

# TAC ATTACK

JUNE 1967

...broke the Herky's back

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... page 4

HARDISON



for efficient tactical air power

# TAC ATTACK

JUNE 1967  
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TACTICAL AIR COMMAND

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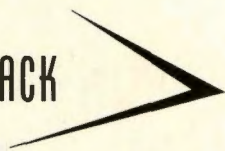
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Angle of ATTACK



## TAKE A LONG LOOK

**W**e are engaged in a very demanding business involving complex, high performance equipment. And our mission encompasses far more than merely operating that equipment. In performing our mission, we subordinate the mechanics of simply operating the airplane. We must make it fly through specific maneuvers... often close to the limit of its operational envelope. This is what makes our job demanding. This is why tactical flying is called a high-risk profession.

By the first of May this year, TAC had averaged one aircraft accident every 3.2 days. Over half of these accidents were caused by error, oversight, or inattention on the part of the operators... pilots, student pilots, instructor pilots.

But unfortunately, these pilot-factor accidents have not been the kind you expect in a tactical air environment. Only ten percent of them occurred when the pilot was preoccupied with tactical maneuvering. Over thirty percent occurred in the landing pattern. An additional seven percent were gear-up landings. Ten percent were mid-air collisions. And in another ten percent of these pilot-factor accidents, the instructor allowed his student to go too far.

It is time for each of us...pilots, instructors, and supervisors...to step back and take a good look at ourselves. Is our preparation for, and performance of, our duties lacking the touch of professional skill that guarantees a successful mission...from preflight to postflight?

H. B. SMITH, Colonel, USAF  
Asst Chief of Safety



## the straw that broke the herky's back

of his mind made him uneasy. Had he left something out... a step in the check list?

He remembered watching the gages when Co-pilot reversed after landing. Torque, RPM, and fuel flow on all four had been normal. Torque was building past 2000 pounds when he last looked.

Then he remembered what it was! That trouble during engine runup before they left home base the day before. Number One had caught on the low pitch stop and wouldn't go into reverse. They had a prop man check it. When they ran it up to full power and brought it back again, the trouble was gone. After running the prop through another time or two, they decided it was okay.

The prop man had said something about... "If that thing hangs up on landing, it can give you serious trouble." The aircraft commander nodded that he understood. He gave a thumbs-up and they taxied out and took off with the flight.

When they landed at the deployment base that afternoon, none of them thought about writing up the prop trouble. It hadn't bothered them again. As a matter of fact, none of them thought about it at all. They just landed, parked, and went about their business.

The pattern of this accident is almost classic in the way faults and problems piled up one after another. None of the problems alone would have caused this fully qualified crew to lose control... and lose the bird.

The sequence started when the AC and co-pilot decided who would make the landing. They overlooked the important step of deciding who would handle what in the cockpit during the landing rollout. Since they hadn't briefed it, they didn't think of nose wheel steering during the emergency.

Co-pilot should have been alerted to the danger in tightening up the pattern when he found himself slow on initial. His low airspeed on downwind and final was a direct result. And, of course, his tight pattern brought him too close to the airplane ahead. That at least aggravated the turbulence problem on final. And the turbulence and severe control problems on final set the stage for confusion, anxiety, and task saturation during the landing. Neither pilot recognized that their left outboard prop was still in forward thrust.

When experts tore down number one prop after the accident, they confirmed that it had been in forward thrust. It was locked at 30 to 35 degrees of pitch. They also found that the pitchlock regulator had been set out of limits. This allowed the prop to pitchlock at a lower RPM than normal and provide forward thrust while the other three engines were giving reverse thrust. The prop had been installed on the aircraft four days before the accident. It had flown only three hours.

It had malfunctioned less than 24 hours before the accident. But the crew didn't think the trouble important enough to have it



checked before they flew the bird again.

Although they encountered a series of unusual conditions, they were not committed to an accident until the prop failed to reverse. The co-pilot had the bird under control at touchdown. He could have handled the rollout successfully and remained far enough behind the bird ahead to stay out of trouble.

Then his aircraft started to swerve to the right...

That was the last straw...

The one that broke the Herky's back. ➤



**Y**ou remember ole Murph. Everybody has met him. He was in your squadron once, maybe even on your crew. You ran into him again one time in Europe. He was in Transient Alert then. You saw him again out west somewhere, working in Maintenance.

Murph has had quite a few jobs. He's worked in the tower, on the line, in Base Ops, and in Approach Control.

Murph was a flight engineer for awhile. He's been a pilot, too.

Sure, you remember him now! Murph is the guy who can do anything wrong.

Oh, some things are pretty hard to foul up, but Murph will find a way. If a thing can be done wrong, Murph will find out how to do it that way. You can bet on that.

Funny thing though, he seldom gets the blame for what goes' wrong. Somebody else seems to always take the rap for Murph.

Pilots make awfully good scapegoats for Murph. They are responsible for almost everything. And the really odd part of it is, a lot of them go blissfully along and let Murph lead them astray. He's got a million tricks. Murph really gets to them!

Of course, they make it easy by not checking up on him.

The last time I heard about Murphy, he was in PACAF. He was in Transient Alert again. This time he tried to lead one of our troops down a dark taxiway at about 40 knots. Then Murph tried to wave him through a clearance that was ten feet narrower than the wings. As a last resort, Murph fueled the aircraft. And he left out 4000 pounds of much needed fuel. Luckily our troop was alert. He didn't fall for any of this.

I hear Ole Murph has gone PCS again. I didn't hear where he went.

So watch out for him wherever you go. You'll meet him again somewhere, sometime ...

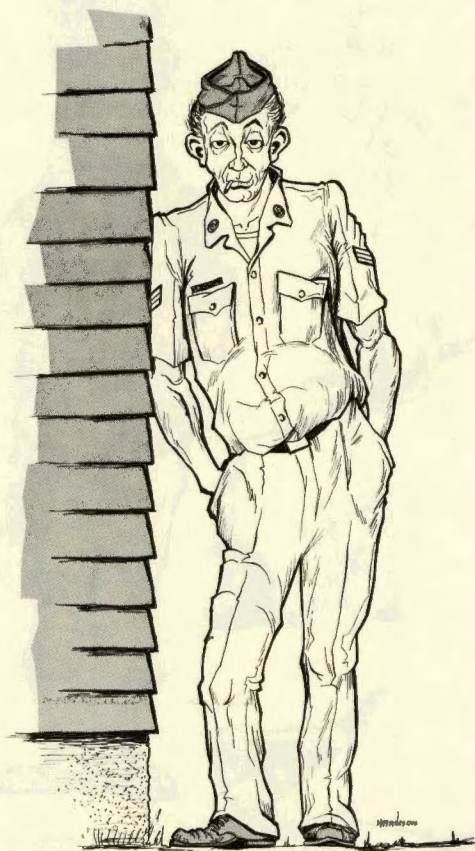
Maybe soon!

UNHAPPINESS IS: Being Murphy's next victim.

# Murphy went PCS

...he's everywhere !

he's everywhere !



by Captain Jack H. Smith  
64th Troop Carrier Wing



# it's really up to you



**N**ot too many years ago men applying for a job in the lumber trade were judged by their hands. No one cared about qualifications listed neatly on an application form. The prospective employee simply held up his hands. The hiring agent judged the man's experience by the number of missing fingers.

The system was brief but effective. It also reflected the working conditions of the day. In those days a man had to take care of himself if he wanted to live and do well. There was no workman's compensation, hospitalization, medicare, or things of that nature.

In fact, an injured worker was fortunate if he even received first aid treatment. When he was injured, a worker became a burden to himself and his family. Replacement? Workers were plentiful. Every ship that docked in this country carried many men eager to work. Since little skill was required for most jobs, any strong body would do quite nicely.

Really, it was a cruel, cruel world.

