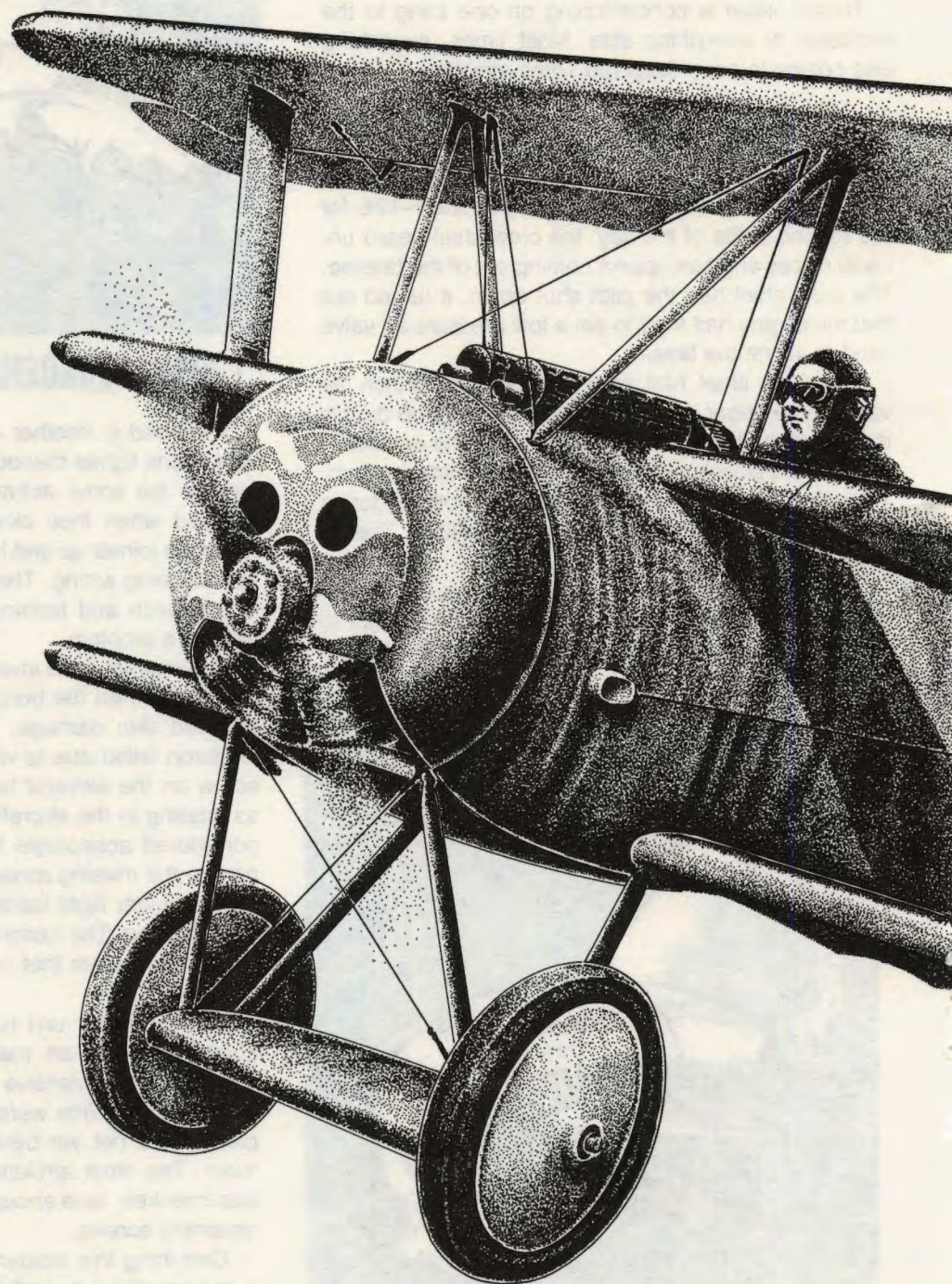
A T-bird in another command was out flying one-versus-one fighter maneuvers when the pilot and his instructor felt some airframe vibrations. The vibrations stopped when they slowed below 260 knots. Their wingman joined up and looked them over, but couldn't see anything wrong. They decided to make a straight-in approach and landing. They got it on the ground without a problem.

