

# TAC ATTACK

JULY 1982



LIVE TO FLY, FLY TO LIVE  
...Pg 4



## Angle of Attack



**T**he Fourth of July is upon us, and summer is in full swing. You'll find a lot of information for summertime activities in this issue.

Since some of you will be getting out in the sun on your motorcycles, we have an article for you called "Motorcycle Riding Is Like Flying." Others of you will enjoy the summer on your boats. You'll want to review the second part of our summer boating refresher. If you missed the first part, you can find it in last month's issue.

Many of you will be vacationing. Don't take for granted the fire safety of the places where you stay overnight. Just as you should have a fire plan for your own house, you should also have a plan in mind when you check into a hotel or motel. The article "Hotel/Motel Fires" will give you some tips.

Flying is our business year around, but it can get busier in the summer. Aviators will find a lesson on realistic training in "Live to Fly, Fly to Live."

We to learn to train realistically while still keeping a margin for safety. How well we do it helps determine how many more Independence Days this country celebrates. Let's take that responsibility seriously, but at the same time enjoy this Independence Day.

RICHARD K. ELY, Colonel, USAF  
Chief of Safety





READINESS IS OUR PROFESSION

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COMMANDER

**LT GEN THOMAS H. McMULLEN**

VICE COMMANDER



**COL RICHARD K. ELY**

CHIEF OF SAFETY

**MAJ JIM MACKIN**

EDITOR

**STAN HARDISON**

ART EDITOR

**MARTY DILLER**

EDITORIAL ASSISTANT

**SGT DAVID GARCIA**

STAFF ARTIST

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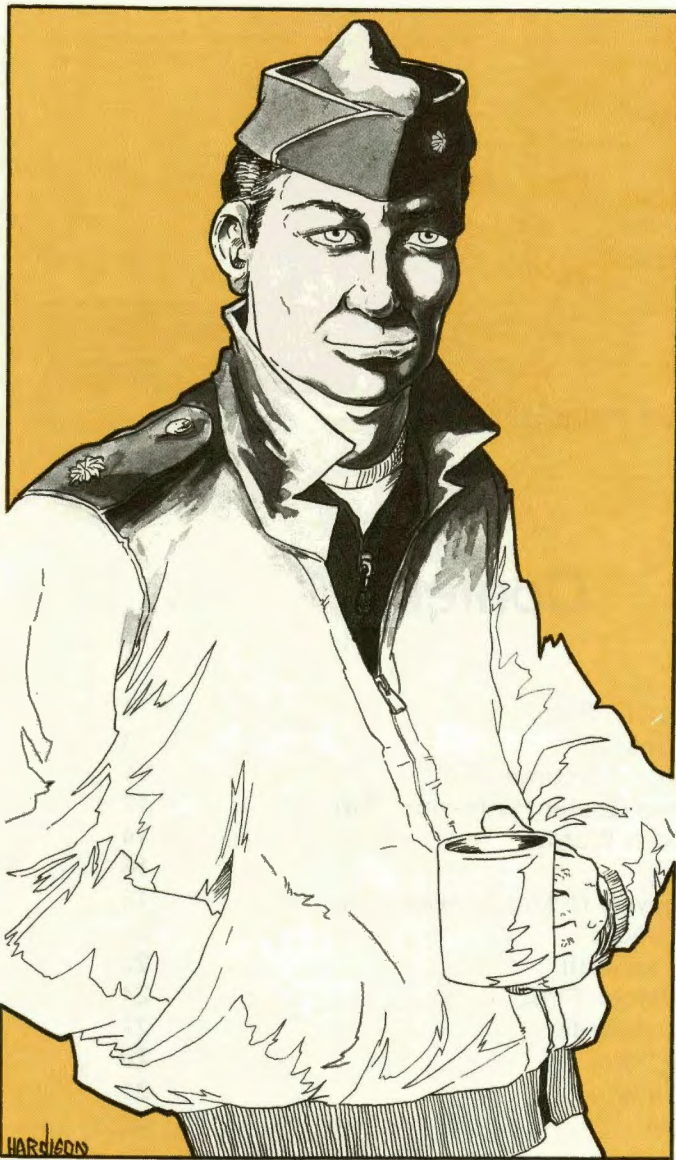
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**By Maj Dennis M. Selvig  
405 TTW**

The flakes of snow blew across his boot, and he could feel the cold air on his face; yet somehow it wasn't cold—it was invigorating. He leaned back against the alert barn and looked out to the east to see the sunrise. The sky was becoming light, but the rays wouldn't start streaking across the sky for some

# LIVE FLY TO

time yet. Maybe by then the cook would have the bacon on. He took another sip of coffee.

The plane sat there in the floodlight looking almost docile. Twenty-five tons of fire-breathing machine; but at this peaceful moment of the morning, the lethality that she packed was hidden by her beauty. He wanted to fly her today. He was ready. He had risen early, but he felt refreshed and alert. So he came out to enjoy this moment of peace—good times never last.

Suddenly, he felt like an ice cube had been rammed down through his head and into his heart. He could have sworn his eyeballs caged up for an instant. Then he felt the scalding coffee on his knuckles and tossed the cup down as he started to run to the plane. Serenity just cannot compete with 100 decibels of klaxon noise. He swore he would never stand under the horn again—no matter what time of day!

He was up the ladder, in the cockpit, and strapping in before anyone else was stirring. Then the door to the sleeping quarters burst open, and Hank's crew chief came out like a wild rocket. Fortunately, his steering got better as he got closer to the plane. Just before he reached for his headset, he glanced at the cockpit and gave a surprised look when he saw his pilot already in the cockpit, giving the start signal.

The smooth and easy sound of the start sequence filled the shelter as more bodies flew through the doorway. Hank looked from his cockpit across the floor to the doorway, but there was no sign of his wingman, Ned. Maybe this mutual support thing should start off with getting your wingy out of bed.



# TO FLY, LIVE



Hank's concern turned to worry as the first engine came up to speed. No Ned yet and now the cook was standing in the doorway, watching the show. Not to worry—a familiar shape replaced (or should I say displaced) the cook as Ned appeared on the scene. Fireplug or not, he sure could move fast once he got started.

Pins were pulled, panels latched, switches thrown, and chocks kicked. As the first rays streaked across the sky, the countryside awoke to the sound of freedom and the sight of two birds rising up to fight. The challenge was far out in the east; they could see it as they got closer. There were flashes and puffs of smoke. Sometimes they would see a brief brilliant flash on the ground that marked the loser of the fight. This was it! Fence check, and they were ready. There was no orbiting, no waiting, no ready-to-play call. They were going straight in.

There were plenty of contacts, and by the check-ins they could tell there were plenty of players on their side too. Finally it came: Commit! Hank and Ned knew the options and tactics as well as a coach knows his backfield. They chose their first target and went to work.

With the press of one tiny red button, Hank sent the first missile on the way. Off it went like a freight train. It was guiding straight and sure when Hank noticed something strange out of the corner of his eye—a small, thin, white streak. The tip of the streak was on fire and headed straight for him. The radio cracked to life as Ned called out that he had engaged the bandit. That's good, thought Hank, but now he was one-versus-one with the missile. Plenty of speed now—keep a tally—all right, pull! That icy

cold feeling came back as the missile neared, but it went away as the missile flashed by. He rolled back the other way and saw a little black cloud behind him where the missile detonated. Up ahead, flames and falling debris streaked the sky where Hank's missile had found its mark. Now, where is Ned? There, left eight o'clock low and makin' angles on the enemy. Hank had just rolled into a left bank to pull over to Ned when everything went black.

Just when things are getting good, they always pull the plug! He unlocked the canopy and looked across the shelter to Ned's cockpit. Something was wrong: Ned's machine was still running, and he could see Ned's fuzzy form behind the frosted glass canopy. He was still flying and having a good time at that. How could the facility fail just one machine and not the other? Hank's puzzled look was noted by the training director, Colonel Johnson.

"You got shot down," he said.

"But I evaded that missile."

"You must be talking about the one you saw," grinned Colonel Johnson.

"There were two?"

"Yep."

This time the snow was cold on his boots, and the air was distinctly chilling. Inside the debrief facility,



# LIVE TO FLY, FLY TO LIVE

Hank grabbed a cup of coffee and sat down before the biggest stack of forms he had ever seen in his life. Why did he volunteer to help evaluate this new type training facility? Dad had been in the Army, and he was right: Never volunteer!

Hank's feeling that he could contribute something had made him volunteer. He had seen the need for a training system that could give a pilot all the realism he could handle. In fact, this facility made it hard to tell the difference between fact and fantasy. If the projector hadn't been slightly out of register as he closed the canopy, he would have had a hard time believing that he wasn't really flying.

Training versus real war: that's why this project existed. The aircrews needed "realistic training"; but, just as important, they needed "total training"—total training that included weapons firings and complete air- and ground-threat environments. But, as training in the air was real, the losses were just as real. We lost people, planes, and along with those we lost combat capability. Well, what's a mother to do?

Train using a facility like this one? Hank was impressed with this facility, but he knew it wasn't the only answer. You have to fly, and fly plenty, if you're going to be good. Even if the sim is good enough to

scare the stuffing out of you, it's no substitute for flying.

After the forms were filled out, he sought out Steve, one of the other pilots on the evaluation team.

"You know, Steve, this sim isn't the whole answer."

"You got a better one, Hank?"

"Yes. I've been thinking: This sim is great, and it serves its purpose well; but it isn't going to reduce our mishaps any. We still need to fly and train hard. But when we fly, we need to realize that training, by definition, requires that we maintain a *margin*. We just can't do everything in flight that we can do in the sim, and we have to recognize that fact. We must maintain a margin when we fly: we must do the things that are possible, but do them without sacrificing our margin by going farther than we ought to. That's the way we are going to keep the mishap rate down."

"What do you mean by a *margin*?"

"The margin that we keep for error, for keeping us out of trouble. In training, you have to have a margin; if you don't have it, then you are no longer training."

"Well, it isn't war either."

"That's true," said Hank, "but it isn't training. You're no longer practicing it, you're doing it! Doing it with no allowance for error, no room to soak up those unexpected things that happen."

"So we should fly at 10,000 feet and never exceed 30 degrees of bank?"

"No, but we should look hard at the things that tend to make us reduce our margin, so that we can decide exactly how we should train."

"OK, so what about these things that reduce our margin? You mean like the temptation to fly too low?"

"Yes. Not only that, but also the pressures we have on us when we get into realistic training. Let's say the aggressors come to town or we go to Red Flag or some other deployment. Under those conditions, it's no longer us good ol' boys training against each other to hone our skills. Now it's our team against their team. The result?—competition. Competition is excellent, and I'm not knocking it; but along with competition comes the world's most effective motivator—peer pressure. If you've ever let



down the other players on your team, then you know what I mean."

"Yeah, I did that once when I was a lieutenant," winked Steve.

"What about other things that reduce your margin? Off-station flying for example. The record is clear there. I think you need even more margin than because so many things are different. Do you get the same rest you got back home? Is your mission preparation as good when you spend twenty minutes trying to find where they post the weather and NOTAMS? Is your briefing as good when you give it from different facilities? Do you brief the local hazards well when you haven't seen them but once yourself? Is your flying as good over snow as it is over forest, as good over water as over sand? Do you need a higher Bingo to RTB without getting violated?"

"I see what you mean. The jocks have a lot to handle. We always get it in the end don't we."