The thoughtful and prudent worker developed safe attitudes and habits in self defense. He knew that if he didn't look out for his



by Major Billie B. McLeod  
HQ TAC (OSF)

own well-being no one else would. He was responsible for himself and that was that.

There were no people who made their living trying to prevent accidents. No catchy slogans, watchful supervisors, or eye-filling posters to remind the worker to be careful. No manager would give up productive man-hours in the interest of promoting industrial safety.

Yes, in years gone by you had to be a rugged individualist. You had to look out for yourself. You had to be your own safety expert.

As our country expanded, communications improved, and the industrial complex grew, accidents gained publicity. People began to see the unnecessary waste and suffering accidents caused. Gradually management, unions, and humanitarian organizations recognized the need to prevent accidents. Social reformers and far-sighted business managers encouraged industry to accept more responsibility for their employees.

At about the same time, accident-associated dollar losses were growing. Skills were becoming important, skilled workers harder to find. An expensive machine idled for lack of

a qualified operator stimulated a lot of thought in the mahogany-paneled offices. Accident prevention as a management concept came into being.

Progress was slow. But the concept was gradually recognized as a vital function, essential to every industrial organization. Executives learned that a safe shop was a productive shop. They found that a well lighted, well ventilated, wholesome environment increased worker morale. Finally, they realized that safety and efficiency were really different sides of the same coin.

Today "Safety" is a permanent staff function in many corporations. It is part of every Air Force commander's staff. We have come a long way since the beginning of the industrial revolution. Yet as individuals we seem to have lost interest in promoting our own welfare!

Now management must constantly strive to get people to follow common-sense rules for their own protection. Now there is no shortage of protective devices, guards, and such. Lifesaving and accident-preventing devices are plentiful.

Volumes have been written on the subject. Hundreds of people

are directly engaged in preventing accidental loss. Highway, airway, working, playing...you name it, and you can bet there are specialists researching ways to prevent accidents in that particular activity.

Now the situation has reversed. In the beginning only the worker was concerned about safety. It was a personal thing. If he didn't look out for himself no one else would. Today management, government...all organizations...are greatly concerned about accidents. But the individual they are trying to protect seems complacent. He seems without interest in his own security.

How do you save a person from himself? What happened to the rugged individualist? How can you stimulate individual interest in accident prevention? These are questions that each of us should ask ourselves.

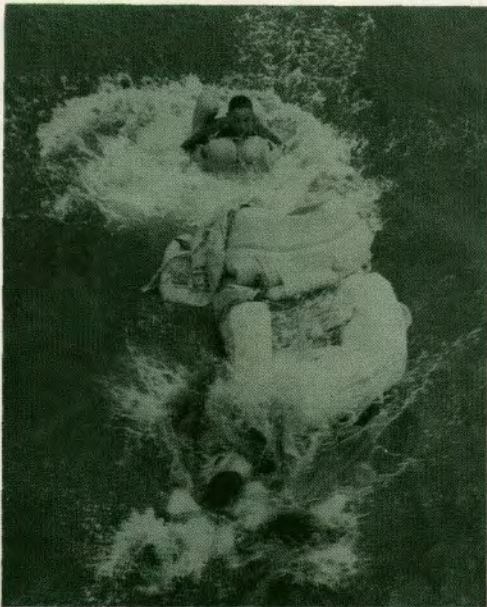
Before you answer, remember that the Air Force has spared neither cost nor effort to provide you the safest possible work environment. Have you honestly done as much?

In the final analysis your personal security and well-being are really up to you!



by Col R. J. Broughton, Jr.  
HQ TAC (DOOS)

# THE SUNTANNED DOLPHIN



**O**n a warm, sunny Florida morning, the TAC Sea Survival School reopened at Homestead Air Force Base, teaching the concepts of survival and rescue at sea.

We watched with interest the attitude of students, and how it changed during the week of training ... from horrified anticipation of a week of terror, to a confident determination of "Gad, I CAN survive!"

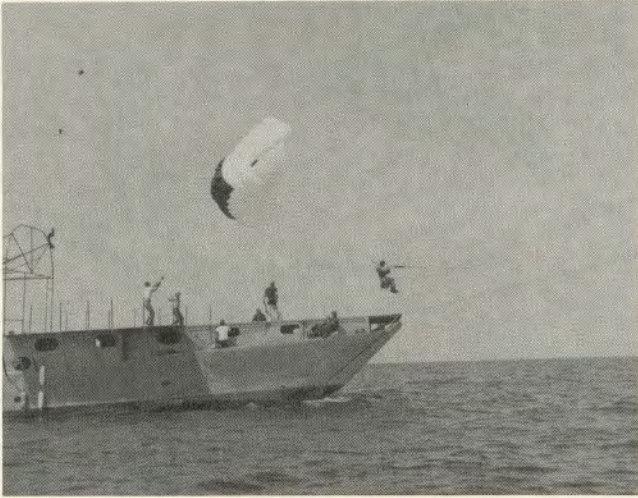
The first shock to most students comes with the orders. Almost everyone has heard tales of torture in the cold waters off Japan, or the muddy Chesapeake. This starts efforts toward avoidance, or resistance to going at all. Those whose closest association with deep water has been the family bathtub, develop more startling reactions.

The second shock comes when they arrive in Florida, where even in January sea and air temperatures are reasonable. It suddenly becomes clear that this is not a school of survival. It is about survival. It counters the old adage that "you must suffer to learn."

So we have a school tailored to teaching, with minimum pain, no panic, and a week of entertaining education.

The first two days are devoted to classroom and





beach demonstrations, just to get everyone in the mood. This is where the student learns what he is about to learn.

Wednesday is filled with all manner of interesting activities:

A slide down a cable from a 60-foot tower, ending in a splash in the water. Impact approximates a parachute landing. But it's under the watchful eye of an instructor, and only a few feet from terra firma. This teaches Lesson Number One. No matter how hard you try, you can't sink!

Other lessons?

- A short swim under a floating parachute canopy, just to prove that it can be done.

- A refreshing interlude with one, six, and twenty-man rafts, and how to get aboard.

- Experience in helicopter hoists, and how they work.

- A water ski excursion without skis. It proves that you don't have to be built like a ski to act like one.

Interspersed is real-life experience with flares, smoke devices, dye marker, shark repellent, and the fighter pilot's favorite "ship," the one-man dinghy. To add zest to the program, there is an open sea ex-

ursion in its six-man cousin. And the highlight of an actual helicopter rescue at sea, which proves how simple it really is.

Want to para-sail?

Take a two-week, all expenses paid (by you), vacation on the Cote d'Azur. Only the rich can afford it.

But for those who sit on ejection seats in the course of daily living, there is a special treat at the TAC Sea Survival School. Here, absolutely free, you can enjoy the thrills of land and sea para-sailing. It makes real sport of survival.

Does the week sound rough? It might seem so, but look at all the sugar coating. The best rescue training available anywhere, so easy to take that Air Force Nurses regularly attend, and satisfactorily complete the course.

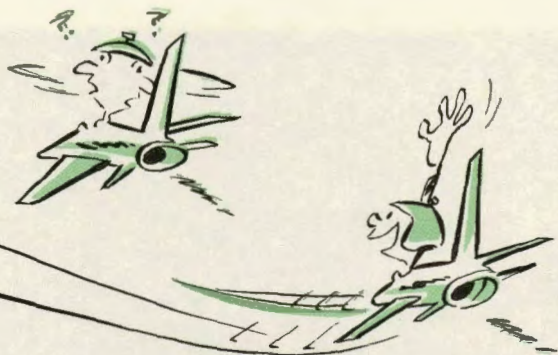
So avoid that last shock, that of being trapped into a water survival situation, and wondering what to do about it. We can't arrange to have a survival instructor accompany you in the real thing, but we can help eliminate that lost and letdown feeling.