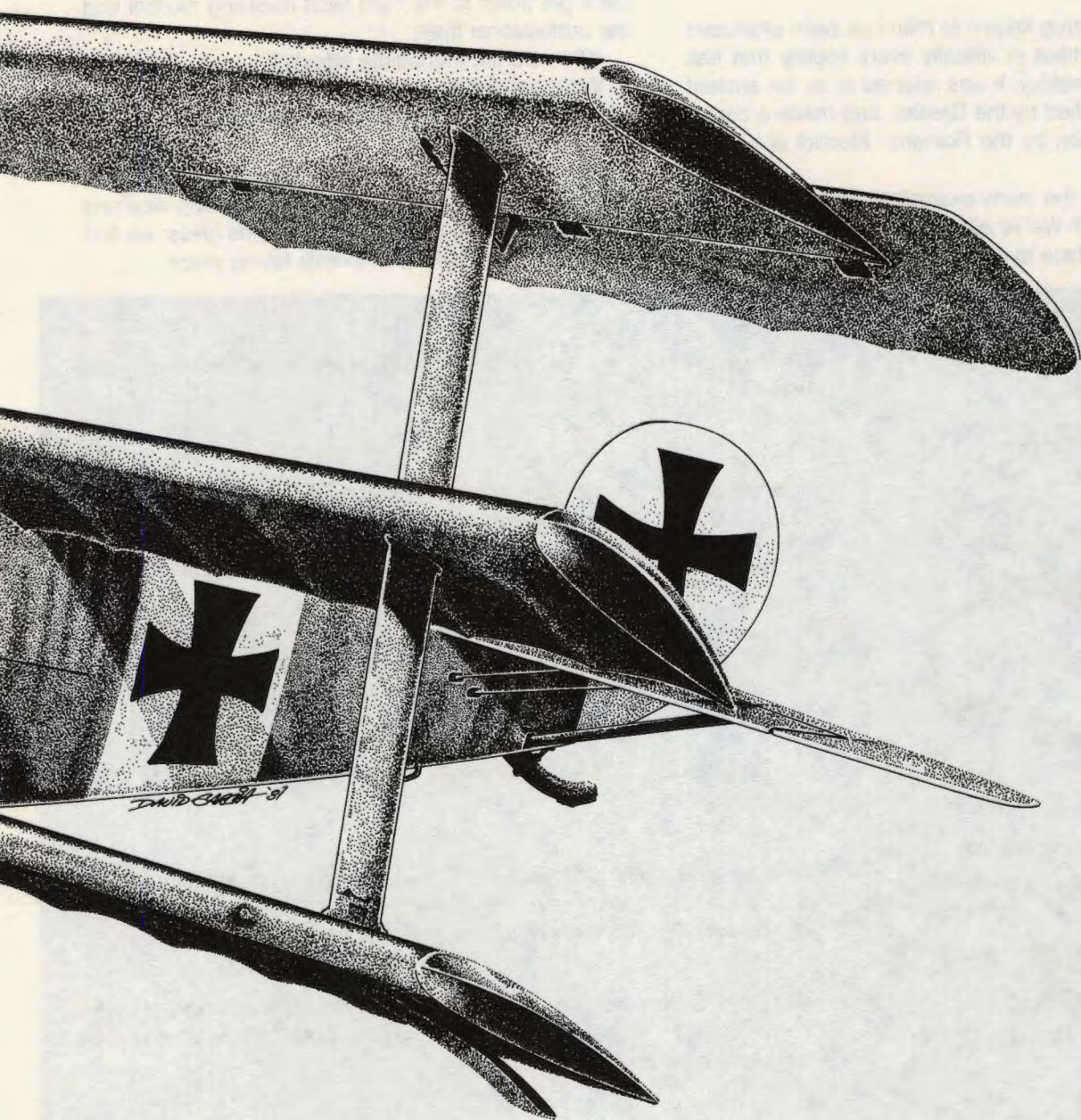
The maintenance investigators found a cracked longeron beam on the horizontal stabilizer with some associated skin damage. The investigators figured the longeron failed due to vibrations of the left elevator. A screw on the elevator hinge assembly was written up as missing in the aircraft forms. The discrepancy was considered acceptable for flight. But the two screws next to the missing screw had been weakened by corrosion. Under flight loads up to 6½ G's, the other two screws failed. The loosened hinge permitted the flexing in the left elevator that caused the failure of the longeron beam.

This particular unit had begun a special corrosion control problem on their T-birds. Each aircraft was scheduled for intensive inspection and repair, since most of the T-birds were about 23 years old. Two airplanes had not yet been inspected; this was one of them. The other airplane that hadn't been inspected was checked; sure enough, it had corrosion in its hinge assembly screws.

One thing this incident proves: this wing's concern over corrosion was well deserved. Their program of inspections was just one step behind Murphy.

Fokker Dr-1





From Bottle To Throttle

By Capt Nathaniel E. Villaire
Physiological Training Officer
USAF Regional Hospital, Langley AFB, VA

The oldest drug known to man has been produced in various quantities in virtually every society that has left a recorded history. It was referred to by the ancient Egyptians, glorified by the Greeks, and made a center of social attention by the Romans. Alcohol is here to stay.

Why belabor the many examples of intoxication evident around us? We've all seen cases ranging from a slightly flushed face to a staggering, slobbering stupor.

Let's get down to the hard facts involving alcohol and the professional flyer:

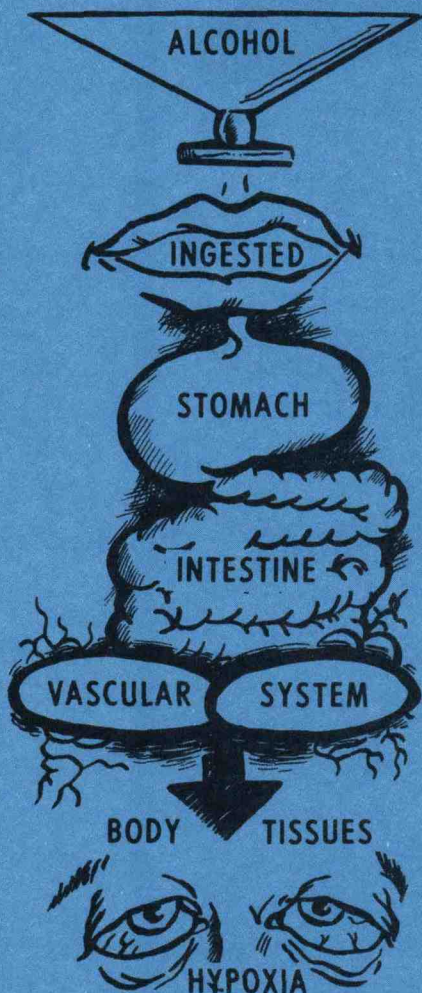
What are the immediate effects?

What are the long range effects?

What is the solution to the problem?

Is the danger real?

The immediate effects? Let's take a look at that jock in the corner over there. Yeah, the one rolling dice and taking his "on the rocks." As he tilts the glass, we find the following sequence of events taking place:



One ounce of scotch, gin, white lightning, or anything else he can find that has a kick.

Produces oral, throat, and stomach fire, which he pronounces as "mild" or "smooth." Eyes may water slightly.

Little alcohol is absorbed here. Surprised? Eating proteins (steaks, eggs, etc.) inhibits passage to the intestine. Protein must be partly digested first. Fizzle drinks (soda mix, beer, champagne, etc.) speed the passage to the intestine.