"The jocks?" said Hank. "What about the supervisors? They have pressure too. You just try to stand up at the mass debrief to explain why you didn't get enough planes airborne to effectively accomplish your unit's mission! They need to react to changes in weather, ground aborts, slips, IFEs, and an occasional lost flight plan. That's tough to do and still maintain your standards."

"That's what we pay 'em for, Hank. They have the experience to keep things working while not compromising their standards. When things reach a certain point, they must have the judgment to call time out. It reminds me of a time we were deployed to an exercise. We were getting tracked too much by ground threats on ingress and egress; so the boss was really tempted to cut our min altitude in half or even lower, but he didn't. I was glad, because the only time I'd been below our min altitude before was in skip bombing."

"Well, I guess it's up to all of us to be aware of the margin we must have in training and to do our utmost to keep some finite amount of margin in each sortie."

"Good point, Hank. Let's keep that idea alive and spread it around."

Just then Colonel Johnson walked into the lounge.



"I'm starting another pair in training, guys, and I've got to brief you on something. I got approval to go with the full charade. The next guys in here don't know it's a sim, so don't tell them. I've had them going through two days of buildup. They think the war is about to break out and that this is an FOL. Do you think we can bring it off?"

"It's a pretty incredible facility, sir. Yes, I think you can."

"It's good, sir, right down to the oil stains."

That reply brought a big grin to Colonel Johnson's face. Hank was still thinking about how proud Colonel Johnson was of his facility when he saw the new pair getting out of the six-pack. Hank swung his B-4 bag up into the pickup.

"Hey, Hank, you guys do any good?" asked the new lead.

"Mixed success," said Hank, remembering his last mission.

Hank's replacement was always chafing against the rules, and his remarks soon showed that he hadn't changed much lately.

"Well, we're ready to get into this, Hank. I've had enough of that so-called realistic training and enough of those silly rules."

Hank shook his hand and wished him luck. ➔



# TIPS

It is more important to know where you are going than to get there quickly. Do not mistake activity for achievement.

—Mabel Newcomber

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

## DUCKS DING

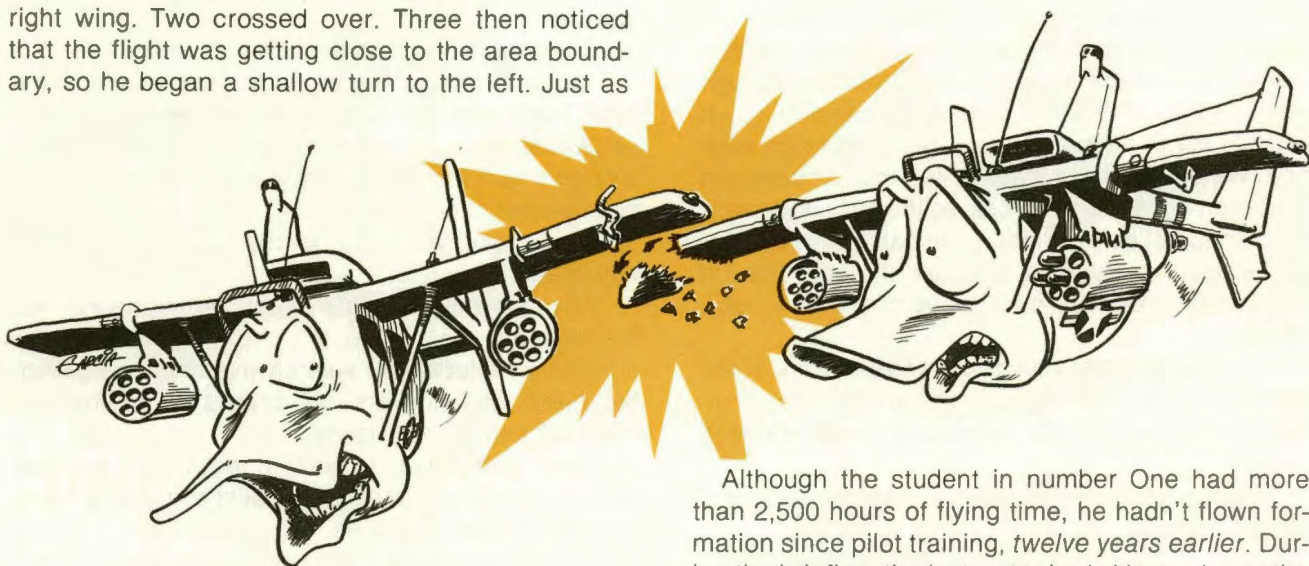
A three-ship of O-2s went to the range and shot some rockets. Then they rejoined to practice fingertip formation. Number Two joined up on the left and Three on the right. The flight had briefed that Three would lead the fingertip because the students in One and Two needed the wing work. As Three pulled into fingertip position on One, the instructor in One signaled Three to take the lead. The instructor in One also called on the radio, "Three, you have the lead on the right." Three acknowledged, "Roger."

Through this whole sequence, One was actually being flown by the student, not the instructor. The student did not have Three in sight. He neglected to mention that to the instructor.

Once he took the lead, Three told Two to take the right wing. Two crossed over. Three then noticed that the flight was getting close to the area boundary, so he began a shallow turn to the left. Just as

Three began the turn, the instructor in One spotted the airplanes working in the adjoining airspace. He called them out and kept his eyes on them. Three looked right, checked Two's position, and then looked left. He saw that he and one had overlapped wings. At the same time, the instructor in One saw what had happened and took control of the airplane.

One and Three broke away from each other; but as they did, One's right wingtip struck the bottom of Three's left wing. The wingtip on One was broken off, and the pilot tube on Three was bent; but they were both able to land OK. Two had alertly gotten out of everyone's way when the action started, so he avoided any damage.



Although the student in number One had more than 2,500 hours of flying time, he hadn't flown formation since pilot training, *twelve years earlier*. During the briefing, the instructor had skimmed over the



formation procedures—"Standard, any questions?"—to get to the weapons delivery procedures and techniques. The student hadn't asked any questions. When it came time for the planned position change in flight, the instructor went ahead and gave the signal and made the radio call without checking to see if the student was ready. As it turned out, he wasn't.

It might well be that for every other student this instructor flew with, the briefing would have worked. But we can't treat all our students the same; they are different. Our flight planning, briefing, and inflight instruction should be tailored to the student, not canned. On the other hand, if we're students and we're not clear on anything, when the instructor asks for questions, let's oblige him. If you think that's too embarrassing, you ought to try explaining an incident like this. Better a little embarrassment now than a lot of embarrassment later.

### ***IT'S NOT WORTH AN ABORT-RIGHT?***

Some of our readers think we overdo it a bit when we insist on getting the airplane fixed before flying it. One example that has been specifically mentioned is the automatic mode of the air conditioning system. Surely that's a luxury item, not a safety-of-flight problem, isn't it? Well, let's see:

An A-10 was number 2 in a two-ship refueling mission. Before takeoff the pilot was unable to control the cockpit air temperature and air flow in the automatic mode. So—what the heck—he switched to manual mode and took off. After leveling at 20,000 feet en route to the refueling track, the pilot noticed that the cabin altitude was higher than normal. No air seemed to be coming through the vents. But he found he could control cabin altitude and temperature a little bit by using cabin defog air. Then, just before he hooked up with the tanker, his pitot-static system failed. The flight leader told him to go ahead and refuel, just to make sure he had enough fuel. After he disconnected from the tanker, the pilot saw the Master Caution light and the Gun Unsafe light come on. The flight returned home, and the pilot landed the airplane without any further problems.

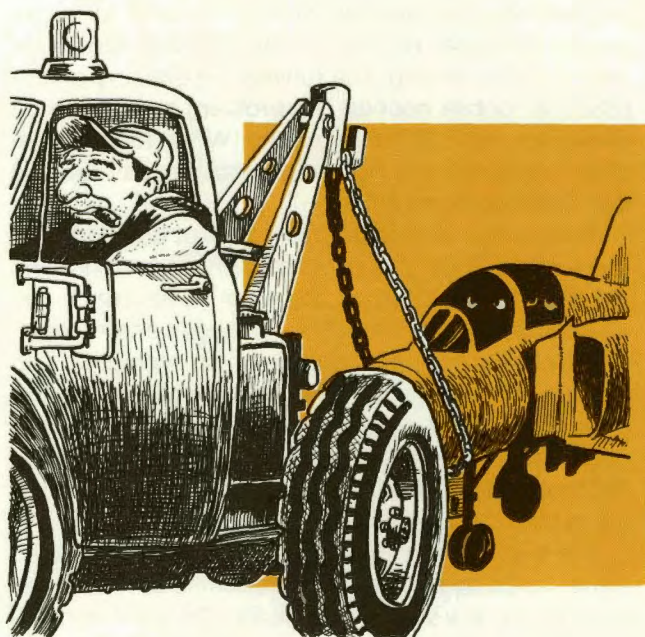
When the maintenance troops checked out the airplane, they found extreme heat damage caused by a detached cabin-air-supply line. Both pitot-static lines were melted. The gun control unit and interstation control unit were damaged beyond repair. The aluminum main-air-supply duct, which is 17 feet

long, had to be entirely replaced; and the water separator was charred black. Bleed air hotter than 600 degrees F had been directed into the area. Obviously, in this case, the air conditioning problem was not a minor matter.

Maybe in your case the automatic mode of the air conditioner is a luxury item. But, then again, maybe it's not. A problem there may be a symptom of something more serious. How can you be sure?

### ***I HAVE A QUESTION, SIR***

An F-4 instructor pilot (IP) had just landed from a basic fighter maneuvers mission with a student weapon systems operator (WSO) in the back seat. On rollout the IP was doing his after-landing checks. He turned off the three stability-augmentation switches and then was distracted by a comment the WSO made. When he returned to his checks, the IP intended to recheck the stab-aug switches; but he inadvertently grabbed the engine master switches and turned them both off. The engines flamed out from fuel starvation. The airplane coasted to a stop on the runway and had to be towed off by the crash recovery team.



We don't know what the WSO's comment was; but it should have been, "Why are we doing checks during landing rollout, sir?"



# TAC TIPS



## WHEELS UP AND EARS OFF

The F-15 pilot was having trouble hearing the air traffic controller on the radio because his number 2 UHF radio was too noisy. His Guard receiver was set on UHF 2, together with his squadron common frequency. There was a beeper on Guard and a lot of routine chatter on squadron frequency. In order to hear the air traffic controller during a TACAN approach, the pilot turned down UHF 2. As he approached the initial approach fix, the pilot was still having trouble sorting out the radio calls, so he turned UHF 2's volume down even more until he was finally able to concentrate on the controller's calls.

The pilot flew that approach without any problems. Then he flew two more traffic patterns to low approaches, followed by one more pattern for an intended full stop. But on this pattern the right main gear failed to extend. The runway supervisory officer (RSO) in mobile noticed the problem and called on Guard for the F-15 to go around. When the airplane didn't respond, the RSO repeated the call; but he didn't think of firing a flare.

Meanwhile, of course, the F-15 pilot couldn't hear the radio call on Guard because he'd turned down the UHF-2 radio. So he continued his approach and landed on one main wheel. As he began aerobraking, the pilot saw the right wing drop; he corrected with aileron, thinking he was encountering a crosswind effect. When the right wing continued to drop, the pilot recognized that the problem was more serious. He selected full afterburner and full left aileron, trying to hold the wing up and go around.