Run, don't walk, to the closest personnel office and sign up today. Who knows, tomorrow may be too late!



# Sideslip

Sideslip



Sideslip characteristics are normally good. However, a critical limit exists beyond which the maneuver may progress into uncontrolled flight. The out of control condition is severe.

## nothing new under the moon

**S**ideslip and Ned Nieuguye felt they'd gained a lot from the conference. A good rundown on new ideas and procedures. And a good look at equipment they would see in the future.

They were both ready to leave by Friday afternoon. But the closing session had dragged. It was almost dark when they took off. And there was no way to stretch their T-bird all the way home in one flight.

The weatherman had said something about a warm front and some low stratus. It hadn't sounded very serious. Odd, Sideslip thought, this time of year you'd expect thunderstorms. They did not change their plan.

"We'll draw a straight line home, Ned baby," Sideslip had told his partner. "Just find the base closest to the point where we're down to 200 gallons. That'll assure

us of a short jump home. No point in working any longer Saturday morning than we have to."

They had been straight and level for a long time. Ned had been holding the stick since level-off. That was all he had been doing . . . holding the stick . . .

"Most uninteresting, boring kind of flying I can think of," Ned mused aloud into his mask, more to break the long silence than anything else.

"Oh, here, Ned," Sideslip suddenly came alive and shook the stick. "I'll take it for a while."

"Be my guest." Ned shrugged down in the seat. He half-consciously noted the DME rolling down past ten miles and the VOR needle beginning to waver. His mind drifted to the chores that would be waiting for him when he got home. Suddenly Sideslip had the bird in a steep bank.

Recovering from the surprise, Ned looked down at his knee-board. Maybe Sideslip hadn't drawn a straight line after all. It was too dark to see his flight plan card, but Ned remembered they would turn to get to the approach fix.

Sideslip rolled out of the turn with a flourish . . . right on the new heading.

"Okay, Ned," he announced with a smile in his voice. "You have it."

"What was all that about, Slipper?" Ned grumbled. "Don't you want to fly the thing?"

"Not any more. That turn was the most exciting thing we'll do the whole trip. This plain old vanilla-flavored straight-and-level doesn't do much for an old fighter type like me."

"Well, just for that, I don't want it," Ned could play the game, too. "Your turn."



Sideslip wasn't going to let this junior birdman outdo him. He'd handle the letdown and landing alone. "You just sit back there and watch, Ned."

Center gave them permission to leave the channel for a couple of minutes, and Sideslip dialed in the frequency for Metro. They answered right away.

It wasn't too good! Three hundred feet and 7/8 of a mile in light rain and fog!

Sideslip couldn't remember the exact GCA minimums when Ned raised the question. They had hurriedly looked it up in the flight planning room, but now he wasn't sure. Better get out the Supplement and make sure.

He deftly switched hands on the stick, reached down beside the seat, and found the map case. As usual, it was hard to miss . . . jammed so full that it was fully extended from the cockpit wall. After he felt all the books and charts, he decided he couldn't tell one from another without looking.

Okay, he thought . . . a careful look at the instruments. Everything's steady. Now . . . look! There it is! As he turned his head back to the gages, he stabbed for the book.

When his hand got there, it was the same as before. Just a lot of papers. They all felt the same!

Sideslip decided it wasn't worth losing control of the airplane to carry out his threat.

"Ahh . . . Ned . . ." sheepishly . . . "would you mind holding the pole for a second?"

Ned decided to be big about it. He shook the stick without saying anything.

"It could be 300 and one here,

I don't remember." Sideslip explained. "Have the book out in just a second . . ."

His arm was blocking his view of the map case. He loosened his shoulder straps and leaned all the way forward. Holding his flashlight in his left hand and shining it back from in front of the seat, he could see the map case clearly. Now, if he could get his right hand down there while he had his eye on the book . . . without bumping the stick with his left shoulder!

"Sideslip One . . ." Center came on the radio. "Approach Control advises surveillance radar has lost power. Radar vectors unavailable. You are cleared present position direct the initial approach fix for TACAN/ILS Runway 32 . . . precision radar monitor available on final."

Sideslip dropped the hard-won IFR Supplement on the cockpit floor and reached for the letdown book. He had tucked it under his left leg before takeoff. At least he wouldn't have to fight with the map case again. Ned had started a turn to the left.

"Good guess!" Sideslip exclaimed after he found the right page. "Roll out right here . . . we'll get a gander at the radial we're on." He balanced the letdown book on his right knee and tried to aim the white floodlight at it from the canopy rail.

When Center switched them to Approach Control, the controller came on with new weather. Visibility was up to two miles. He glanced at the ILS minimums on the letdown plate. No more worry about that!

"I'll take the airplane while you get your book open, Ned."

Sideslip offered. "Get yourself all set up . . . ILS course in the window . . . all that. You fly us down final. I'll take it when we break out."

"You know, Slipper?" Ned sounded unhappy. "I've always been real proud of the letdown book holder in the back seat of this bird . . . right smack in front of your face. But it sure doesn't do much good at night, does it?"

"You can say that again," Sideslip acknowledged. "Just balance it on your knee like in any other airplane . . . see how much vertigo you can get when you crank your head down to look at it."

Ned had started down final when GCA came on the air.

"Sideslip One . . . GCA, Radar contact. On glide slope, on centerline. Radar indicates a large flock of birds in the approach zone . . . one mile from the runway . . . will advise."

Sideslip started automatically for his visor. Then he remembered that it was night.

"What do you suppose we should do about that?" Ned laughed. "I'll pull down my visor if you'll fly the airplane. I just tried, and I can't see a damn thing with it down . . . even with the lights full bright!"

Sideslip took over when they broke out of the overcast.

"See any of those birds, Slipper?"

"No, Ned. But I was just thinking . . . all that fancy new gear they spent three days telling us about. Did you hear anyone say when we'll get clear visors? Or lighted letdown book holders?"

"Not a word."



# CHOCK TALK



... incidents and incidentals with a maintenance slant.

## circling crew chief

The engine conditioning team finished their runup. The team chief was taxiing their Provider back to the ramp. Approaching what he thought was his parking place, he turned left. His assistant, riding the right seat, pointed out the correct parking spot. It was up ahead of them.

The team chief decided to make it a 360 and kept turning. But before he completed the circle, his right wing tip punched a parked Gooney Bird right in the eye. It took four man-hours to fix the wrinkled wing tip and 15 to replace the Gooney's broken windshield.

The investigator called it personnel error. The Gooney Bird, a pretty fancy dancer herself, had watched the circling error. She asked that the team chief be restricted to square dancing.

## double trouble

The F-105 pilot experienced rapid stick movements and had the stick freeze on him a couple of times during flight. When he told his story to the maintenance folks, they decided to impound the bird until they found the trouble.

When they dug into the flight control rigging, they found a quarter-inch drill bit and a spacer in the aft section of the stick well. Marks on the bit showed it had lodged between the linkage and the well floor. Unhappily, this brand of forgotten object keeps turning up. It has killed people in the past... it will probably kill others in the future.

But when the investigators continued checking, they found tension on the control cables out of tolerance. Rudder cable tension was 40 pounds low. The stabilizer cable was 25 pounds low, and aileron cable tension was low.

The two conditions together... forgotten object and cable tension... presented the pilot with a lot more trouble than he should have to face.

## instinctive preflight?

He had been working around airplanes for 13 years. Ten of them on the F-84. So when he found he had no brakes as he pulled out of the parking place, the crew chief's reaction was instinctive. But the brakes didn't work after he pulled the emergency brake handle, either. He shut down the engine, but was unable to stop the bird. It traveled across the taxi lane, bounced off a Follow-Me truck, pivoted, and nosed into a flight line maintenance building.