WHOP!! Alcohol is absorbed rapidly, constantly, and completely. Any questions?

That's blood and blood vessels to you and me. This system distributes the alcohol fairly uniformly except in the brain and spinal fluid where the concentration is slower in *rising* and *falling*.

Muscles, brain, and virtually every other part of the anatomy take on some alcohol. The substance interferes with the uptake and use of oxygen by the cells.

Hey, there's a familiar word! Must be a printing error. Isn't this piece about alcohol? Read on.

Would you believe collapse right here on terra firma from our old enemy hypoxia? Well, maybe not from 1 ounce, but have you ever seen a dice-rolling jock stop with one drink? (OK, so you know an exception.) In any case, hypoxia is the end result. In this case, the *tissues* of the body have been *poisoned* by alcohol, which *deprives* them of *oxygen*. Translating all this into medical jargon produces:

Histo (tissue) + toxic (poison) = Histotoxic

Hypo (low) + oxia (oxygen) = Hypoxia

That's the fancy way of telling a guy he's smashed: he has histotoxic hypoxia.

Do you remember some typical hypoxia symptoms from your last altitude chamber ride? Does "dizziness, tunnel vision, hot and cold sensations, personality changes, and poor coordination" sound familiar? Just as your ability to fly effectively is hampered or destroyed by hypoxia at altitude, your ability to maneuver one foot in front of the other while on the ground under the influence of histotoxic hypoxia is similarly affected. Need I say more?

Unfortunately, the similarity between altitude hypoxia and histotoxic hypoxia ends here. You can treat altitude hypoxia successfully with 100 percent oxygen, but it won't help the histotoxic type. There are few, if any, aftereffects from the first; there is a miserable "I've got to die to get better!" feeling from the second. One allows you to continue working after treatment with oxygen; the other allows you to have a severe headache, bloodshot eyes, nausea, and poor coordination for hours and hours. You may not be a competent flyer for a long time after a bout with the bottle.

There is an Air Force saying, "Twelve hours from bottle to throttle." So you must be OK after twelve hours, right?

Maybe.

Here is what happens to the alcohol: It is transported through the liver where it is slowly detoxified. Detoxification averages about one-third ounce of pure alcohol per hour for a normal individual; that translates to about an ounce every 3 hours. As a professional, you should remember that figure. The amount of pure alcohol in liquor is shown by the proof; 100 proof is 50 percent alcohol. An ounce shot of 100-proof whiskey contains one-half ounce of alcohol. A martini made with two shots of 94-proof gin contains almost a full ounce (.94 oz) of alcohol. How about some examples?

Colonel J. Daniel drinks 2 ounces of alcohol (four whiskey-and-waters), and since it takes 3 hours to detoxify each ounce, he has 6 hours ($2 \times 3 = 6$) before alcohol elimination. The colonel will comply with the 12 hour edict, so he will be in good shape to fly.

Major Beefeater drinks 5 ounces of alcohol (five martinis). His equation is $5 \times 3 = 15$ hours. The major shouldn't even be around an airplane for 15 hours! Notice that the major can comply with the old adage and still bust his tail because he is under the influence.

Is the danger real? You know it! You know of cases when a flight shouldn't have taken place, don't you? We've seen gents bending the elbow at the bar when everyone knew they would be in the air by dawn, right?

Professionals do not compromise excellence. You are judged as a professional by your training, discipline, and deeds—not directives. Know why there are rules. Know the limitations of rules. Beware of "Twelve hours from bottle to throttle." ➤



Editor's Note: Captain (now Lieutenant Colonel) Villaire wrote this article for TAC ATTACK in 1972. He is presently deputy commander of the 1913th Communications Group, Langley AFB, VA. Since flyers are still drinking alcohol, his message remains timely.



MISPLACED ATTENTION AND MISSING BELTS

Two airmen were riding in a car together when the driver overtook and passed another car. He watched the car he had passed in the rear view mirror as he pulled back into his lane of traffic. He failed to see a parked flatbed truck extending into his lane. The car struck the rear of the parked truck. Both airmen were seriously injured.

No drugs or alcohol were involved. The driver was not speeding. It was just a moment of misplaced attention that caused the mishap. The injuries were worsened because neither airman wore his seat belt. Otherwise, they could probably have walked away from this one.

A CUP OF HEMLOCK

Most of us have heard the story of Socrates and the cup of hemlock. Hemlock was commonly used in

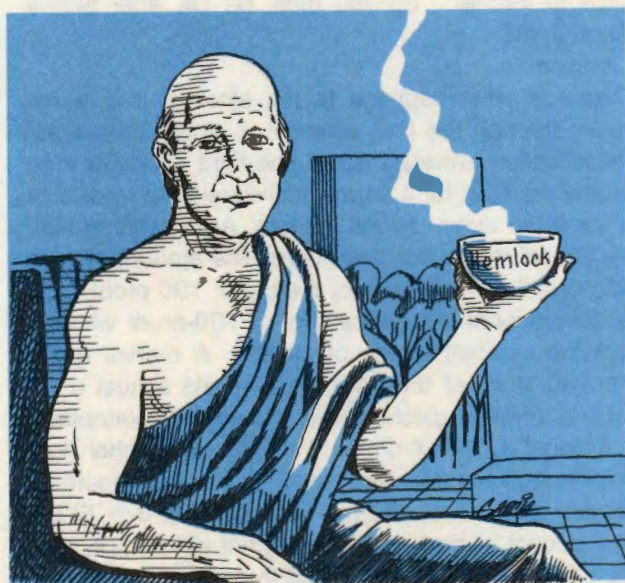
ancient Greece to kill condemned prisoners. What we often overlook is that hemlock is simply a plant and a fairly common one. Your garden may very well contain plants which are just as deadly as hemlock.