The airplane continued to settle before the added thrust could take effect. The centerline tank scraped the runway in a shower of sparks. The right horizontal stabilator tore off its leading edge when it hit the BAK-12 cable. But the pilot was able to get airborne when the thrust took hold. Once he was safely airborne, he was joined by another F-15 who checked

him over as he used emergency gear-lowering procedures. When the gear checked OK, the pilot did a controllability check and then set himself up on a 5-mile straight-in approach. The full-stop landing was uneventful.

We've got to admit the pilot could have done better. Among other things, the technique of rechecking configuration just before crossing the threshold comes highly recommended by those who have learned the hard way. And we're not supposed to turn off Guard. But the pilot isn't the only one we can learn from. The RSO might have been able to prevent the whole thing by firing a flare while he was making the second radio call. In addition, when we're tempted to be careless in handling the emergency beeper or tempted to be chatterboxes on the radio, maybe we should ask ourselves if we're forcing someone to turn down his radio. If we treat the radio like a telephone, the line might be busy when we need it most.

## GARTER AND GUILLOTINE

The WSO was strapping himself in an F-4 for his third flight of that day. After connecting the left leg garter, he noticed the leg restraint line wasn't routed through the thigh garter. Just a couple of weeks earlier he had discussed this problem with another aircrew member. He knew that there was a way to release the line and reroute it. So he didn't call for any assistance, but decided he could fix it himself. To release the line, he grabbed the emergency harness release handle and pulled. That fired the guillotine cartridge, which cut the parachute withdrawal line and made the system unuseable.

Obviously, the WSO didn't know his egress system. He confused the emergency harness release handle with the leg restraint manual release (hard to do). Since his egress system could mean life or death to him, an aircrew member should know it as well as he knows anything.



# Aircrew of Distinction



On 23 March 1982, CAPT JAY F. REED and 2LT JOHN A. KOZURA were flying a UH-1P with six passengers on a routine training and range support mission from MacDill Air Force Base to the Avon Park gunnery range. Approximately 20 miles west of Avon Park, Lieutenant Kozura started a descent to range altitude. At 700 feet he noticed that the power turbine rpm was low. He then increased throttle to the maximum but was unable to attain normal operating rpm. At the same time, Captain Reed noticed an unusually high fuel flow reading, and he smelled fuel.

Captain Reed took the controls and started to descend while Lieutenant Kozura monitored the engine instruments and cleared the aircraft. Captain Reed turned into the wind and quickly found a field suitable for landing. At approximately 150 feet, Captain Reed increased collective pitch to slow the descent. The low-rpm warning light and audio system came on indicating the main rotor rpm was below safe levels; engine failure was imminent. To prevent further loss of rotor rpm, Captain Reed quickly lowered the collective. Then he was able to cushion the aircraft to a safe touchdown using full collective. After everyone left the aircraft, Lieutenant Kozura checked the engine deck and found a massive fuel leak.

By their superior airmanship, crew coordination, and quick response to a serious emergency, Captain Reed and Lieutenant Kozura saved a valuable aircraft and prevented possible loss of life. They have earned the Tactical Air Command Aircrew of Distinction Award.

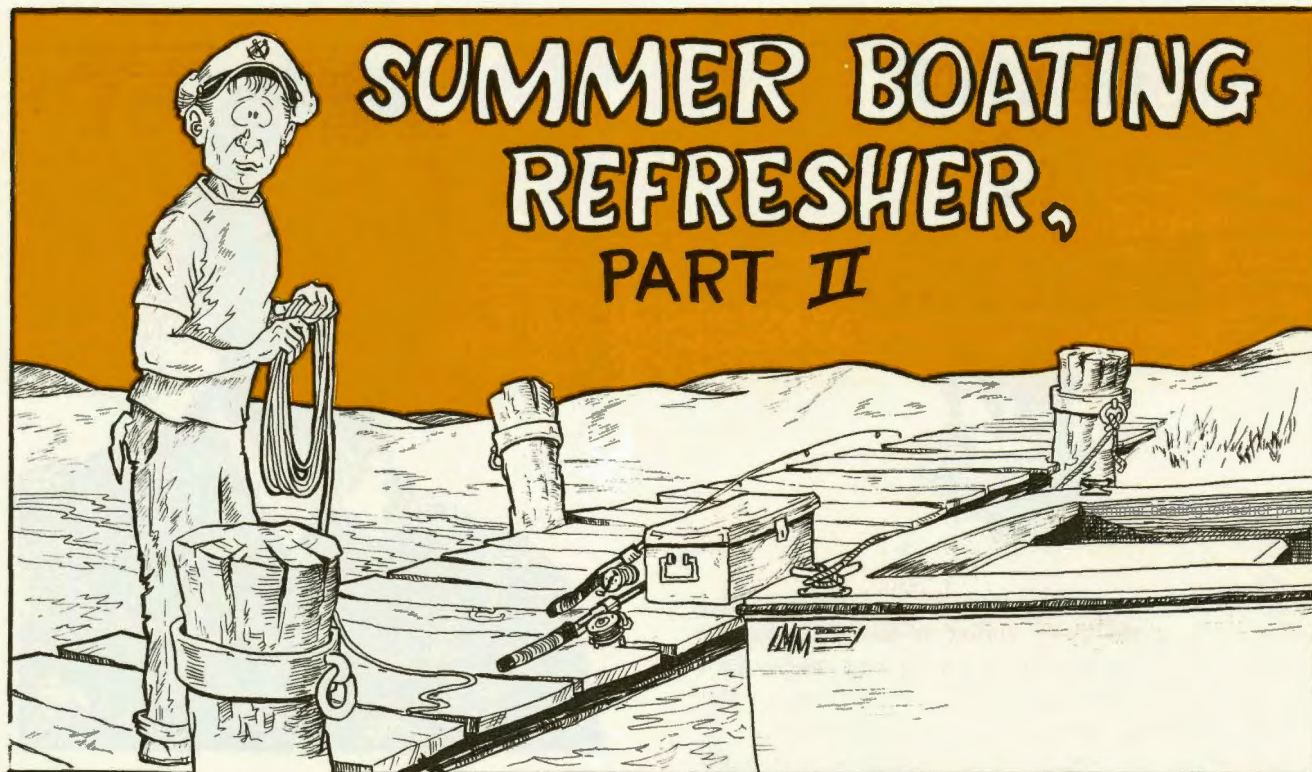


**Capt Jay F. Reed**  
**56 TTW Helicopter Section**  
**MacDill AFB, FL**



**2Lt John A. Kozura**  
**56 TTW Helicopter Section**  
**MacDill AFB, FL**





By Ms. Marty Diller

Here's the second part of our boating refresher course, and it covers navigation aids and other equipment. Last month we discussed trailering, launching, boarding and loading, fueling, handling, mooring and anchoring, rules of the road, and heavy weather. Remember, if you find some areas that seem unfamiliar, you need to know more before going out on the boat.

### Navigation Aids

Navigation aids help you find your location, warn you of danger, guide your boat from place to place, and point out special marine situations to you. All boaters should know the navigational aids that apply to their waters, whether the aids are natural land features or artificial devices.

**The Buoy System.** In the United States you can encounter several different systems of navigational buoys; but, in general, they all show you on which side to pass. The basic colors are red and black; and the rule-of-thumb is: "Red, right, returning." The red buoys should be on the right (starboard) and the black buoys on the left (port) when you are returning from the sea. Rivers use a slightly different system; but the rule "red, right, returning" works if you re-

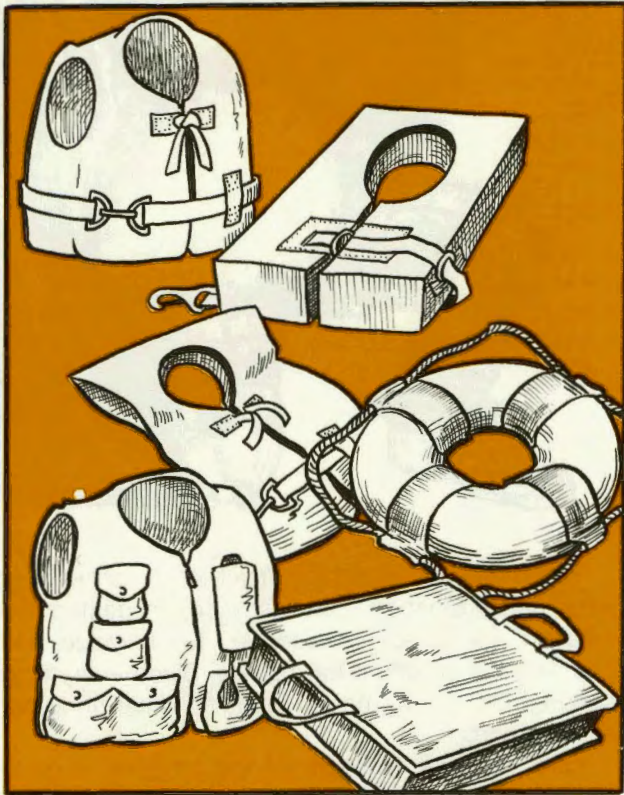
member that the rivers eventually empty into the sea. If you are headed upstream, you are, in a sense, returning from the sea; and the red buoys should be on the right. The system also includes mid channel buoys and junction buoys. A mid channel buoy is vertically striped black and white. You should steer toward it and pass closely by on either side. Junction buoys are horizontally striped in red and black; the color on top tells you which side to pass. If the top stripe is red, keep the buoy on your right side when returning from the sea. Junction buoys may also be used for obstructions, so don't pass by too closely. For more detailed information on the different buoy systems, check with the Coast Guard Auxiliary.

**Nautical Charts.** Although the pattern of buoys is rational and consistent, it may not always seem that way to you because of the twists and turns in waterways. That's one reason why you need a nautical chart. The charts show the position of buoys and also give their number and shape. By comparing a buoy number with the chart, you can fix your position precisely. Nautical charts also show land objects and marks on shore. They give clearances from bridges and overhead wires. Depths of water are given in feet at low tide. In addition, the charts are color coded: shallow water is blue, deep water is white. Good charts are essential to good navigation. Get them and use them.



## Safety Equipment You Must Have

**Personal Flotation Devices (PFD).** Boats under 16 feet must have one wearable (type I, II, and III) or one throwable (type IV) PFD for each person aboard or being towed on water skis by the boat. Boats 16-65 feet must have one wearable PFD for each person aboard and one throwable PFD. Make sure your PFDs are in good condition. We recommend that all



children and nonswimmers wear a PFD at all times regardless of boat length requirements.

**Fire Extinguishers.** Fire extinguishers are classed according to volume and the kind of fire they put out. Four types of extinguishers are carbon dioxide, foam, dry chemical, or Freon. They can put out combustible material, combustible liquid, and electrical fires. If you have a carbon tetrachloride or chlorobromomethane extinguisher, get rid of it; its fumes are toxic. Outboard motorboats less than 26 feet long that do not have compartments that might trap gasoline fumes don't have to carry fire extinguishers; but we recommend you have one anyway. All other motorboats are required to have fire extinguishers. The type is determined by boat length and whether or not the boat has a permanently installed firefighting system.

**Distress Signals.** Any combination of pyrotechnic signaling devices is acceptable as long as they add up to three signals for day use and three signals for

night use. A *pyrotechnic* is a firework-type signaling device like a flare. You'll also need nonpyrotechnic signal devices, but only one distress flag is needed to meet daylight requirements, and only one electric distress light is needed to meet night requirements. The only exceptions are for manually propelled boats, recreational boats less than 16 feet long, boats participating in organized events, and open sailboats that are less than 26 feet long and not equipped with propulsion machinery. The exceptions apply only to daytime operations.