The investigation didn't take long. The day before, a hydraulic specialist had pulled the landing gear circuit breaker. This disables the normal braking system and doesn't allow the emergency brake accumulator to recharge.

The crew chief had not reset the circuit breaker before he started to taxi to the runup stand.

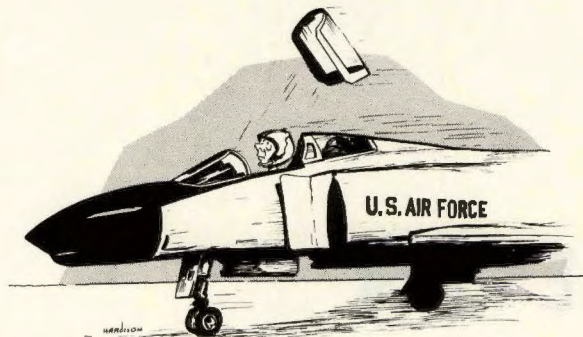
## freewheeling prop

The Dollar-nineteen pilot checked his spacing. He was number three in a night low level trail formation. Forty-five minutes out, number two engine dropped 20 pounds of torque and recovered fast. The crew watched the torquemeter waver a couple of pounds trying to hold its cruise reading of 90 pounds. It held briefly, wavering around the 90-pound cruise setting, then slowly started unwinding to 60 pounds. The pilot saw oil quantity start to drop on Number Two after the torque loss. Convinced that the engine was about to quit, he called it a night and headed home.

It held out until he landed. He made a postflight runup to compare readings with their pre-takeoff check. Number Two had a higher mag drop, a lower torque increase in spark advance, and a 50 to 75 rpm rise on the idle mixture check.

Maintenance troops got to the sick engine the following morning, tried an ignition analyzer check at





## by the numbers

1900 rpm. The firing patterns looked normal so they pushed the throttle toward full power. Around 2600 rpm things came unglued ... a big backfire! Ignition patterns dropped off the analyzer. Engine RPM fell to zero. Torque hit zero. Oil pressure did the same!

Everything quit except the prop. It kept spinning with all engine instruments saying it shouldn't.

When the prop stopped, the runup crew checked for a frozen engine. They found that sudden seizure of the sick engine had failed the prop's planetary gear system. The prop was freewheeling, but it stayed on the shaft.

Almost as an afterthought, they checked the oil screen. The results were a foregone conclusion ... lots of metal particles.

Perhaps the aircrew had not adequately briefed maintenance. Perhaps the engine specialists were trying to prove the aircrew 781 write-up was wrong. Whatever happened, the runup crew could have avoided the massive damage of a sudden seizure ... and the possibility of a freewheeling prop spinning across the ramp ... by going ahead with the messy but important job of pulling screens before the runup.

## tweaked tail

The certified crew chief demonstrated Gooney Bird taxi procedures to his uncertified assistant on their way to an unused revetment for an engine run. He emphasized the tricky tail wheel operation on the old girl as they traveled the length of the ramp. The wind was blowing into the revetment so he taxied in and swung around. His technique was good, but his memory was bad. He forgot how far back the tail went and hit a concrete fence post 14 feet behind the paved revetment. The Gooney's tail feathers required 60 manhours to repair.

## TAC ATTACK

Shortly after touchdown from a normal mission, the F-4 aircraft commander saw his canopy up and leave. His canopy switch had been in the Close position, but investigators later found the canopy latching mechanism was unlocked and the actuating rod was retracted. The actuator rod shear pin had sheared.

They pulled the canopy pressure regulator and bench checked it. During the first 30 minutes it operated normally. But after that the pressure went to 2500 pounds and held there. Then they took a look at the canopy normal system relief valve. It was the wrong one! Instead of the 1280-pound valve that is supposed to be there, they found one rated at 3500 pounds.

The two valves look the same. From the outside, only the part numbers are different. But with the wrong valve installed, full system pressure was applied to the close side of the actuator piston when the regulator failed. In time the shear pin went ... and with it the canopy.

As is often the case, the Murphied valves didn't present a problem until another component failed.

## overlooked

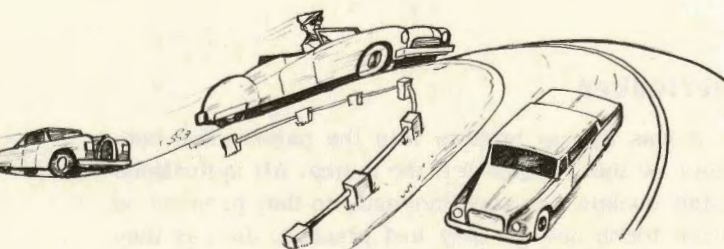
It was during letdown into the pattern that both pilots of the F-100F felt the thump. All indications in the cockpit remained normal, so they pressed on to the touch and go they had planned. Just as they became airborne again, Mobile called and said their saddle back was missing.

It didn't take long after they were in the chocks for the maintenance people to decide that the latches had not been secured. It had happened during the quick turn-around before that flight. Even the flight chief had been rushed. He overlooked the inspection he should have made ... where he would have caught the latches the crew chief overlooked.

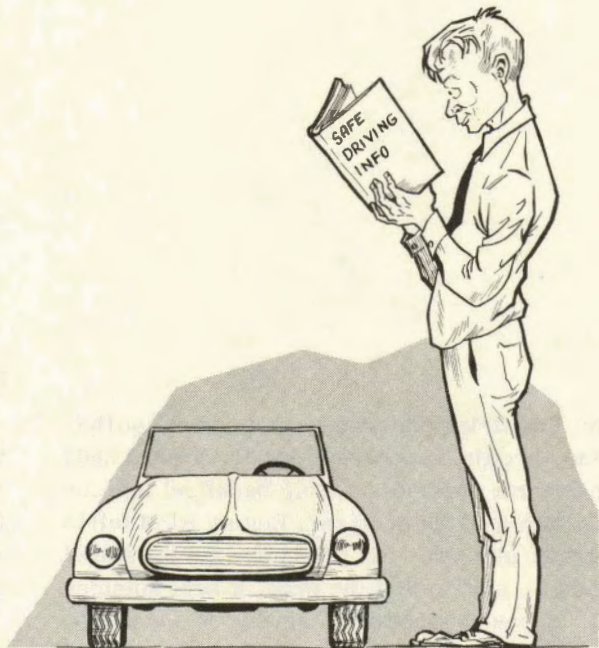


# SEVEN RULES FOR SAFE DRIVING

by TSgt Richard C. Robeen  
HQ TAC (OSG)



**BLEND WITH THE TRAFFIC.** Adjust your speed to the flow. Don't be the one to break the pattern. Make the changes you must without disturbing others. Catch their eyes with plenty of signaling.



**MASTER YOUR MACHINE.** Know how to control your car under all conditions. Learn how quickly you can change direction... how fast you can stop.



**STEER BETWEEN THE OBSTACLES.** Avoid fixing your attention on the hazards ahead. Aim for the hole between them. You need space to allow time for decision, reaction, and stopping. At 30 miles an hour, that space is nine feet wide and 220 feet long.

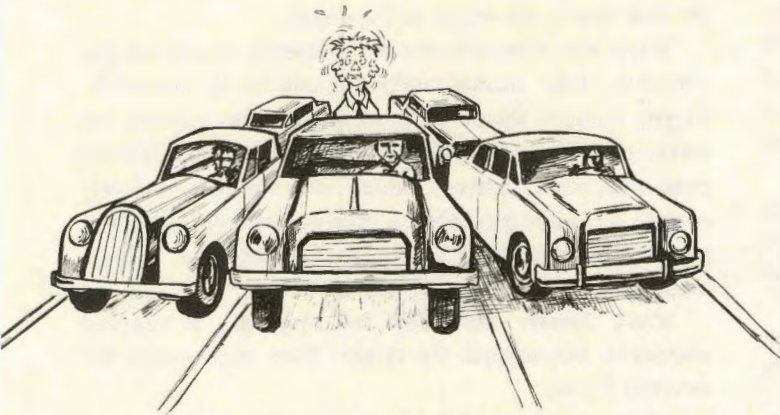




**ANTICIPATE WHAT'S COMING.** Look up, not down. Look ahead of the car in front of you. Try to imagine every situation you might encounter in the next few seconds.