Enjoy azaleas? How about rhododendrons and laurels? They are all poisonous. Eating any part of them can produce nausea and vomiting, depression, difficulty in breathing, coma, and death. The green berries on lantana can also be fatal, and just a few daphne berries can kill a child.

Some of the plants we eat still have poisonous parts. Rhubarb leaves, for instance, can cause convulsions and coma, followed rapidly by death. And those beautiful cherry trees—their twigs and foliage contain a compound that releases cyanide when eaten. Even acorns are poisonous, although it takes large amounts to affect you.

Is no place safe? The plants in your own house can be dangerous. Elephant ear causes intense burning and irritation of the mouth and tongue. A victim can suffocate if the base of the tongue swells enough to block the air passage in the throat. Rosary pea and castor beans are lethal: a single rosary pea seed has caused death. At Christmas, many of us bring in more poisonous plants, mistletoe and poinsettia. Children and adults have died from eating mistletoe berries, and one leaf of poinsettia can kill a child.

We don't have to get out the Agent Orange and attack the neighborhood to solve the problem. We just have to be careful. Our children, especially toddlers, need supervision. We should warn the older children that all parts of plants not normally eaten should be considered poisonous. Let's not join Socrates in his cup of hemlock.



OUT OF BALANCE

This NCO was a loyal, hard working man. Everyone who worked with him thought he was exceptionally safety conscious. Then, one night as he was driving toward home, he drifted across the centerline stripe. He tried to correct back, but it was too late: his small car was cut in two by an oncoming car. He never made it home.

For at least 2 months, the NCO had been working overtime regularly at the office. On top of that, at times he would carry work home. This day, he had worked until 2000 hours in place of a subordinate. He went home for a couple of hours, but then decided to go out for a drink. He needed to relax.

The investigators checked his blood alcohol level after the collision; it was .10. The alcohol combined with his fatigue made him incapable of driving. He might still have survived if he had worn a seat belt. Maybe he was too tired to bother.

Have you been pushing yourself that hard? Do you get so wound up with work that you have to take a drink to relax? Maybe you better review your priorities in life—before it's over.

SUMMER BUMMER

**By Sgt Dale J. Nusbaum
507 TAIRCW/SE**

Harry and George decided to celebrate the coming of summer at Harry's cabin. This was the first time that George had been to the mountains, and he wasn't familiar with outdoor life.

George, our gusto grabbing friend, arose at 8:30 with bleary eyes and ruffled tail; he had endured a rough night. He put breakfast on the table—a six-pack of beer.

"Rise and shine, Harry; breakfast's on the table."

Harry questioned, "Don't you think you should eat something first?"

George snapped back, "Naw, this is our week for fun in the sun."

They sat at the table—Harry eating and George drinking. By 10:00, George had polished off the six-pack. While Harry was shaving, George bellowed, "I'm going to take a swim." Harry cautioned him that he should not swim alone, especially in his condition. Harry had noticed that the lake level was a little low, the water was freezing cold, and the shoreline had changed somewhat over the winter. But good old

George with his reckless abandon slurred back, "No sweat, I ain't gonna drown." Off he went, not heeding Harry's warnings.

"Geronimo!" screeched George as he ran down the hill towards the lake.

Harry heard the yell and looked out the window and thought, "There he goes, diving in head first before he checks anything." Harry turned away from the window and shook his head, "I better go down there before he hurts himself, or worse." As Harry strolled out the door he heard a splash. Then it happened, the sound that he had anticipated: "Help! Help!" He saw George splashing around with a bloody gash on his forehead.

Harry ran down the hill and eased himself into the water just as George went down for the third time. Harry didn't panic; he pulled George out of the water and started CPR. He got George breathing again, then covered him with blankets until the ambulance arrived. The medical team took poor George to the hospital for a three week "vacation."

As the paramedic and Harry were standing by the shore, Harry sighed, "I told him not to drink because he was still hungover from last night. I also told him to see how deep the water was and not to swim alone, but, as usual, his mind was made up to take a swim."

"Yep," replied the paramedic, "if he had listened to you, he wouldn't be in this fix. Drinking on an empty stomach and swimming in frigid and unfamiliar water will do it every time."

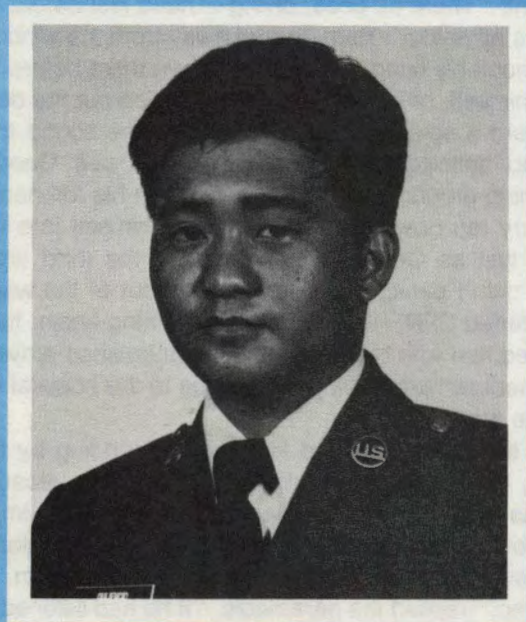
Well, George was right when he said, "No sweat, I ain't gonna drown."





TACTICAL AIR COMMAND

Crew Chief Safety Award



SrA Noli B. Quijencio

SrA Noli B. Quijencio, 523d Aircraft Maintenance Unit, 27th Aircraft Generation Squadron, 27th Tactical Fighter Wing, Cannon Air Force Base, New Mexico, is this month's recipient of the Tactical Air Command Crew Chief Safety Award. Airman Quijencio not only keeps his aircraft in top condition; but, in the same spirit of pride and dedication, he helps other crew chiefs with their aircraft. He is alert in preventing mishaps; recently he stopped another airman from using a fire extinguisher as a maintenance stand. Airman Quijencio reminded him to get the proper equipment for the job. On another occasion, Airman Quijencio spotted an M32-60 unit leaking fuel from its engine. The unit was being used by another person working on an aircraft. Airman Quijencio rushed over and shut down the unit, then had it removed from the flightline for repair. His quick reaction prevented damage to the unit and a possibly disastrous fire. Airman Quijencio has displayed professionalism that qualifies him for the TAC Crew Chief Safety Award.