**First Aid Kit.** You must have a fully equipped first aid kit and a first aid book.

## Other Requirements You Must Meet

**Backfire Flame Control.** This cools down backfires from the carburetor and is required on inboard and outdrive engines.

**Bell, Whistle, or Horn.** Every motorboat 16 feet and over must have a bell, whistle, or horn. Know your signals.

**Lights.** From sunset to sunrise, all motorboats are required to show lights prescribed for length.

**Hull ID Number.** All recreational boats built after 31 Oct 72 must have a hull identification number.

**Registration Number.** State registration requirements vary.

**Display Capacity Information.** All monohull boats less than 20 feet long and built after 31 Oct 72 (except sailboats, canoes, kayaks, and inflatable boats) must show their capacity.

**Ventilation.** All motorboats using gasoline or other fuel with a flash point less than 100 degrees Fahrenheit must have a ventilation system. You should have at least one exhaust duct for each engine compartment that might collect fuel vapors. ➔

## Additional Equipment We Recommend

- Fuel tank fill pipe
- Portable fuel tanks and spare fuel containers
- Carburetor drip pan
- Anchor and anchor line
- Bilge pump, manual bailer, paddles or oars
- Tool kit and spare parts
- Spare propeller and shear pin
- Spare battery and light bulbs
- Compass and nautical charts
- Emergency food, water, clothing
- Mufflers
- The Head
- Fenders
- Extra line
- Radio
- Flashlight



# WEAPONS WORDS

## M-16 Misfire

A staff sergeant was firing an M-16 rifle on the small arms range. The rifle was equipped with a .22-caliber adapter. While the sergeant was in the prone position, a round failed to fire when he pulled the trigger. He stood up to clear the weapon. He took the magazine out and then pulled the bolt back to lock it; that's when the cartridge in the chamber fired. The sergeant felt the gas pressure from the cartridge hit his face, and his eye felt a little irritated, but he didn't seem to be injured.



The sergeant notified the small arms instructor of what had happened. The instructor inspected the weapon, including the adapter, for damage and checked the sergeant for injuries. Since everything seemed OK, he let the sergeant continue firing out all his rounds.

Later, the eye irritation led the sergeant to go to the hospital. There they found that he had a corneal abrasion on his left eye. He was lucky. By disregarding range safety rules as he did, he could have lost the eye. Those rules are there for a reason: to protect each other and our own selves from the dangers involved in handling weapons. We can never get so experienced that we don't need those rules.

## Blue Means Inert— Right?

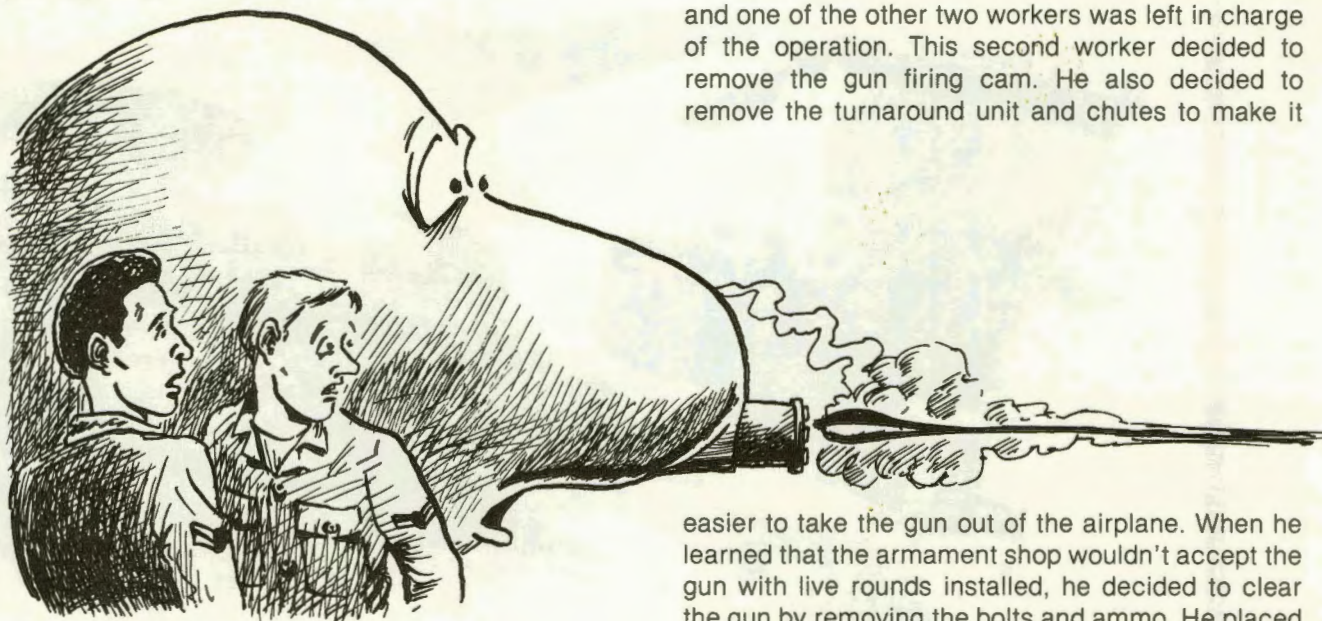
Here's an interesting item from the Navy's *Maintenance Crossfeed*. During explosive ordnance disposal (EOD) operations at an impact area, a blue MK-82 bomb was countercharged; it detonated *high order*. During the same disposal work, several olive-drab bombs were found to be filled with concrete.

How do you handle ordnance that's painted blue or stenciled "inert"? Are you really that sure?



# First, See If It's Loaded

An A-10 returning from a gunnery mission declared an emergency because of a Gun Unsafe light. The airplane landed and taxied to the de-arm area. There the end-of-runway crew was able to install the gun safing pin but was unable to clear the gun by using the aircraft hydraulic systems. The pilot was then directed to taxi to the hot gun area, where the airplane was met by a weapons supervisor and a maintenance worker. The weapons supervisor looked over the gun system and verified that the gun's safety cam was engaged and its safety pin installed. Then the airplane was directed back to the aircraft parking ramp.



A little later, a weapons troop was sent to clear the gun system and repair the malfunction. The worker first checked the gun to determine the condition of the round in the firing position. He determined that the round had been fired. So he opened the gun access panels and inspected the system. To find the source of the jam, he disconnected the drum drive at the gearbox housing, inserted a ratchet, and tried unsuccessfully to rotate the gun in reverse. He then reconnected the drum drive and disconnected the gun drive. Using manual drive, he tried to rotate the system. The drive would turn but the drum wouldn't. As he wrestled with the problem, the worker found a broken spline shaft at the drum drive assembly. Suspecting that the broken shaft could be the cause of the jam, he decided to remove the drum assembly from the airplane.

Two more weapons troops came out to help the first worker. After they removed the drum assembly, they reconnected the gun drive and again tried to manually rotate the system in reverse. The system rotated only an inch and a half before it stopped again. The first worker then decided to manually unlock the bolts. Violating his local operating instructions, the worker removed the lock/unlock cam, the mid track, and the safing cam. Next, he tried forcing the cocking pin to the rear and rotating the cam follower counterclockwise to the unlocked position while one of the other workers attempted to rotate the gun in reverse. That didn't work either, so they decided to remove the gun from the airplane and take it to the armament shop.

About then, the first worker was relieved of duty, and one of the other two workers was left in charge of the operation. This second worker decided to remove the gun firing cam. He also decided to remove the turnaround unit and chutes to make it

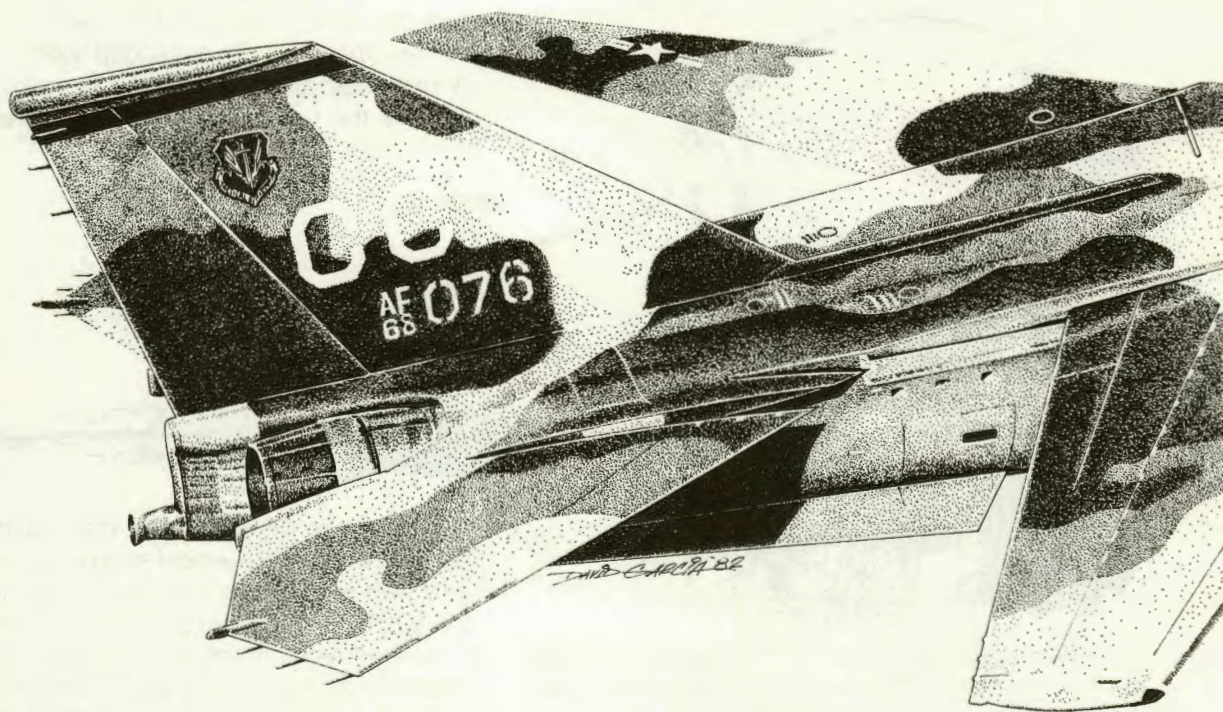
easier to take the gun out of the airplane. When he learned that the armament shop wouldn't accept the gun with live rounds installed, he decided to clear the gun by removing the bolts and ammo. He placed a screwdriver behind the cocking lever, and his helper tried to put the allen wrench in the cam follower. Just then, the gun fired a 30-mm round across the ramp. Fortunately, it didn't damage anything or anyone.

Through this whole process, no one had checked the barrels to see if they had a live round in them. The barrels weren't checked at EOR, in the hot gun area, or in the parking area. Then the first worker violated his directives when he removed the lock/unlock cam, mid track, and safety cam. That set things up for the second worker who removed the firing cam and cocked the bolt to remove it.