**CATCH THEIR EYES.** Before you assume pedestrians or other drivers will stay clear of you, be sure they see you. You can tell by their actions. Never count on them seeing you first.



**KEEP YOUR EYES MOVING.** You are driving five vehicles: your own, the one ahead, one on each side, and the one behind. Tunnel vision cuts out three of them. Catch the first sign of danger by shifting your glance around. Stay alert.



**LEAVE YOURSELF AN OUT** Always have an escape route in mind. Don't be trapped by depending on the other driver, getting boxed in by other cars, or by a dirty windshield. When the jaws of the trap start to close ... back off!



A

# 2ND LOOK

...at some recent unnecessary losses



Preparing for a night ground attack training mission, the F-100F pilot ran through preflight and after-start checks smoothly ... no discrepancies. Before he took the runway he stirred the stick around the cockpit. His flight controls felt free and proper. But as he reached nose-lift-off speed on take-off, he found that his control stick would not move aft.

He was at 160 knots when he aborted. The drag chute worked when he pulled it and he lowered the hook early. He engaged the BAK-12 barrier at about 120 knots and slowed to a comfortable stop.

After the bird stopped, the pilot tried to pull the stick aft of the trim-for-takeoff position. It wouldn't budge. Both utility and flight control hydraulic pressures were steady at 3000 pounds. He told his student in the back seat to check that nothing was lodged behind the stick.

He trimmed forward and then pressed the trim-for-takeoff button. The stick came back to takeoff trim. Now he could move the stick back, but it felt spongy and lighter than normal. When he released pressure, it returned to neutral in short jerks.

He trimmed forward and re-trimmed for takeoff

several times. The stick feel and centering characteristics improved each time. Finally, just before he shut down, the stick felt normal.

When the pilot briefed maintenance troops on his problem, they immediately impounded the aircraft. Flight control specialists went over the system but were unable to pinpoint the trouble. Stick wells, push-pull rods, control cables, bob weights, and bell cranks ... none revealed a clue to the problem. They even connected pitot pressure to simulate takeoff airspeed, but still found nothing wrong.

They finally test flew the airplane. It reacted normally throughout the flight. They released it for normal flying.

This pilot thought he was doing the right thing in trying to learn as much as he could about his problem before he turned the bird over to maintenance. But after a second look, his impromptu troubleshooting appears to have actually complicated the issue. Had he left the malfunctioning system alone ... turned it over to the fixers while it was still malfunctioning, they would have had a much better chance of isolating the trouble ... and fixing it.





The F-101 pilot had just climbed out and leveled at 35,000 feet when he saw the transformer-rectifier light come on. He checked and found that the other rectifier was still working. It didn't present any immediate problem, but he decided to abort his mission and return to home base. No point in arriving at his destination with a bent bird.

After canceling IFR, he let down, and drove toward home until he raised the command post on the radio. He would mill around the area long enough to burn off some fuel. There was a stiff breeze blowing across the runway at home. And he saw no need to practice heavy-weight landings under adverse conditions.

If his planning worked out he would have his fuel down to a reasonable figure just about sunset. And with luck, the wind would die down by then.

He had been turning his Voodoo left for a couple of minutes when the trouble started. His camera compartment overheat light came on. The temperature gage was difficult to see, and while he was figuring that out, his right generator-out light came on. He tried to reset the generator. It wouldn't reset, so he turned it off. He went back to the camera compartment overheat condition, turning the temperature control to manual full cold.

He was wondering if all this had some relation to the transformer-rectifier problem, when his right engine overheat light started blinking at him. He didn't wait. He shut down the right engine. The left engine would give him plenty of power to get home and land.

He noticed the forward boost pump light come on. After that the tailhook-down light came on. Then the aileron trim went full right. It took a lot of effort to just hold the airplane level.

The pilot started turning electrical equipment off. He had not turned off the left generator or radio, but when he tried to tell Tower about his problems, he found he could not transmit. The radio was dead.

He placed IFF to emergency.

That was when all the rest of the lights on the warning panel flashed on. Then they went off. And he felt explosions under him. Every time an explosion

occurred, the airplane would roll 20 or 30 degrees. The right overheat light had gone out now. And when he pushed to test, it would not come on. The explosions were getting louder. He shut down the left engine and stowed his knee board.

When he released the stick to grasp the seat handle, the bird rolled violently to the right. The ejection was successful. It was only 90 seconds since the camera compartment light came on.

Witnesses on the ground saw the Voodoo streaming fire before it hit.

Experts examining the wreckage found that hot 16th stage compressor air had burned through a bulk head and ruptured a fuel line. A Marman clamp had been incorrectly installed, allowing the 640-degree air to escape. The work was done by an unsupervised apprentice-level mechanic the day before the accident.

On the surface, this appears to be simply maintenance error. The man who did the work was unaware of the requirements for specific torque values when tightening clamps of this nature. He didn't understand the dangers of overstressing the parts he tightened. He used improper tools. He didn't even know where the tool crib was.

But a second look at this amazing narrative makes you think about the role of training and supervision. The man who inspected the work was not aware that the mechanic had experienced difficulty. He made a visual inspection, but the improperly installed clamp was not visible to him. He did not insure that an entry in the forms would require a functional check of the system. Only an operational check could have revealed the trouble before flight.

Training will always be with us. There are always new men in the outfit that must be trained. And it's only natural to expect uninformed, incomplete, or faulty work from a man who is still learning the job. That's why we must watch and guide a man's work while he's in the learning stage.

And that's why we certainly must be thorough and conscientious about inspections.



# LOCKED BRAKES ?

by Lt Col Carl E. Pearson  
HQ TAC (OSP)

...did the crosswind set up this one ?

The C-97 pilot in the right seat touched down smoothly left main first. The IP was monitoring closely. When the right main settled to the runway, he eased the nose gear down and reversed inboards for a normal rollout. The wind was gusting to 17 knots from 30 degrees off his right wing.

The tall-tailed bird nosed right and the pilot applied left rudder to straighten out. He was still too fast for brakes. He soon used up his full rudder travel and the bird still wanted to leave the right side of the runway. At 60 knots he pushed the inboard throttles up to forward idle and called for the IP to take over. The IP stopped on the runway and shut down all four.

When the emergency-on-the-runway committee convened, they found both right main gear tires blown. They checked skid marks. The right inboard tire was sliding shortly after touchdown. It blew out in 800 feet. Then the right outboard picked up the slide. It blew 200 feet later! The fire chief didn't think the right brake drum was excessively hot...

Maintenance troops checked the running clearance on the brakes about 20 minutes after landing. They found the clearance exceeded the minimum and the brakes were okay.

There had been no water on the takeoff runway, but the investigators suspected a frozen right brake. It must have been caused by the Dash-One-required brake application before gear retraction after takeoff. They suggested a

critical review of the need for applying brakes and removing the requirement if it's no longer necessary. Braking wheels after takeoff wasn't done in earlier years on the C-97.

The investigator did not come up with a primary cause. Nor did he explore the possibility that the pilot had inadvertently applied brakes ... while that right wing was still trying to fly.

In a weathervaning bird, many pilots of all experience levels have been embarrassed by an unintentional opposite-side brake application, while they applied full rudder. The long-reaching leg-push to get full travel on one side forces the opposite brake pedal back into a size 12 brogan that doesn't fold back out of the way fast enough. Sometimes the foot and boot combination isn't flexible enough to avoid an unintended application of light brake pressure.