Individual Safety Award



MSgt Joseph J. Preuss

MSgt Joseph J. Preuss, 33d Component Repair Squadron, 33d Tactical Fighter Wing, Eglin Air Force Base, Florida, is this month's recipient of the Tactical Air Command Individual Safety Award. Although he had been just recently assigned to the structural repair shop, Sergeant Preuss asserted his authority in opposing an incorrect repair procedure for an F-15 vari-ramp. In his judgment, the proposed procedure would have caused an unacceptable foreign object damage (FOD) hazard. Sergeant Preuss researched the issue with depot engineers, who agreed that the entire outboard side of the vari-ramp should be removed to do the repair correctly. By using the more involved correct procedure, he not only prevented FOD damage from this repair, but revealed FOD hazards from loose J-bolts and rivets on scab patches from previous repairs. Sergeant Preuss's refusal to do things the easy but wrong way may have prevented serious engine damage, loss of the aircraft, and, possibly, loss of life. He is well deserving of the TAC Individual Safety Award.

SAFETY AWARDS

Ground Safety Award of the Quarter



SSgt John K. Wilson

SSgt John K. Wilson, 712th Air Support Operations Center Squadron, 602d Tactical Air Control Wing, on temporary duty with the 67th Tactical Reconnaissance Wing, Bergstrom Air Force Base, Texas, is the recipient of the Tactical Air Command Ground Safety Award for the first quarter of 1981. Sergeant Wilson volunteered for temporary duty with the 67th TRW to take on the task of developing a motorcycle safety training course for Bergstrom AFB. He almost singlehandedly developed an excellent course. He procured the equipment, including 12 motorcycles, and personally constructed 2 skill range courses. He designed and built electronic equipment to provide multimedia presentations in the course. Sergeant Wilson obtained a building to store the motorcycles and then painted the building to match the base beautification scheme. Overall, he spent endless hours both on and off duty to insure the success of the program. He is well deserving of the Tactical Air Command Ground Safety Award of the Quarter.

Weapons Safety Award of the Quarter



Sgt Dana P. Edmonds

Sgt Dana P. Edmonds, 35th Aircraft Generation Squadron, 35th Tactical Fighter Wing, George Air Force Base, California, is the recipient of the Tactical Air Command Weapons Safety Award for the first quarter of 1981. Sergeant Edmonds, a member of the loading standardization crew, is an outstanding professional with a unique knowledge of safety requirements. Recently, he discovered a hazardous error in technical data that could have resulted in a major explosive accident. A change to a technical order for the AGM-78 missile launcher specified a stray voltage check on the wrong pins. Sergeant Edmonds submitted an AFTO Form 22, and the dangerous error was corrected worldwide within three days. Sergeant Edmonds did further research on the stray voltage checks and found an additional serious deficiency in the special test cable and the test instrument used. Again, an AFTO Form 22 was submitted, and the deficiency was corrected. Sergeant Edmonds concern for safety and his professional skill have earned him the Tactical Air Command Weapons Safety Award of the Quarter.

SPATIAL

disorder

By Thomas L. Freeman
Aerospace Physiologist
1099th PTF

Disorientation

Spatial disorientation, its explanation is simple: not knowing where you are in space. The problem however is complex. Allow me to relate a few observations.

Vertigo, or spatial disorientation as it is called, is an individual phenomenon. Most pilots have encountered spatial disorientation in their careers, and each case varies in severity. Disorientation occurs most frequently when a pilot loses his visual references. Then the pilot may try to correct the problem by "flying by the seat of the pants" rather than relying on the instruments.

These "seat of the pants" feelings originate in the vestibular apparatus and the semicircular canals. The vestibular apparatus is totally useless in space and will transmit false information to the pilot. Take away our visual references, and we are suddenly made aware of just how much we rely on those miniature gyros.

Recent accidents reinforce the tragic results of spatial disorientation, and especially the hazards encountered during formation flying. Flying single-ship, a pilot may use many methods in combating vertigo; a wealth of information is given in AFR 51-37. Flying as a wingman, in weather, you are increasingly susceptible to this phenomenon; but you're limited in what you can do to "checkmate" the problem.

Let's look at the limitations. Believing your instruments is tough when you feel as if you're falling off the wing. A quick glance at your instruments may induce vertigo by the sudden movement of your head. Pilots in general consider themselves able to handle any situation. The macho image and pride can prevent the pilot from admitting he has a problem, and so the pilot does not make his problem known. Only when the wingman admits to himself that he is disoriented can the problem be corrected.

Should vertigo increase to a level compromising flight safety, the wingman has a responsibility to tell his leader and request help. The flight leader is charged with the responsibility for the safety of the flight members; however, if the flight leader doesn't know of a problem, it makes the job a lot tougher. Flight leaders must try to recognize spatial disorientation before it becomes a hazard. The most pronounced indications are

unsteady formation and radio communication indicating apprehensiveness. If these signs are observed, it would be appropriate to ask the wingman if he is experiencing any difficulty, especially if the flight is in conditions conducive to the vertigo trap.

The flight leader, once he suspects his wingman is experiencing vertigo, has some options. The first decision is whether the wingman would be better off on the wing or on a separate clearance. Before informing the victim to go "lost wingman," you must consider this: while experiencing vertigo, the pilot may not be able to properly execute the procedure. In severe cases, disorientation can cause total incapacitation, so the pilot is not able to comprehend the information he has received. For example, if a severe coriolis effect (see AFM 51-37) occurs during a sudden head movement, it could be impossible to read a rapidly descending altimeter.