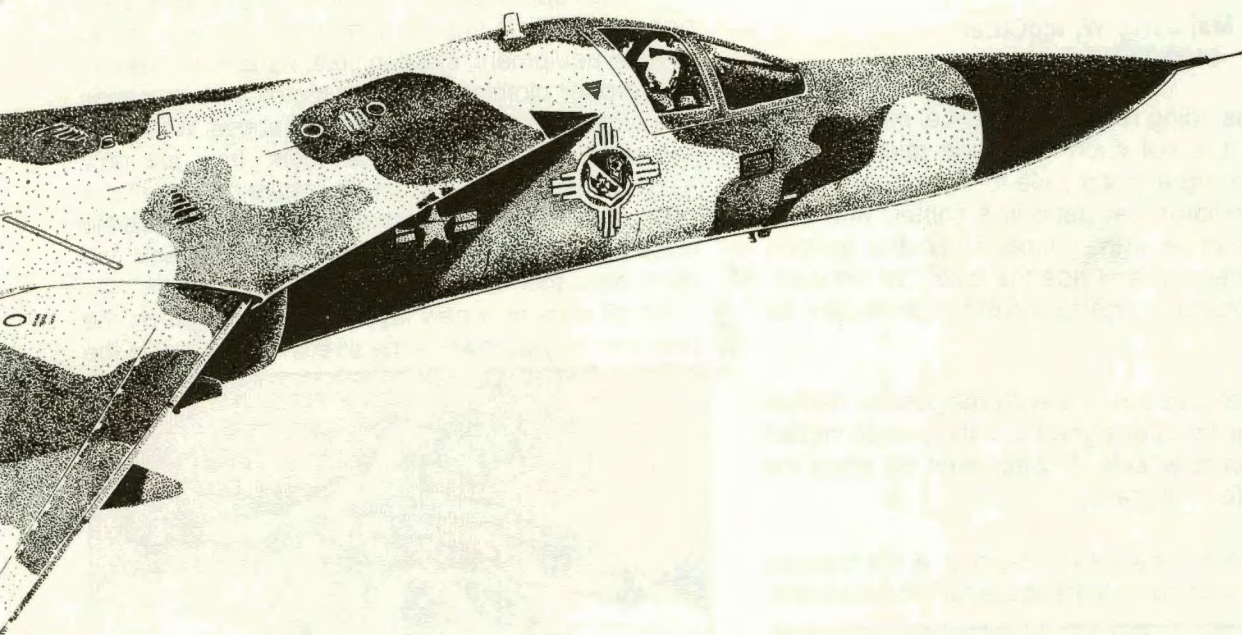
When the gun fired, all that anyone concerned could say was, "I didn't know the gun was loaded." That's been the story since guns were first invented—and the story's getting old.



# F-111D









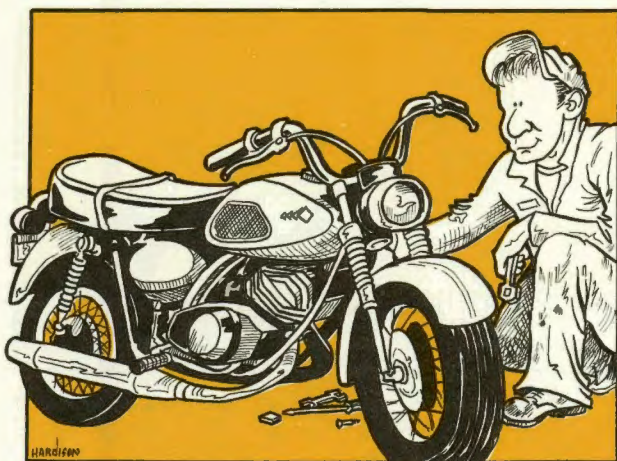
# Motorcycle Riding Is Like flying

By Maj Jerry W. McCluer  
4440 TFTG

How does riding relate to flying? Let me begin by saying that it is not such a strange relationship. I have been riding a motorcycle for three years. I am also a fightergator (navigator in a fighter) with over 2,000 hours of jet fighter time. I use the aviation philosophy daily when I ride the bike. Let me compare the motorcycle ride to a flight in a modern jet fighter:

1. *Both vehicles are inherently dangerous.* Neither of these vehicles is designed to withstand an impact on other than its wheels. Any accident will place the operator's life in jeopardy.

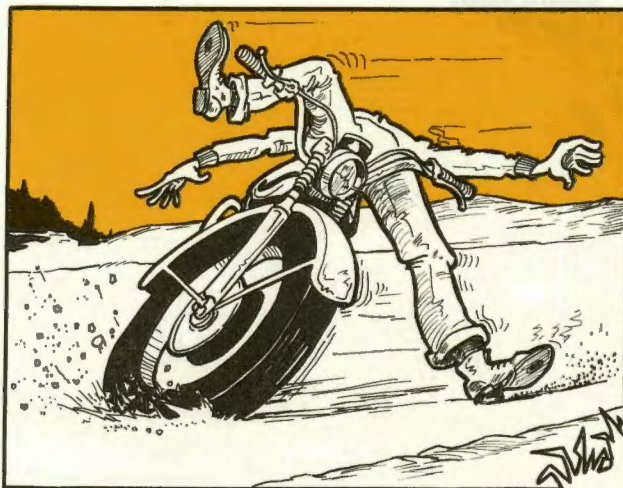
2. *Good maintenance is essential.* A tire blowout on either vehicle can set the stage for a catastrophe.



Brake failure or a sticky throttle can add to any other problem. Regular inspection with repair or replacement as necessary can prevent disaster.

3. *Life support equipment must be available when needed.* To fly in today's fighter, the operator needs oxygen equipment, ejection seat, parachute, helmet, and proper clothing. Riding a motorcycle demands eye protection, helmet, gloves, and shoes. Where the law does not call for these items, they are only essential when an emergency occurs. What are the odds against needing such equipment? What are the odds against you if you need these items and you don't have them?

An oil slick or a new layer of loose gravel on the final turn to your own home stretch could cause the



least expected disaster. An engine fire on an F-15 is also rare. But these kinds of things can and do happen.

4. *You must plan the mission or trip.* You must allow the time for a thorough preflight or priride inspection. If you find something wrong prior to riding or flying that cannot be repaired, the mission can be canceled. What can happen if your clutch or throttle cable binds or breaks? You are much better off



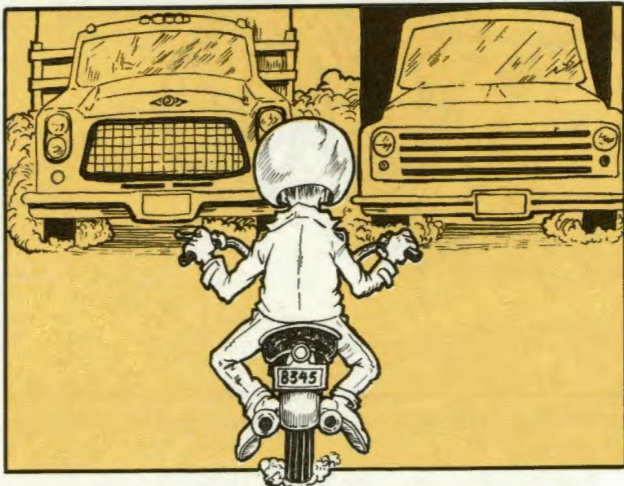
finding such things before you start out.

You must also plan the mission or trip so that you have sufficient fuel or fuel stops. At the same time



plan the trip so you have plenty of travel time. Don't push yourself too hard. Aircrews are limited by crew rest requirements. They are also prohibited from drinking alcohol or taking medication prior to flying. These restrictions have been established for a reason. Traffic laws and flight rules have been justified over and over again. As cyclists, let's give our attention to the laws and avoid those self abuses of fatigue, alcohol, and medication prior to riding.

5. *Self-defenses can save your life.* You need to be ready to apply self-defense to either save your life or to avert disaster. Modern fighters are equipped



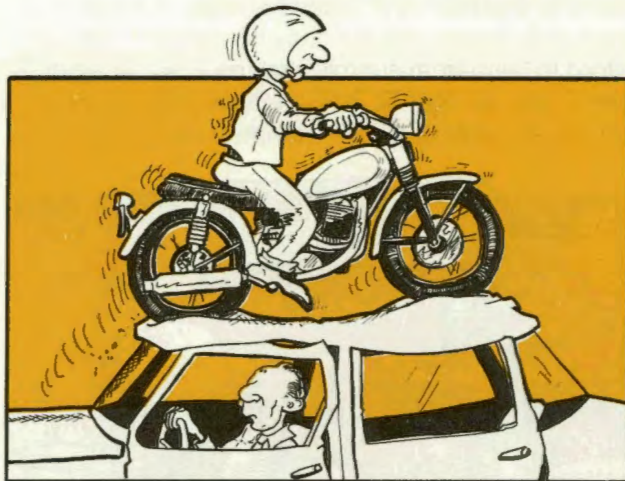
with assorted electronic equipment and weapons as well as camouflage for their own protection. On the other hand, a motorcyclist's best self-defense is to be seen. The rider should use his headlight and wear bright clothes in order to become more conspicuous.

He also has mirrors and turn signals for his self-defense. Not being seen can kill.

6. *You must know others' capabilities.* Combat-ready aircrews spend many hours in a classroom



learning about the capabilities of other aircraft and weapons. More hours are spent learning the rules for other users of friendly airspace. An F-15 pilot knows what to expect from a KC-135 or an F-5E in a given set of circumstances. Likewise, a motorcyclist knows what the driver of a car will probably do in a given set of circumstances. (Motorcyclists assume the automobile driver will always do the worst possible thing.) However, automobile drivers will not always know what the motorcyclist is about to do or even the

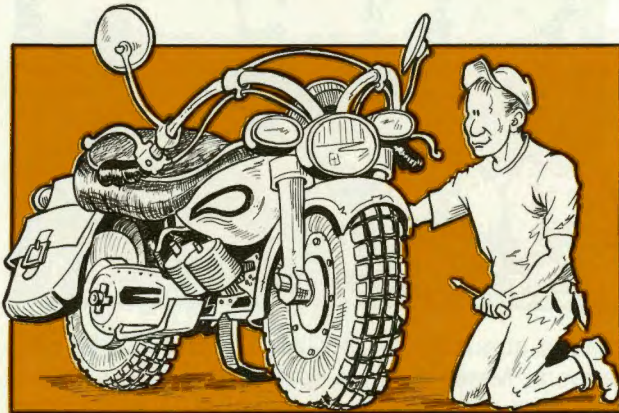


reason for his behavior. Until all licensed motor vehicle operators have the same written test, which includes questions for cyclists, many will not understand the rights of the motorcyclists. That is the one reason that there are so many accidents in which the car driver didn't see the motorcycle.



# MOTORCYCLE RIDING IS LIKE FLYING

7. *Initial training develops the skills.* Accident statistics indicate that well-trained and experienced cyclists are the safest bikers on the highway. On the other hand, even changing motorcycles (getting a larger one) is statistically dangerous for about six months. Initial training is as important to safe and



enjoyable riding as pilot training is to Air Force pilots for flight safety and mission accomplishment. All crewmembers and passengers trust that the pilot is well-trained by instructors in a formal training program. The traveling public trusts the airlines to hire well-trained pilots.