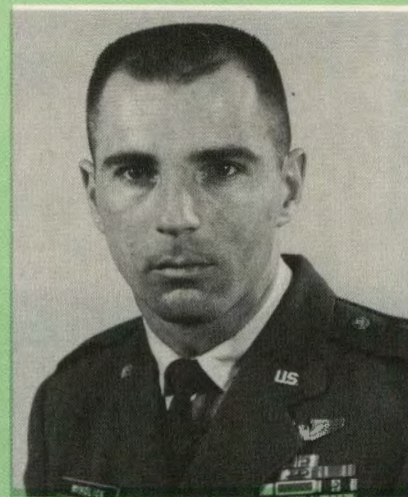
And a light brake pressure is all that's needed on the side of the bird that's still trying to fly. The wheel locks and sets up a vicious cycle: full rudder attempting to correct for weathervaning on the downwind side and unintentional brake pressure on the upwind side winning the struggle as airspeed bleeds off, reducing aerodynamic control.

How do you avoid it? Proper seat positioning for full rudder travel without having to shift, or half-stand in your seat. Stay on the rudder bars and don't let your toes work up to the brake pedals until you're ready for brakes. Smaller feet help a lot!

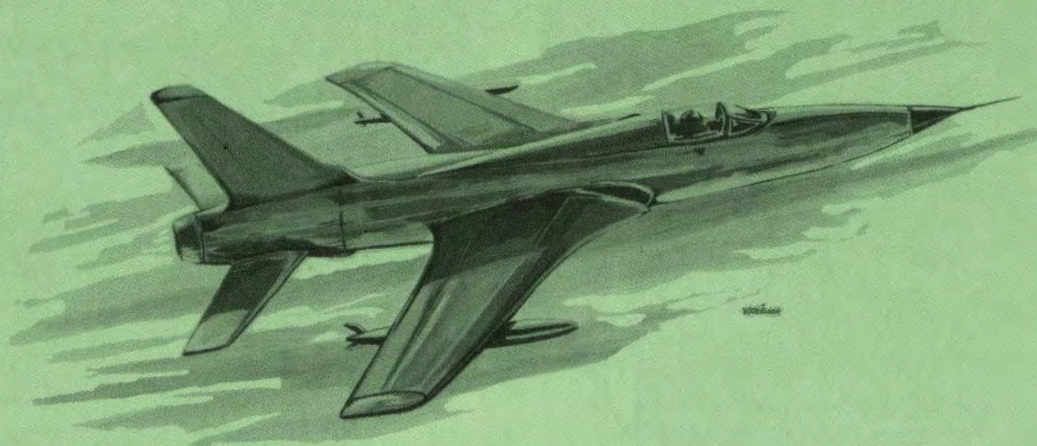


TACTICAL AIR COMMAND

PILOT  
OF  
DISTINCTION



Captain James I. Miholick



Captain James I. Miholick, 563 Tactical Fighter Squadron, McConnell AFB, has been selected as a Tactical Air Command Pilot of Distinction.

In a four-G turn after a practice strafing run in an F-105 aircraft, Captain Miholick found his control stick frozen in a nose-up position. He recovered using only rudder, aileron, and throttle, and started a climb. He could climb at 290 knots with 97 percent power. More power caused pitchup and stall. With less power he lost airspeed and could not hold altitude. At 10,000 feet he checked control in landing configuration. When he slowed to 250 knots the nose pitched down until he lowered the landing gear. When he extended full trailing

edge flaps at 200 knots, the aircraft pitched up. With the flaps at 50 percent he found he could hold a 1000-foot rate of descent. On final approach he controlled pitch with power; descent by moving flaps; and airspeed with power, flaps, and rudder. To maintain control as airspeed decreased, he had to increase power and retract some flaps. He reversed the procedure when airspeed increased. His landing was completely successful.

Captain Miholick's calm demonstration of outstanding airmanship in this critical situation readily qualifies him as a Tactical Air Command Pilot of Distinction.







# CLASSICS

## FROM THE CLASSROOM

by Mr. Harold Dunn  
reprinted from BOEING MAGAZINE

**D**id you know that the first lady aviator was Kitty Hawk? That Roger Wilco invented the “language of communication?” Or that one of the chief by-products of the aviation industry is going places?

This information has been gleaned from test papers and essays during the 11 years that I’ve taught elementary school youngsters.

Kitty Hawk and Roger Wilco may have their admirers but Baron Von Richthofen, the German ace of World War I, has also come in for his share of adulation. A 10-year-old girl summed up her feelings like this: “In a uniform or not, Baron Von Richthofen was a dashing figure.”

If history repeats itself, it usually does it with some unexpected twists when grade-school pupils tell the story:

“Spinning jennies were flying jennies that did not work.”

“People talked about flying in balloons for centuries. Finally there was enough hot air to get them off the ground.”

QUESTION: On his first flight, how long was Wilbur Wright in the air?

ANSWER: I’m not sure. Five feet something with his shoes on.

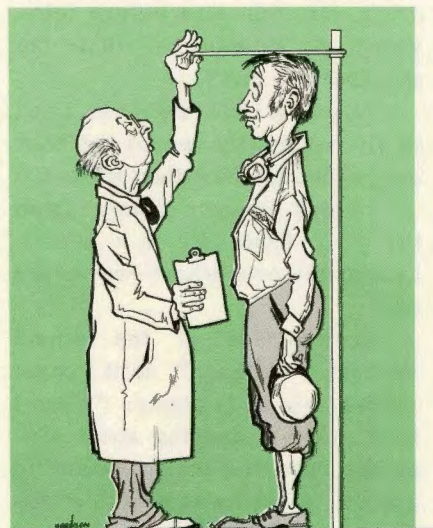
One of the fringe benefits of being an elementary school teacher is the possibility that the next paper I correct will contain a wrong answer that is twice as witty and delightful as the right one. When members of the grade school set turn their attention to men notable in aeronautics, youngsterisms seem to come as thick as chalkdust. Three examples:

“Euclid thought out how to make geometry help people to fly. He was born in the 300s and died in the 200s. That is another thing he thought out how to do. He thought

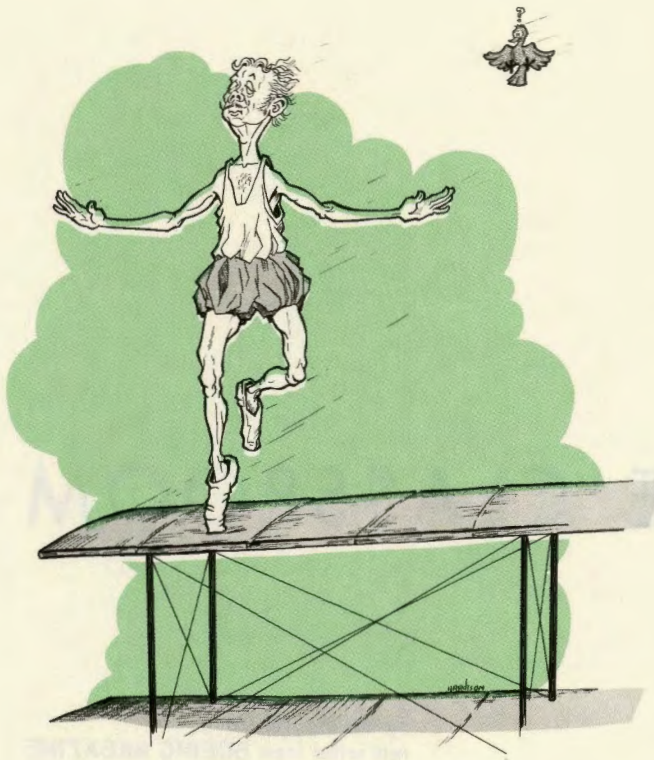
out how to do it by using B.C.s.”