Should the wingman remain in formation, reestablishing straight-and-level, unaccelerated flight would be the leader's first step. Changing the lead may allow him to realign his personal gyros. Occasionally, due to severe weather, it may be impossible to change the lead. Verbal reassurance by describing the flight parameters can help. Many times just a few reassuring words are all the affected pilot needs to hang on until he breaks out of the weather or he overcomes the vertigo.

To help limit your own susceptibility to spatial disorientation, avoid the consumption of any beverage that contains quinine. Quinine has been identified as a contributor to spatial disorientation. The quinine contained in some beverages has an affinity for and can be toxic to the tissues of the inner ear and the vestibular apparatus where it will accumulate. Some of the symptoms of quinine toxicity are ringing in the ears, slight to moderate loss of hearing, decreased night vision, and vertigo. The USAF Surgeon General has determined that aircrews should avoid the consumption of any beverage containing quinine (tonic water) prior to missions.

In short, spatial disorientation is an extremely complex problem. I haven't tried to give you any pat answers because I have not been able to find any absolute solutions to spatial disorientation. I hope I've jogged your thought process a little. You need to know the effects, causes, and corrective actions that are available during disorientation. Flight leaders must thoroughly brief their wingmen on the proper procedures to follow should they become disoriented. Let's combat this killer and eliminate the wasteful losses of aircraft and the tragic losses of life. ➤

life support tip:

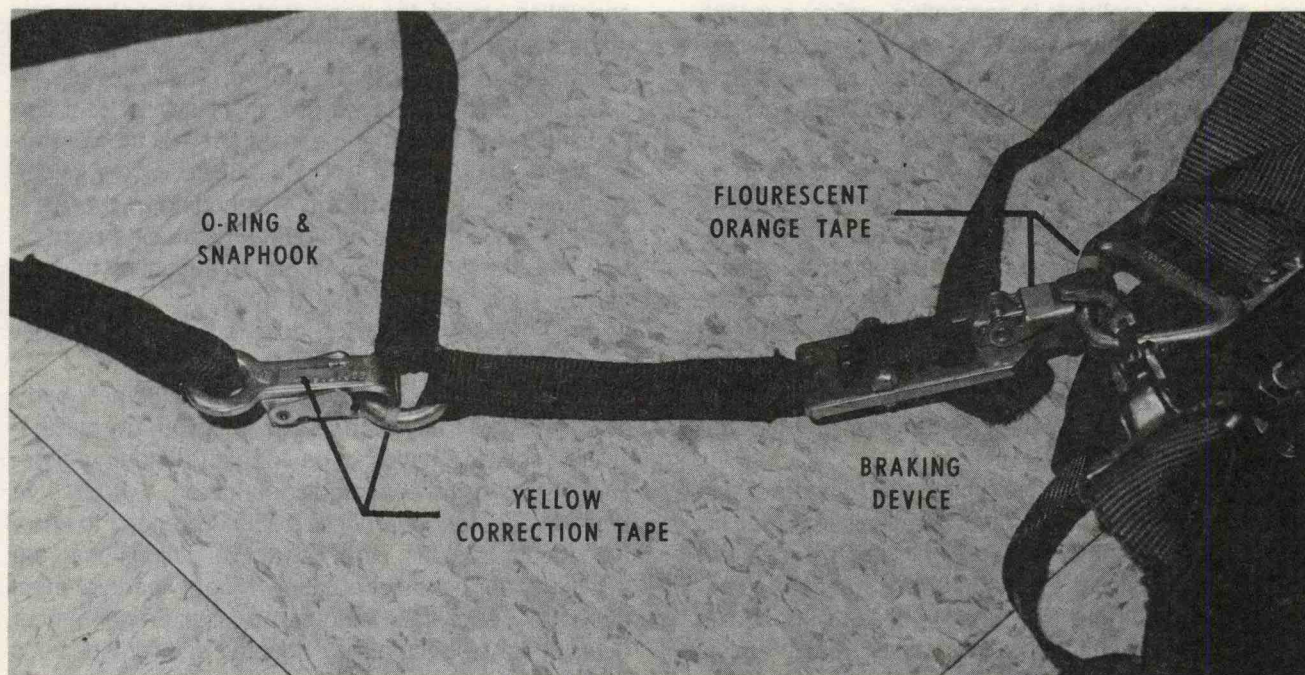
Dear Editor,

Our unit (RF-4C equipped) has had some difficulty with aircrews remembering proper hookup procedures for the PCU 21/P lowering device. In order to help the aircrews remember what snaps onto what for proper operation of the device, our Life Support troops came up with an idea that I think is worth sharing with the field. To make it come out right, it's simply "color matches color and the color always faces you." Here's how it works. The torso harness U-Ring, braking device hook, O-Ring, and snaphook are color coded. Place a narrow strip of fluorescent orange tape around the top of the torso harness U-Ring and another strip (same color) on the front portion of the braking device hook. Then cut a strip of typing correction tape, dye it yellow with a felt tip marker, and place 2 or more strips around the O-Ring and a 1-inch strip on the back side of the snaphook.

Then cut a strip of typing correction tape, dye it yellow with a felt tip marker, and place 2 or more strips around the O-Ring and a 1-inch strip on the back side of the snaphook.

This modification is simple and inexpensive. Since this modification to the torso harness and lowering device, our crews have had no trouble with the hookup. The only emphasis that has to be made is the proper routing of the snaphook through the risers before connecting it to the O-Ring.

Dale F. Vavra, Major, Minnesota ANG
Chief of Safety, 148th TRG



It's Mowing Time, Again



After fertilizing, watering, and otherwise nurturing our lawns, we are now faced with cutting down the monster we've created. Together we push more than 12 million power mowers in this country. Unfortunately, we also suffer 150,000 injuries each year from power mowers. Mostly the injuries are caused by hurled objects, direct contact with the blade, and fire.