A minor accident in a car is often treated as a learning experience in today's society. A minor accident on a motorcycle is nearly nonexistent. We can't afford to learn from our mistakes on a two-wheeler. A better way to learn is from certified instructors in a structured course with a comprehensive hands-on

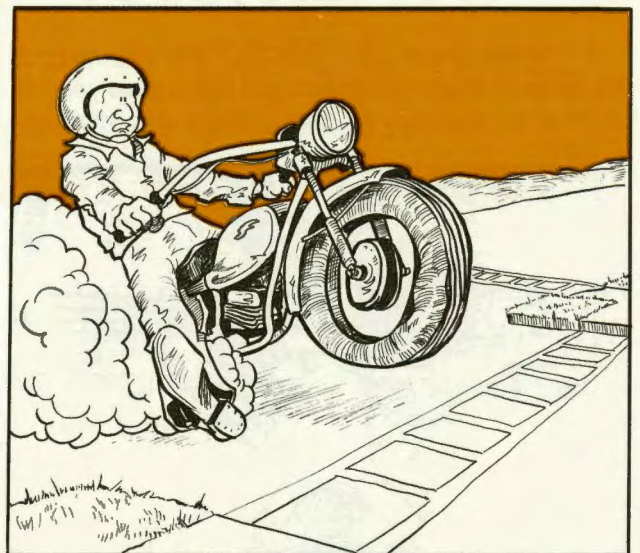


phase where the rider is critiqued. On this type of course, a rider can learn the correct way and try

assorted methods to find the best technique for himself or herself. These courses are geared to the experience level of the students and can be an eye-opener for everyone. You may say that you can't afford such a course. I say you can't afford not to have it.

8. *Continuation training maintains the skills.* All pilots must fly regularly or else they lose their flying currency. When that happens, the pilot must have a special training series of flight missions with an instructor. The need for training is determined by the length of time away from the cockpit. This is mainly refresher training. Their regular flight missions all are credited toward their continuation training and fill annual or semiannual requirements. Continuation training is also necessary for the cyclist. Each ride should give the cyclist some lessons which can be used as a good base for safe riding. Fair weather riders need refresher training more than the person who rides regularly.

The time to worry about your reaction time and your response to an event is when your bike is under control before the situation presents itself. It is a little late to figure out what you would do if you are sliding through an intersection out of control with your rear brake locked. There are structured advanced



courses available for rider improvement and refresher training.

The intent of this article is to show that we should approach motorcycle riding with the same care we show for flying. As licensed motorcycle operators, we are responsible users of the roadway. Let's live up to that responsibility—especially the *live* part. Ride safely and have a nice summer. ➤



# Short Shots



**The Right Light.** The Illinois Society for the Prevention of Blindness reports: Poor lighting won't ruin your eyes, but it will irritate them and make the task you're trying to do that much harder. You should have enough light so that you don't have to squint or hunch forward to see. Avoid glare. Be sure no shadows fall across your work. Light should come from behind. And if you're right-handed, it should come over your left shoulder; vice versa if you're left-handed.

**Thawing Food.** If you take food from your freezer and let it thaw on the kitchen counter before cooking it, you could be risking food poisoning, reports the Health Insurance Association of America. All frozen foods should be defrosted in a refrigerator set at a temperature below 40 degrees Fahrenheit.

**Racquetball Injuries.** The 7 million Americans who play racquetball face an unusual hazard: They often hit themselves in the eye with their own racquets, according to the American Medical Association. All racquet sports, including tennis and squash, produce eye injuries occasionally, but the incidence in racquetball far exceeds other games. Injuries could be prevented by wearing sports glasses with tempered lenses and sturdy frame or by wearing a sports eye guard.

**Taking a Dip?** U.S. Coast Guard Commander David S. Smith advises that people who find themselves drowning should not take off their clothes, contrary to popular belief. The clothing actually insulates the body against killing heat loss and traps air pockets that help the victim stay afloat until rescuers arrive.

**Lightning Strikes Again.** People still run under trees when the rain falls—often with disastrous results. The National Oceanic and Atmospheric Administration notes that for the past 20 years records show that 15 percent of lightning victims were struck while standing under trees. During those 20 years, 2,210 people died from lightning strikes.

**Clean Those Glasses.** Remember to clean the lenses of your safety glasses before wearing them. Seeing hazards prevents accidents.

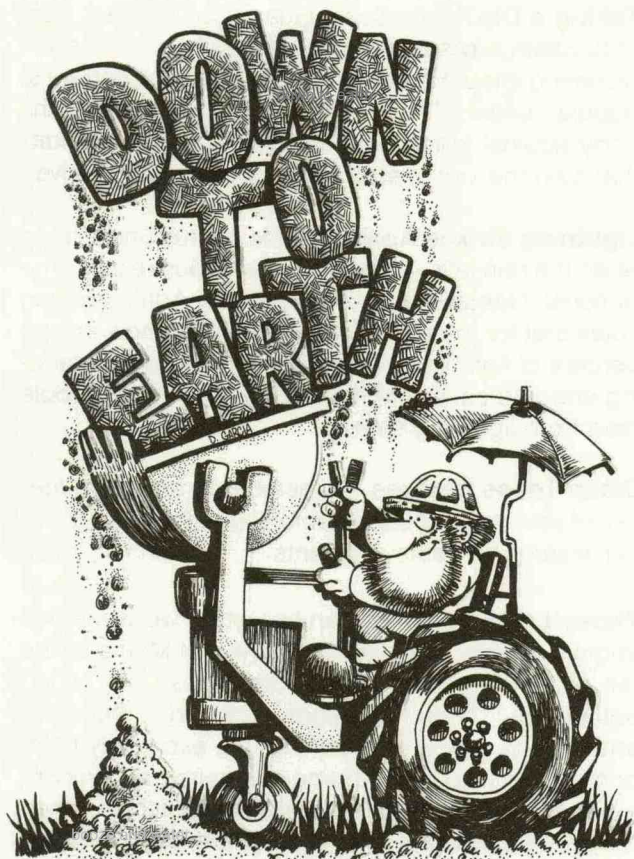
**Those Little Bees.** Remember when we were kids and we tried to play with bees and our Moms would tell us, "If you don't bother the bees, they won't bother you." Well, that might not be true. Bees are attracted to pretty, patterned shirts, especially floral prints. They also like perfume and hairspray. They're attracted to our food if we eat outdoors, and then they get aggravated if we shoo them away. They're always in the grass when we go barefoot; and they don't like it if we mow the lawn, pull weeds, and paint or clean buildings. If you react seriously to bee stings, maybe you should let them have their way.

**Boat Fires: What To Do.** Head the boat into the wind and slow down or stop. Put out a distress signal. If the motor catches fire, shut off the fuel supply. It's too late to read the instructions now—get the fire extinguisher! Don't delay getting into the water. Boats go fast.

**Not Another Headache.** If you're susceptible to vascular headaches, eating hot dogs, bacon, ham, salami, and other cured foods might give you a headache. Nitrates, which are used in the curing process, expand blood vessels, causing a vascular headache.

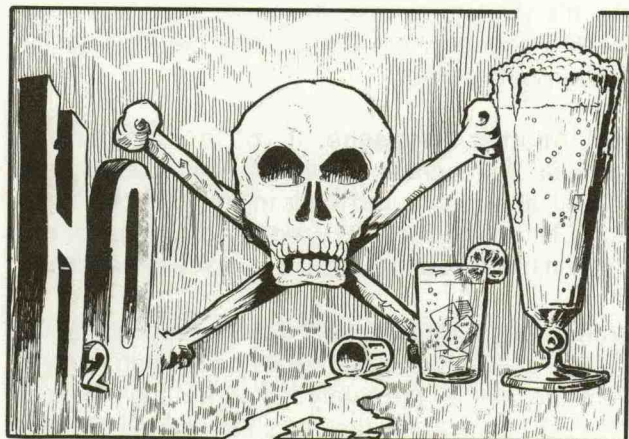
**Wanna Buy a Firecracker?** Take a good look at the stands selling fireworks. How concerned do you think they are for the safety features in the fireworks they sell? Look at the fireworks themselves. Do they seem well-manufactured and quality controlled? Maybe you don't really want to gamble your child's future on them.





## booze and water

Last month, we wrote how liquor and heat together can dehydrate you. But that's not all liquor can do to ruin your summer fun. When you combine



liquor with water, the results can be even worse than dehydration. For instance:

- After consuming quite a bit of alcohol, an airman and two friends drove to a small pond in an isolated area. After they got there, the airman ran off into the woods surrounding the pond. His friends called for him and tried to get him to leave several times. Eventually they gave up and left without him. About three days later, his body was found floating in the pond.
- Another airman went to a disco pool party. The party was at night, and the pool bottom had no lights. Before the airman went swimming, he drank for a while. Later that evening, another swimmer saw his body lying on the bottom. There were about 45 people in the pool and 2 life guards on duty when it happened. The airman's blood-alcohol test registered just over .10.
- A third airman was at the beach with friends when he consumed an excessive amount of alcohol. Against the advice of his friends, he went into the water after drinking. The last time his friends saw him alive, he was floating on an air mattress. Seven minutes later, another swimmer in the area found his body.

As these cases show, alcohol and water are as bad a combination as alcohol and gasoline. The fact is that when it's used to excess, alcohol doesn't go well with anything.

Another thing to notice is how hard it is to talk sense to people who have had too much to drink. The time to talk sense is before they drink too much. Once they're intoxicated you may have to get help to control them. If you call for help, you might ruin a friendship; but you might also save your friend's life.

## long hair and machinery

A maintenance worker in another command was moving parts from a powered roller conveyor line to an unpowered roller conveyor line. The worker's hair was about 30 inches long and hanging loose. When she leaned over the powdered line, her hair adhered to the heavy lubricant at the end of a roller. The hair began wrapping around the roller, which then pulled the rest of her hair in. A co-worker heard her screaming and switched off the conveyor, but by that time about one-third of her hair had been pulled out.

This worker had never been instructed by her supervisor to protect her hair from being caught in the rollers. The supervisor had never thought of the powered conveyor as machinery, so he hadn't con-



sidered the hair hazard. Of course, if we stop to think about it, we'll realize that anything with powered moving parts can be a hazard to long hair. Static electricity on machinery can actually attract the hair. A hairnet or similar protection is the only answer.

## a second chance

Three airmen were returning to their home station from a nearby base to which they had driven. On the way back they stopped at a convenience store and bought two six-packs of beer and four premixed cocktails. They continued down the road, drinking all but two of the beers. Then they stopped at a roadside tavern, where they shot pool and drank for two hours. The driver had at least four double-shot drinks while they were there.

They left the tavern and headed back down the road toward their home base. They stopped at a rest area about six miles from the tavern; they continued on. Five minutes later, they came up behind another car. The driver decided to pass it, and he swung out to the left. He turned the wheel too much, so he tried to correct back to the right. But when he did, he overcorrected; and the car ended up skidding out of control. It slid sideways off the road into a ditch. When the car hit the ditch the driver, who wasn't



wearing seatbelts, was thrown toward the passenger side. The passenger door opened, and he was halfway out the door when the car rolled over on the passenger's side. He died immediately.

Miraculously, the passengers were not even badly injured, although they hadn't fastened their seat belts. They were given a second chance by Providence. But that doesn't mean we'll all get second chances. The rest of us better use our heads and prevent our first time from being our last.

## a nuisance—or a lifesaver?

By Major William Scarboro  
Safety Officer, Selfridge ANGB, Michigan

"Seat belts are a nuisance. They're uncomfortable to wear, and they wrinkle your clothes. And those child restraints—it takes at least a minute to buckle the kids into them, plus the good ones cost money. I don't need the hassle or the expense."

Sound familiar? I used to think that way myself, but never again. A little boy named Chris changed my mind, and maybe his story will do the same for you.

Chris was a typical 2½-year-old—boundless energy and full of life as only a two-year-old can be. He was an only son and the object of all the love and attention a proud father could give. He and his dad were like two peas in a pod—always together.

On the way to the grocery store six blocks from home, something impossible happened. As they made a left turn onto a narrow residential street, Chris touched the passenger door and it flew open.



Chris fell partially out of the car, and his father was able to grab him by one foot.

While trying to pull Chris back into the car, he lost control of the car. The car hit a telephone pole and rolled onto its side, killing the little boy.