“Charles Lindbergh is the most famous person in flying history and so are the Wright Brothers.”

“The Wright Brothers made their first flight in 1903. 1903 was really in the 20nd. century but







everybody was behind the times in those days.”

The elementary school youngster’s mind is a vast storehouse of information . . . half true, half false and wholly delightful. Sometimes he isn’t wrong at all. It’s just the way he puts it:

“During the Twenties, people started walking on airplane wings and things like that. I know it is crazy but this was before television or anything so what else was there to do?”

“Back in 1924, eight men tried to fly around the world but they only ended up where they started.”

“Floyd Bennett comes from the year 1926. He is a famous aviator few people have ever heard of.”

Ever heard of the word “pecally?” I hadn’t until I came across this in a paper: “When I first started studying about airplanes, pecally things began to happen. First I was heightened by their vast hugeness. By and by I

put on my thinker and thought how important they really are. I then heaved a sigh at how it would be fun visiting at where they are made.”

Much of the juvenalia that I’ve collected through the years has been devoted to comments about Charles Lindbergh’s historic first solo flight over the Atlantic. Here are three of my favorites:

“Charles Lindbergh was the first to fly to Paris. He did it by the airplane method.”

“When they asked him if he would like to fly to Paris, he rolled his eyes and flashed his teeth and said Sure.”

“A straight line is the shortest distance between two points unless you are going with Lindbergh to Paris. Things are different there.”

In commenting on the duties of the navigator, a girl who claimed she was one of aviation’s “starchest supports” wrote: “The navigator figures out the

latitude and longitude. Latitude tells him where he is and longitude tells him how long he can stay there.”

Her best friend once concluded: “The three main crewmen on a plane are the pilot, navigator and percolator.”

If any of these definitions have caused Webster to turn over in his grave, he would have to do it with a smile. Here’s what I mean:

“Drone is a spare name for when people cannot think how to say pilotless airplane.”

“When anybody says plane, what he is saying depends on whether he is saying it to a pilot or a carpenter.”

“I know what a sextant is but I had rather not say.”

“A visa is a passport permitting an airplane to leave the country. For round trips you need a visa versa.”

One chap absorbed the information regarding the many uses for airplanes in our modern world,





but his skepticism showed: "How many uses they have for airplanes these days is more for saying than believing."

Three years later his younger sister wrote: "The number of aircraft in the world today is an absurdly large fact of a number."

Ramjets have certainly come in for their share of comments recently. The remarks have proved to be unexpected, unconventional and undeniably true:

"Until it is decided whether ramjets are rockets or jets, we must continue to call them ramjets."

"The way ramjets work, as I understand it, is not very well understood."

"In ramjets the air rushes out when the fuel is ignited. So would anybody."

A couple of years ago there was a tiny moppet in my class who had a delightful way of expressing her thoughts. Here's how she summed up her feelings: "From

now on I will put both gladness and wonder in my same thought about airplanes."

More than one eager young scholar has started out with a discussion of air travel and ended up in outer space. The following astronomical observations are fresh from the minds of four fourth graders:

"The North Star is, as a matter of fact, almost straight north. This is quite a coincidence."

"Our Mother Earth has small poles and a large equator because of the tremendous speed as she hurdles through the space. Since we are along for the ride, we too tend to be flat at our poles and round at our equators."

"Some people can tell what time it is by looking at the sun but I have never been able to make out the numbers."

"Through the years people have guessed that Venus might be inhabited by women, dragons,

or other strange creatures."

No one looks to the future as eagerly as youngsters do. Last year I received these two predictions about future air travel:

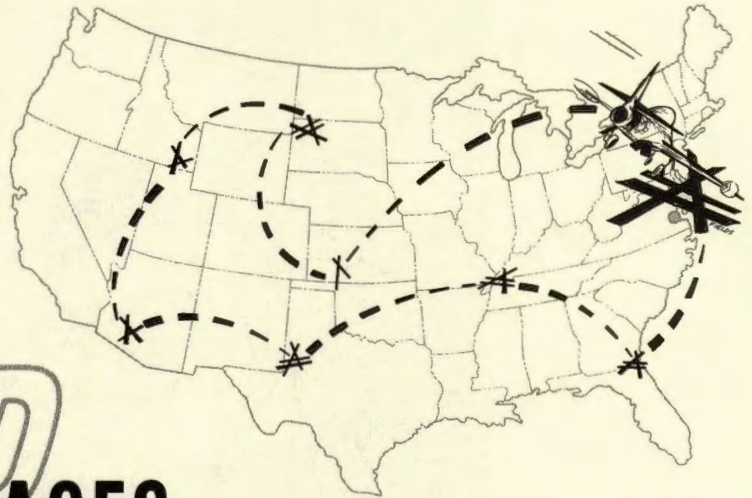
"Thanks to what we are learning from aviation, we should soon be able to look forward to having ceilings made out of fog."

"So far planes have only been able to fly in circles of no more than 360 degrees. This could be the next big breakthrough in air travel."

*Harold Dunn has taught school in Ballwin, Missouri, for seven years. Before that he taught in Gallup, New Mexico, and Jefferson City, Missouri. During that time he read a lot of themes written by grade school children. In them he found some of the most creative writing done in America today. He collected portions of those themes that deal with aviation for the editor of BOEING MAGAZINE, who generously permitted us to reprint them here.*



# SURVEYS OF PLACES



In the course of our safety survey trips around the command, we often pick up stories that serve as lessons to prevent accidents. Talking about picking up things, we recently heard of a man who was badly burned while he was picking up souvenirs on an air-to-ground gunnery range. He had heard that there were parachutes out there just for the taking. The chutes turned out to be flare chutes that had been used during Night Owl practice. And, of course, they were still attached to the flare cannisters.

When our friend saw all the cannisters scattered about the range, he couldn't decide which one to take first. Glancing about, he found one that looked hardly used... in fact, the chute hadn't even come out of the can! He picked it up with a jerk. The chute came out!

When the flare ignited, he realized he was playing with fire.

The dud flare came to life with the bright hot fire of phosphorous and magnesium. The souvenir-picker was badly burned.

We learned two additional lessons from this one. Explosive Ordnance Disposal people had not been given enough time to properly clear the range. A little more coordination between EOD and Operations scheduling would have helped a lot. And a number of the flare cans were falling close to the range tower. The people working there were actually exposed to direct hits! Maybe we should all take a look at flare drop patterns under varying wind conditions.

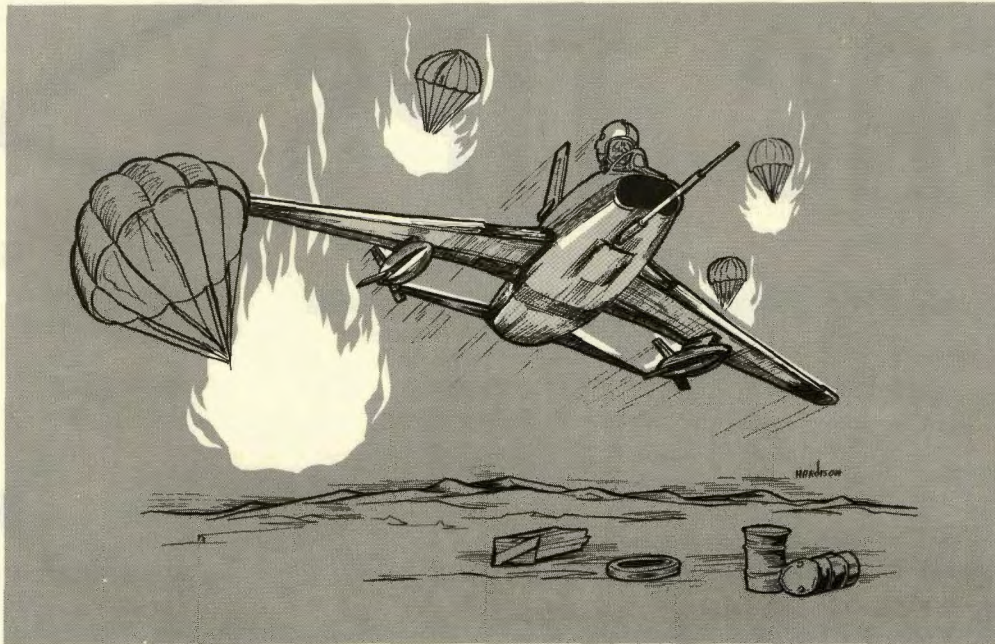
But back to the souvenir-picker. This is a continuing problem. Particularly on our uncontrolled ranges out in the desert. Fences are costly and security guards are not required by regulation. Sometimes the best we can do is to post warning signs that unmistakably tell trespassers

what they may expect to tangle with.