A typical rotary mower's blade tip reaches a speed of 200 miles per hour. Obviously, it can make short work out of a hand or foot. What we sometimes forget is its ability to pick up stones and pieces of metal and hurl them out the discharge chute. An unwary bystander, often a child, becomes the victim.

Rotary mowers should have metal guards over the discharge chutes. On many models, the guard is bolted on and must be removed to use the grass catcher bag. If you then use it without the bag, you have no protection. Some more recent models have guards that automatically snap down into place when the bag is taken off. Some new models also automatically shut down or disengage the blade if you let go of the handle. If you're buying a new mower, look over its safety features. They are worth the money.

You also might ask yourself if you really need a power mower. The old reel lawn mower can handle most small yards if the grass isn't allowed to grow too tall between mowings. It's good exercise, and it cuts down on the neighborhood's noise pollution.

If you do need a power mower, you'll also need to apply these safety measures:

- Regard your mower as a piece of power equipment and teach others to respect it.
- Before starting your mower, be sure the clutch is disengaged.
- Cover the discharge chute with the metal guard or the grass catcher bag.
- Disconnect the sparkplug wire whenever you want to work on the underside of a mower.
- Do not overspeed the engine by tampering with the governor.
- Don't leave your mower unattended while its motor is running.
- Keep fuel stored in an approved area.
- Remove stones, sticks, wire, and debris from the area before you start to mow.
- Keep children and pets well away from operating mowers.
- Mow only during daylight.
- Do not use an electric power mower when the grass is wet, or when it is raining.
- Do not operate gasoline-driven power mowers in wet grass that clogs the mower and increases the danger of your slipping and falling.
- Avoid pulling the mower backwards toward you, particularly on a slope.
- When mowing on rough ground or in high grass or weeds, set the blade at the highest cutting point to reduce the chance of cutting hidden debris.
- Protect your legs; wear heavy shoes. Do not mow when barefoot or in open sandals.
- Keep pace with a self-propelled mower. Adjust the throttle to a speed set for your normal walking pace.
- Treat riding mowers like small tractors and remember it is possible for them to topple over. ➤

HELP US HELP YOU



Last month, we included two ballots in each magazine for you to tell us how we can better help you. Since we only send out one magazine for every ten people in our audience, we know many of you didn't have a chance to send in your opinions; so here's your chance. If you haven't sent one in, please do.

We know how short of time you are, but squeeze out a few extra minutes to tell us how to do our job better. If the only ones who give their opinions are people sitting behind desks like ours, we may wander off course without knowing it. You can keep us on track.

There's another thing you can do to help us: write. We rely on your articles. Don't think you have to be a great writer; just communicate your message. Send it to us, and we'll take care of the rest—that's our job. But we need you to provide us with fresh ideas.

So answer the survey card and mail it to us. Then take some more time to write us about that idea you've been carrying around in your head for a while, the idea that'll help others do their job better. You can make us a better magazine; help us help you.

HARRISON

Reader Response Form

HOW WOULD YOU RATE THE
FOLLOWING **TAC ATTACK** MATERIAL?

TYPE OF ARTICLE/FEATURE		YUCK	50-50	GOOD	SUPER
REG FEATURES	ANGLE OF ATTACK				
	CHOCK TALK				
	TAC TIPS				
	WEAPONS WORDS				
	SPO CORNER				
	AWARDS				
	LETTERS				
	FLEAGLE				
TYPE ARTICLE	EMERGENCY SITUATION TNG				
	LIFE SCIENCES/SURVIVAL				
	AIRCRAFT OPERATIONS				
	WEATHER				
	MAINTENANCE				
	GROUND SAFETY				
	HISTORICAL				
	FUNNY PHOTOS				
	CURRENT DEVELOPMENTS (AIRCRAFT)				
	WAR STORIES				
CENTER SPREAD ARTWORK					

CAN BE IMPROVED 50-50 GOOD

MAGAZINE LAYOUT ☐ ☐ ☐

ARTWORK, PHOTOS, ETC ☐ ☐ ☐

HOW MANY ISSUES OF **TAC ATTACK** HAVE YOU SEEN IN THE PAST YEAR? _____

HOW SOON AFTER THE FIRST OF EACH MONTH DO YOU SEE A COPY?

- A. THE SAME MONTH? C. TWO MONTHS LATER?
B. ONE MONTH LATER? D. OVER TWO MONTHS?

HOW WOULD YOU COMPARE **TAC ATTACK**
TO THESE SAFETY MAGAZINES?

	BETTER	WORSE	ABOUT THE SAME	DON'T KNOW
AEROSPACE SAFETY				
MAC FLYER				
USAFE AIRSCOOP				
APPROACH				

HAS **TAC ATTACK** HELPED YOU IN YOUR PRESENT DUTIES? ☐ NO ☐ YES
HOW? _____

IF YOU COULD CHANGE **TAC ATTACK** IN ANY WAY, WHAT CHANGES WOULD YOU MAKE? _____

WHAT TYPE ARTICLES WOULD YOU LIKE TO SEE MORE OF/LESS OF? _____

JOB AND RANK: _____

Reader Response Form

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FOLLOWING **TAC ATTACK** MATERIAL?