That night I lost my son in exactly the same way—holding onto his foot helplessly while he cried, "Help me, Daddy, help me!"

I've lost him a number of nights since then, awakening in a cold sweat, jumping from my bed, and running to his room, always to find him snug and safe in his bed. Thank God, nightmares aren't real. Imagine what it would be like if this were a reality you had to live with every day of your life. Scary thought, isn't it? Enough to change your mind about seat belts and child restraints? I hope so.

—Air Force News Service



# HOTEL/MOTEL FIRES

by Ms. Marty Diller

**S**ince July is the peak of vacation season and since many of you will be staying in hotels and motels, we thought we'd give you a brief rundown on how to determine if your temporary lodging is safe and what to do in a fire. The most important thing to remember is to keep cool; you can take that any way you want to.

## What to pack in your suitcase.

- A portable smoke alarm. Not all hotels and motels have a good detection system, so bring your own.
- Duct tape. Duct tape can be used to seal the cracks around doors and windows to keep smoke and fumes out during a fire. Also, if there's a hole around an air duct or pipe, you can stuff the hole with a pillow and tape the pillow in place.
- Flashlight. In a fire, you'll either be in the dark, or the area will be filled with smoke. You can use some light.

**What to look for in a place to stay.** When checking into a hotel or motel, ask the management these questions:

- How is a fire detected and how will I be notified? What does the fire alarm sound like? How is the

fire department notified? Is there a ground floor command post with voice communications to each floor and elevator? Is there a manual fire alarm and where is it?

- Are the employees trained to know what to do in a fire and is there a fire emergency plan? If there is a plan, ask to see it. Some hotels and motels have a plan on the back of the room entrance door, but always ask first.
- Are there fire doors and partitions on each floor to block the spread of fire and smoke to other floors?





Do elevators return to the ground floor or automatically lock to prevent people from using them?

- Is there an emergency lighting system? Do stairwells have an exhaust system to remove smoke?



- How would a fire be extinguished? Is there an automatic sprinkler system? Where's the closest fire extinguisher and how do I use it?

- When was the building last inspected, and if any violations were found, have they been corrected?

**What to do when you get to your room.** The whole family should be involved in the initial planning of what to do in case of a fire. Also plan where to meet outside in case you're separated. The safest place to be in a high-rise fire is probably your room. People have survived by sealing all cracks and keeping cool.

- Know your room. Know where the phone is and post the fire department, police department, and front desk numbers. Always call the fire department first if there's time. Don't rely on someone else to do it. Do the windows open? Are there any ledges or a balcony? If there's a balcony, can you jump to another balcony or lower yourself? Can you jump to the ground? Keep this in mind for jumping: If you're on the second floor, you could survive a jump if you clear the building when you jump. From the third floor, you have a 50-50 chance of survival; and above the third floor, don't jump—you won't make it. Always leave your key and flashlight in the same spot in the room, preferably the night stand, and

make sure everyone knows where it's going to be. Make sure you take the key with you if you leave the room because you might have to return to the room if the exits are blocked. Don't leave the door open. Check to see if the bathroom has an exhaust vent.

- Check the hall outside your room. Keep in mind that in a fire you will be on your knees, crawling.



Count the doors to the exit you'll use and remember whether you go right or left when leaving your room. Remember what side of the hall the exit is on and if anything is in your path, like an ice machine.

- Know where the exits are. Make sure you know where at least two exits are. Open the exit doors to make sure they aren't locked and that nothing is in the way. If they are being held open, shut them. Know if the doors automatically close and if they can be opened in both directions. Some fire doors can't be opened from the stairway; so once you're in the stairway, you can't return to your room. Take a trip all the way to the bottom. Does the stairway lead you to an exit outside the building? If it does, is anything blocking the exit inside or outside? If it doesn't lead you to the outside of the building, where does it take you? Some stairways lead you to the lobby. After you've found the way down, do the same in reverse and go to the top. In a fire, always try to go down first because fire and smoke go up. But if the way down is blocked with fire and smoke, then go up. If you have to go up, you might be better off back in your room.



# HOTEL/MOTEL FIRES

## What to do in a fire.

- Drop to the floor. Save your eyes and lungs and keep close to the floor. Grab the key and your flashlight. Go to the door. If it's hot, don't open it, stay in your room. If it's not hot, open it and check the hallway, but be prepared to slam the door if the hall is filled with smoke. Remember that smoke is the killer. Don't take chances.

- If you decide to leave the room, take the key with you and close the door behind you. Crawl toward the exit and stay close to the wall. Remember your plan?

- Never use an elevator.

- When you reach the stairway, go down and hang on to the handrail. People will be panicked and might knock you down when they come running down the stairs. If you run into smoke, go back up.



Decide whether to go back to your room, if you can, or go all the way to the top. If you go to the roof, prop open the door—this is the only door you leave open—to vent smoke. Don't get locked out. Go to the windward side of the roof and wait to be rescued. If the roof door won't open, stay there. That's a safer place to be than going back down.

- If you don't leave your room or if you decide to return to your room, open a window to vent the smoke. Don't break the window. If there's fire or smoke outside, you may have to close it. Call the fire department. Turn off the heater or air conditioner. Turn on the bathroom vent and fill the tub with water. Wet towels and sheets and put them around the cracks of the door or tape the cracks with your duct tape. If you have time, put your mattress in front of the door and block it with the dresser. Throw water on the door and walls—everything—keep everything wet and cool. Put a wet towel around your nose and mouth as a filter and swing a wet sheet around the room to help remove some of the smoke. Put a distress signal out, like a towel, so firefighters will know they need to get to you. If there is a fire outside the window, pull down the curtains and anything else that will burn and start throwing water on the window.

Keep these things in mind: Most people die from smoke rather than flames. Fire moves upward first, then to the sides. Smoke irritates your eyes. You won't be able to keep them open. If you wear contact lenses, take them out. Close all doors behind you to help prevent fire and smoke from spreading. Always check out a commotion; it might not be a party. And don't hesitate to evacuate immediately. If your clothing catches on fire, fall down and roll over and over. Don't run, that will only fan the flames. Stay low or on your knees close to the floor. Heat and toxic gases rise. Even if there's no smoke, stay close to the floor, because there's probably carbon monoxide. Never use an elevator during a fire. Once you're out of the building, don't go back in for anything.

Of course, no one is completely safe from fire. But being prepared for what to expect and knowing what to do will certainly increase your chances in you should encounter one. We hope your planning ahead insures that fire doesn't ruin your trip. Have a nice vacation.





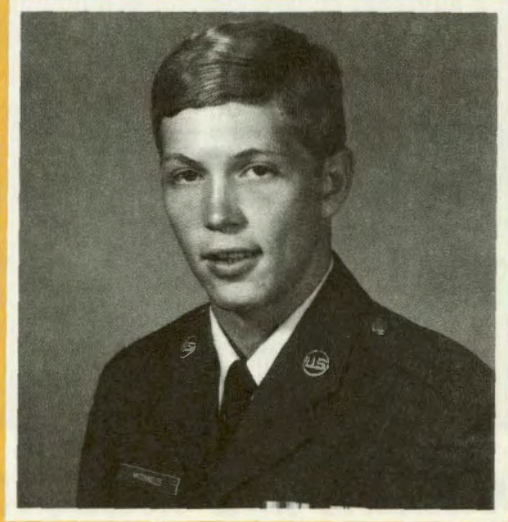
# TAC Safety Awards

## *Crew Chief Safety Award*

**S**SGT MARK W. MCCONNELEE is this month's recipient of the Tactical Air Command Crew Chief Safety Award. He is an F-16 crew chief in the 430th Aircraft Maintenance Unit, 474th Aircraft Generation Squadron, 474th Tactical Fighter Wing, Nellis Air Force, Nevada.

Sergeant McConnelee's aircraft has been the high flyer in his unit 6 out of the last 11 months. His airplane has accumulated 15 percent more flying hours than any other F-16 in the unit and has not had a single emergency in flight nor any air aborts. Sergeant McConnelee has received more than 45 quality assurance evaluations and has been rated excellent on every one of them. He strictly adheres to all technical data and is always alert for any safety violations or hazards.

Once, while launching his aircraft, Sergeant McConnelee saw flames coming out of the jet fuel starter of a nearby F-16. He ran to help his fellow crew chief and extinguished the fire while the other crew chief helped the pilot get out of the airplane. On several occasions during inclement weather and high winds, Sergeant McConnelee stopped by the unit while off duty to



**SSgt Mark W. McConnelee**

help make sure that all airplanes had ground safety gear installed.

Sergeant McConnelee's dedication to duty and his positive attitude have earned him the Tactical Air Command Crew Chief Safety Award.

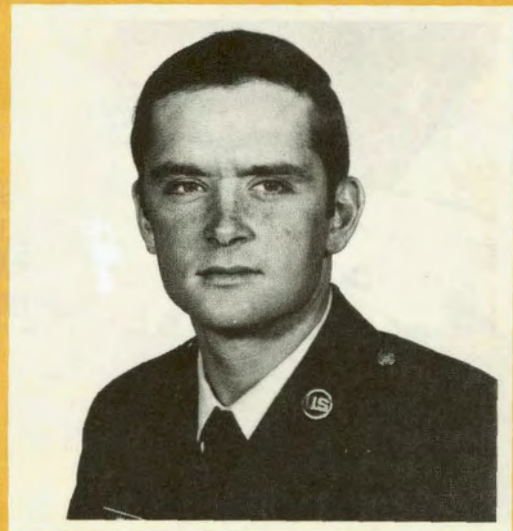
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## *Individual Safety Award*

**S**RA EDWARD G. MCGARRY, 479th Component Repair Squadron, 479th Tactical Training Wing, Holloman Air Force Base, New Mexico, is this month's winner of the Tactical Air Command Individual Safety Award.

As the assistant motorcycle safety monitor for the squadron, Airman McGarry established procedures for conducting and monitoring motorcycle and equipment inspections, maintaining records, and giving briefings. He also assisted in investigating motorcycle accidents.

To improve his riding ability and safety consciousness, Airman McGarry volunteered to attend the first Motorcycle Safety Foundation course offered in the area. Because of his excellent performance in the course, he was selected as a motorcycle instructor for the base. As a result, not one person who has completed his motorcycle rider course has been involved in an accident. He later assumed full responsibility for the squadron program. To maintain proficiency and gain additional knowledge he participated in several motorcycle skill competitions in the local area. He was awarded four safety certificates



**SrA Edward G. McGarry**

from the state of New Mexico and three from the Motorcycle Safety Foundation.

Airman McGarry is competent, very enthusiastic, and conscious of the need for more motorcycle safety awareness. He has earned the Tactical Air Command Individual Safety Award.



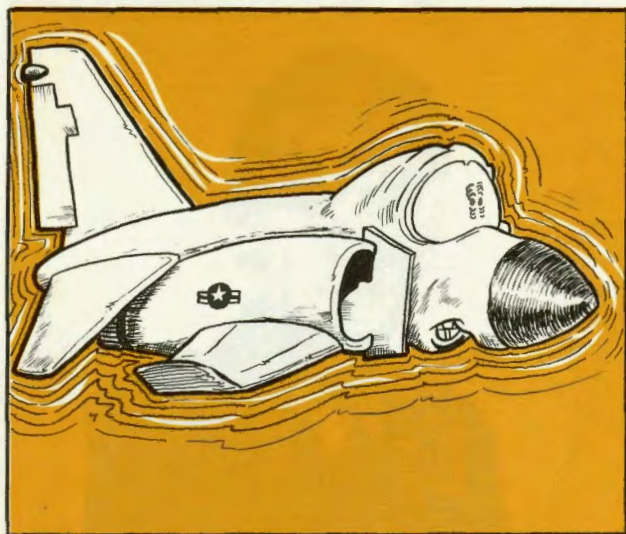
# chock talk

chock talk: Incidents and incidentals with a maintenance slant.