TYPE OF ARTICLE/FEATURE		YUCK	50-50	GOOD	SUPER
REG FEATURES	ANGLE OF ATTACK				
	CHOCK TALK				
	TAC TIPS				
	WEAPONS WORDS				
	SPO CORNER				
	AWARDS				
	LETTERS				
	FLEAGLE				
TYPE ARTICLE	EMERGENCY SITUATION TNG				
	LIFE SCIENCES/SURVIVAL				
	AIRCRAFT OPERATIONS				
	WEATHER				
	MAINTENANCE				
	GROUND SAFETY				
	HISTORICAL				
	FUNNY PHOTOS				
	CURRENT DEVELOPMENTS (AIRCRAFT)				
	WAR STORIES				
CENTER SPREAD ARTWORK					

CAN BE IMPROVED 50-50 GOOD

MAGAZINE LAYOUT ☐ ☐ ☐

ARTWORK, PHOTOS, ETC ☐ ☐ ☐

HOW MANY ISSUES OF **TAC ATTACK** HAVE YOU SEEN IN THE PAST YEAR? _____

HOW SOON AFTER THE FIRST OF EACH MONTH DO YOU SEE A COPY?

- A. THE SAME MONTH? C. TWO MONTHS LATER?
B. ONE MONTH LATER? D. OVER TWO MONTHS?

HOW WOULD YOU COMPARE **TAC ATTACK**
TO THESE SAFETY MAGAZINES?

	BETTER	WORSE	ABOUT THE SAME	DON'T KNOW
AEROSPACE SAFETY				
MAC FLYER				
USAFE AIRSCOOP				
APPROACH				

HAS **TAC ATTACK** HELPED YOU IN YOUR PRESENT DUTIES? ☐ NO ☐ YES
HOW? _____

IF YOU COULD CHANGE **TAC ATTACK** IN ANY WAY, WHAT CHANGES WOULD YOU MAKE? _____

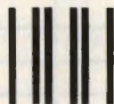
WHAT TYPE ARTICLES WOULD YOU LIKE TO SEE MORE OF/LESS OF? _____

JOB AND RANK: _____

CUT ALONG SOLID LINE

FOLD ALONG DOTTED LINE
TAPE AND DROP IN MAILBOX

HQ TAC/SEPP
LANGLEY AFB VA 23665



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Penalty for Private Use, \$300

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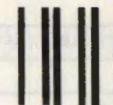
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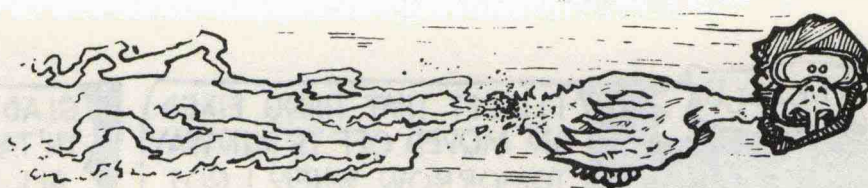
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TAC TALLY



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

TAC		
APR	THRU 1981	APR 1980
7	12	9
4	8	6
6	10	8
6	9	6

ANG		
APR	THRU 1981	APR 1980
0	3	6
0	2	5
0	0	7
0	0	4

AFR		
APR	THRU 1981	APR 1980
0	0	0
0	0	0
0	0	0
0	0	0

TAC'S TOP 5 thru MARCH '81



TAC FTR/RECCE	
class A mishap free months	
38	33 TFW
31	1 TFW
30	31 TFW
21	58 TTW
18	49 TTW

TAC AIR DEFENSE	
class A mishap free months	
113	84 FIS
99	57 FIS
52	5 FIS
49	48 FIS
30	49 FIS

TAC GAINED FTR/RECCE		
class A mishap free months		
108	188 TFG	(ANG)
100	138 TFG	(ANG)
99	917 TFG	(AFR)
96	116 TFW	(ANG)
86	434 TFW	(AFR)

TAC GAINED AIR DEFENSE		
class A mishap free months		
105	191 FIG	(ANG)
86	102 FIW	(ANG)
82	177 FIG	(ANG)
48	125 FIG	(ANG)
31	119 FIG & 142 FIG	(ANG)

TAC/GAINED Other Units		
class A mishap free months		
141	182 TASG	(ANG)
134	193 TEWG	(ANG)
129	26ADS/4787ABGp	
125	110 TASG	(ANG)
121	USAFTAWC	

CLASS A MISHAP COMPARISON RATE 81/80

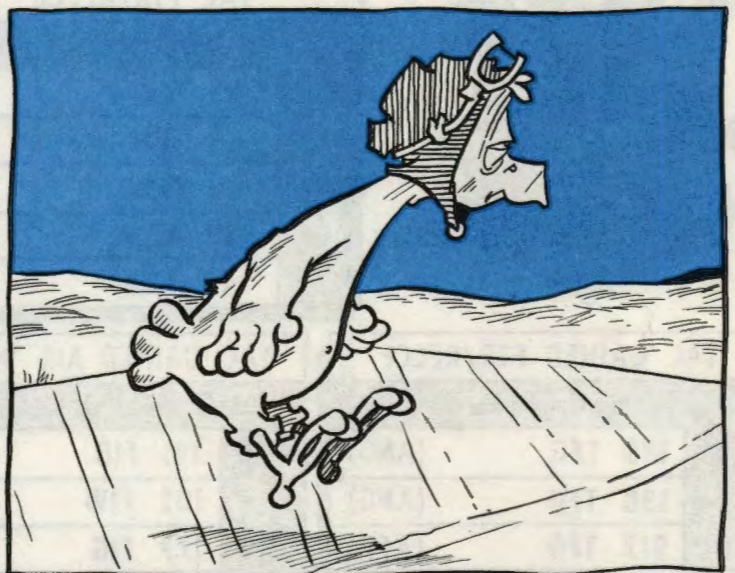
(BASED ON ACCIDENTS PER 100,000 HOURS FLYING TIME)

TAC	1981	4.0	3.0	3.2	5.6								
	1980	2.0	4.0	5.2	4.4								
ANG	1981	9.3	4.8	4.6	3.3								
	1980	5.0	7.6	6.6	7.1								
AFR	1981	0.0	0.0	0.0	0.0								
	1980	0.0	0.0	0.0	0.0								

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

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FLEAGLE



SLAM