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

## F-4 RUNAWAY RAMPS

At about 7,000 feet, an F-4 pilot pushed his throttles up into afterburner. Passing 400 knots, the airplane began to shake, and the aircrew heard a loud



howl. The weapon systems operator (WSO) in the back seat discovered that both engine variramps were fully extended. Ten seconds later, the Master Caution and Inlet Duct Temp Hi lights came on. The Master Caution wouldn't reset. The WSO checked that all circuit breakers were in, and he was looking

in the checklist for the location of the ramp control circuit breakers when the ramps retracted themselves. The WSO then pulled the circuit breakers so the ramps wouldn't extend again, and the aircrew returned home and landed without problems. The Master Caution and Duct Temp Hi lights stayed on until the airplane was shut down in the chocks.

It didn't take long for troubleshooters to find the source of the ramp cycling: the central air data computer (CADC) test plug wasn't fully seated. The plug is in the rear cockpit beneath the left canopy sill. Because it wasn't seated correctly, a circuit between the electric resistance temperature transmitter and the CADC was lost, causing the CADC to assume that the temperature was over 710 degrees. That turned on the Duct Temp Hi light and the Master Caution light. The Master Caution won't reset when the CADC senses a continuous high temperature. The CADC also provides the total temperature input to the control amplifier that positions the variramps. When the test plug is loose, the ramps may move randomly.

Six days earlier, the airplane had undergone a locally directed inspection of the variramps, which included stenciling the position stripes. The CADC test plug was used to extend the variramps using ground electrical and hydraulic power. One crew chief was given the job of performing the work on several aircraft. Before he began, he asked a seven-level instrument specialist to show him how to extend the variramps. The specialist demonstrated extending the variramps, but he did so without using the tech data. So the crew chief followed the specialist's lead: instead of getting the tech data, the crew chief began inspecting airplanes without it. When he came to this airplane, he extended the variramps and then left the airplane to get some paint. He was met by the airplane's dedicated crew chief when he got back. The dedicated crew chief told him that the CADC test plug was reinstalled during the cockpit FOD check. The first crew chief, who was doing the variramp stenciling, finished his work, looked at the CADC test plug, and then left.

If the crew chief had been following the tech data, he would have physically checked that the plug was properly reinstalled. But he didn't; so, several days later, the plug worked loose during flight. Looking back on it, the whole thing seems to have begun with the specialist setting a bad example for the crew chief, who also should have known better. Everyone should know by now that we're supposed to use tech data. We do know that—don't we?



## F-16 INDIGESTION

While preflighting the cockpit of his F-16, a pilot found the radar-electrical-optics (REO) cover still installed. He gave the cover to his crew chief, who was climbing down the ladder. The crew chief laid the cover on the shelf of the engine intake while he removed the ladder. After putting the ladder down out of the way, the crew chief put on his headset and began going through engine-starting procedures with the pilot. When the engine started, the REO cover vibrated off the intake shelf and was swallowed by the engine.



Neither the pilot nor the crew chief noticed what had happened. The pilot continued the mission. When the airplane returned after flying and shut down in the chocks, the crew chief began buttoning up the cockpit. That's when he realized the REO cover was missing; and, with a sinking feeling, he remembered where he had left it. He immediately called for an intake inspection. The engine fan and core modules were badly damaged and had to be replaced.

The shelf above the F-16 intake seems like a real handy place to set something when your hands are full. Many airplanes have nooks and crannies around the intake where you could be tempted to lay something down. But our experience shows that eventually those things you lay down end up in the engine. The only answer is to put them down in a safe place away from the airplane, even if it takes an extra minute.

## TAC ATTACK

## MISSING BRACKETS CAUSE BLEED-AIR LEAK

About fifteen minutes after takeoff, the F-4 pilot noticed that the Master Caution and Right Generator lights were lit. Then he saw a dim fire warning light on the right side. The right oil pressure was reading 80 psi. When the pilot pulled the right throttle to idle, he felt a slight binding. He shut down the right engine, but the fire light remained dimly lit. The pilot declared an emergency and diverted to a nearby air base. When he lowered the gear and flaps, the fire light came on bright. The aircrew landed the airplane without further problems.



Maintenance investigators found the source of the problem in the right engine's bleed-air manifold. A weld failed in the duct assembly. The reason the duct failed is that it wasn't supported properly. The brackets that are mounted on the compressor's rear frame to support the duct assembly at the 3 and 9 o'clock positions simply weren't there.

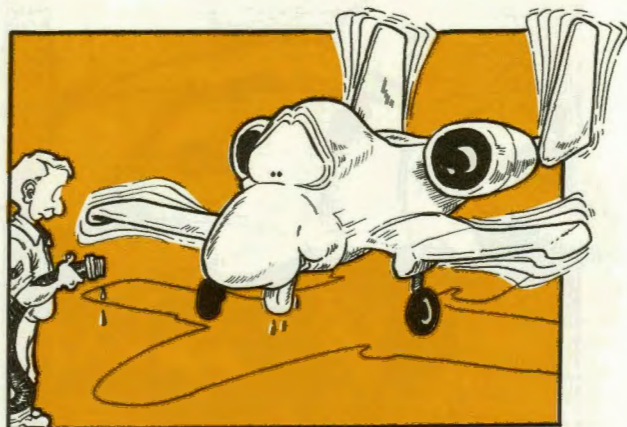
When the engine was built up, the engine shop failed to install the brackets. Quality controllers gave the engine a shakedown after the buildup, but they too overlooked the missing hardware. Without support the weld eventually failed and allowed the superhot bleed air to escape into areas where it could do damage. However, in this case the damage was limited because the aircrew shut down the engine and landed promptly. Bleed-air leaks don't always come out so well.



# CHOCK TALK

## A-10 HEARTBURN

An A-10 returned from its first sortie and the crew chief called for a fuel truck to refuel the airplane. The crew chief and the R-5 operator set up for refueling. They connected the ground wires, hooked up the service hose to the single-point refueling connector, and opened the valve on the single-point nozzle. The R-5 operator engaged the power takeoff (PTO), which switches the power from the truck differential to the pump; but he couldn't pull out the auxiliary throttle on the control panel, so the fuel wouldn't transfer.



The R-5 operator told the crew chief that they had a PTO interlock problem, and he knew how to fix it. He asked the crew chief to stand by the control panel and pull the auxiliary throttle out on command. The R-5 operator climbed in the cab, opened the access door to the engine, pressed the PTO interlock solenoid, and shouted to the crew chief to pull the throttle. The crew chief, who wasn't trained to operate the control panel, pulled the auxiliary throttle all the way out.

The pump motor sped up enough to cause the service hose to jump several feet in the air. The auxiliary throttle was moved to idle several seconds later. From then on, the refueling went normally.

Later that afternoon, the airplane taxied out for takeoff. At the end-of-runway inspection, one of the

team members found heavy white soot and powder on the fuel vent mast. The pilot aborted the mission, and the airplane was impounded.

Maintenance investigators tore into the fuel system. They found singed foam in all four fuel cells. The heaviest damage was in the right and left main tanks. In the left tank the foam was singed as far down as 27 inches from the top of the tank. The pilot valve had soot and burned foam around it.

When the crew chief had pulled the auxiliary throttle all the way out, the fuel surged into the almost empty fuel tanks at 50-55 psi. In the A-10, fuel pressure above 20 psi can generate enough static electricity to cause a flash fire in the fuel system. Although the crew chief and R-5 operator weren't aware of it, that's what happened to them.

Whenever we work around a defect in our equipment instead of getting it fixed, we're likely to have something go wrong. And whenever we mess around with switches we haven't been trained to operate, our odds of having a mishap skyrocket. In this case the R-5 operator was working around a problem that should have been repaired, and the crew chief was moving switches he hadn't been trained for. What happened shouldn't be any surprise.

## ENGINE DAMAGE DESERVES ANOTHER LOOK

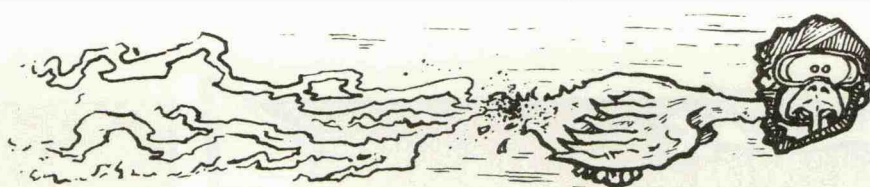
The F-4 hangar queen flew a functional check flight (FCF). After the FCF, the crew chief found three nicked blades in the first stage of the right engine compressor. The crew chief told the expediter, who called for an engine specialist. The engine specialist looked at the blades and decided that the damage was within limits. The specialist did not do an intake inspection; he only checked the blades the crew chief had discovered.

The next day, the crew chief again inspected the intakes. He found more damaged blades in stages 1 to 4. The engine was pulled from the airplane, and damaged compressor or stator blades were found in all stages of the engine. The cause was not discovered; it appeared to be a hard, round, metallic object.

The question is, What kind of maintenance practice is it to give compressor blade damage a cursory glance and call it OK? Since the crew chief found more damage the next day, the engine specialist could have found it when he was called. Engine damage shouldn't be dismissed so lightly. The airplane might have flown in that condition.



# TAC TALLY



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

TAC		
MAY	THRU MAY	
	1982	1981
5	17	16
1	9	10
4	15	18
4	13	13

ANG		
MAY	THRU MAY	
	1982	1981
1	4	3
0	2	2
2	4	0
2	3	0

AFR		
MAY	THRU MAY	
	1982	1981
0	0	0
0	0	0
0	0	0
0	0	0

## TAC's TOP 5 thru MAY '82



TAC FTR/RECCE	
class A mishap-free months	
44	1 TFW
31	49 TFW
30	355 TTW
21	347 TFW
18	354 TFW

TAC AIR DEFENSE	
class A mishap-free months	
112	57 FIS
65	5 FIS
62	48 FIS
21	318 FIS
12	87 FIS

TAC-GAINED FTR/RECCE		
class A mishap-free months		
121	188 TFG	(ANG)
113	138 TFG	(ANG)
112	917 TFG	(AFR)
109	116 TFW	(ANG)
99	434 TFW	(AFR)

TAC-GAINED AIR DEFENSE	
class A mishap-free months	
99	102 FIW
95	177 FIG
61	125 FIG
44	119 FIG & 142 FIG
34	144 FIW

TAC/GAINED Other Units		
class A mishap-free months		
154	182 TASG	(ANG)
147	193 ECG	(ANG)
142	26 ADS	
138	110 TASG	(ANG)
134	USAFTAWC	

## CLASS A MISHAP COMPARISON RATE

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

TAC	1982	7.8	5.7	5.9	5.2	5.9							
	1981	4.0	3.0	3.2	5.6	6.0							
ANG	1982	0.0	2.7	3.2	3.4	3.6							
	1981	9.3	4.8	4.6	3.3	2.6							
AFR	1982	0.0	0.0	0.0	0.0	0.0							
	1981	0.0	0.0	0.0	0.0	0.0							

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



FLEAGLE



KABLAM!