After hearing about this problem, we decided to check deeper into gunnery range procedures. We joined the Range Officer for a look at the Night Owl operations. The first flight in the pattern consisted of four shooters and one flare ship. The flight of four was in a left-hand pattern at 8000 feet. And the flare ship was also turning left, but it was inside and below the shooters. It was at about 4000 feet.

You guessed it! Things were pretty busy! Many of the students, with less than 100 hours in the bird, found themselves looking for the target, looking for the flare ship, worrying about the birds in front and behind them in the pattern. They also had to worry about switch and sight settings, sight picture, and wind drift. In addition to all that, they had to





worry about avoiding the chutes and flares.

Busy? I'll say!

There were a lot of birds in that small patch of sky. And there was a big chance of a mid-air. Proper spacing becomes an important must in any gunnery pattern ... it's doubly important at night! Strict attention to the required calls and instructions you'll find in your 51-series manuals will do a lot to help prevent a disaster.

Egress training remains a subject of special interest on our surveys. We've had more than our share of bad luck with escape systems. We don't want a single fatality as a result of incomplete egress training. TAC now requires that all F-4 crewmembers pull the two ejection handles during their FTD training. You'll be less likely to make that fatal mistake once you've experienced the pull necessary to jettison

the canopy and fire the seat.

Here's a fatal mistake that happened during one of our surveys. It comes under the heading of ... Seat Belts Installed, But Not Used ... A couple of airmen were out on the town. It was late and they possibly drank a little too much. The driver tried to negotiate a bend in the road. He skidded from left to right for a distance of over 200 feet. The car then fishtailed. It reversed course and hit an embankment. The door flew open. The passenger sailed 135 feet through the air and landed in the opposite lane of traffic. The driver went through the windshield.

Score ... Two dead. Question ... How many more to go?

Now for the bouquets:

On a recent trip to MacDill AFB, we came across a procedure that you might adopt to help your operation. When a pilot experiences an unusual inflight mal-

function, or has an emergency which requires him to make a precautionary landing, he places the aircraft in "Quick Freeze" after landing. By making a Quick Freeze entry in the Form 781, he places the aircraft on a Red Cross and requires the aircraft to be impounded.

Quality Control specialists and Safety investigators are called in to troubleshoot the problem. Only when the Quick Freeze investigation is completed, can the Red Cross condition be released. This procedure helps to guarantee to the pilot that his particular problem will receive an expert and critical look.

See you next month.

LT COL BEN B. BENIGNO  
Chief, TAC Safety Survey  
Team



# TAC TIPS

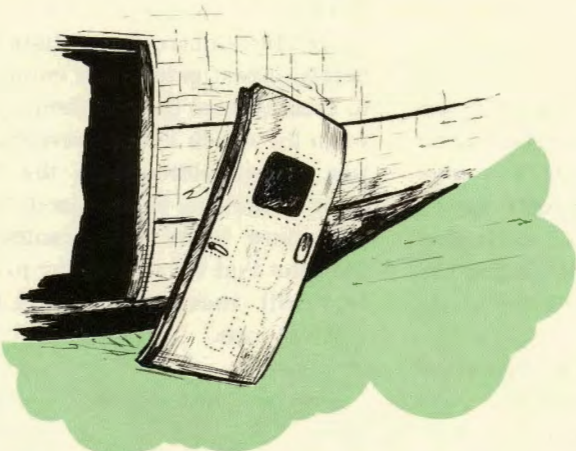
... interest items, mishaps with morals, for the TAC aircrewman.

## WRONG MOVE

The F-100 pilot was refueling comfortably in the turn until the tanker pilot rolled out. The new heading had them staring right into the late afternoon sun. Trying to hide in the shadow of the tanker's boom, the Hundred herder eased his bird over to one side.

It was a mistake!

The refueling hose started whipping up and down. In short order the fighter's probe snapped off. Better to plan refueling headings more carefully!!



## WRONG RELEASE

The Provider crew hurriedly loaded POL for a combat support mission. They rushed their thru-flight inspection and launched. Climbing thru 1200

feet AGL the loadmaster heard that tell-tale whistle announcing a partially open door. He found the blast of air entering at the top of the left troop door. A tie-down strap running between the hand holds on either side of the door served as a barrier as he and an assistant worked on the door. Both pushed hard, forcing the door closed.

Suddenly, the door gave way and fell from the aircraft!

The assistant twisted quickly and grabbed the nearby static line cables. But the sudden door release caught the loadmaster pushing hard and off balance. He toppled over the tiedown strap and fell ... to his death.

Investigators concluded that the door quick release pins became disengaged during the struggle to close it. They found that the crew had used incorrect door-closing procedures ... starting with their failure to complete that important item on the thru-flight inspection: Left troop door - Secured.

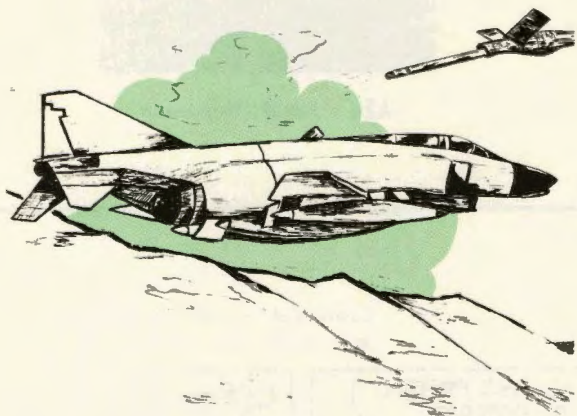


### PHLYER'S FITTINGS

Several flight crewmen have reported difficulty in releasing Koch Fittings upon entering the water after ejection. In the most recent case, the pilot readily released one riser, but the other would not come loose. The probable fault was that there was no pull on the second riser once the first had released.

All users should be aware that without tension on the risers, the male end of the fitting may not pull out. Dirt, oil, and foreign matter can accumulate. And although no specific problems with these fittings have been directly attributed to foreign matter, you should check them on a regular basis. But remember ... never lubricate them!

*from NASC Summary*



### BOOMS AWAY!

After taking 4200 pounds of fuel from the tanker, the F-4 pilot slid back to max boom extension. He

suffered an automatic disconnect. The boomer cleared him for another contact, and he moved in. But then the boom ruddevators locked the boom at eight degrees right azimuth. Boomer requested the fighter to back off again while he worked on his jammed controls. He soon had the ruddevators working again and called the fighter pilot back in to get the rest of his fuel.

Just as the Phantom moved in, the boom operator called a second halt. His ruddevators had jammed again! The boom was trailing off to the right. As the frustrated fighter pilot watched in amazement, the boom whipped full right, rebounded to full left ... and kept going!

The tubeless tanker and fuel-less fighter quit for the day and went home.

This could be the way the call, "Breakaway!" originated.

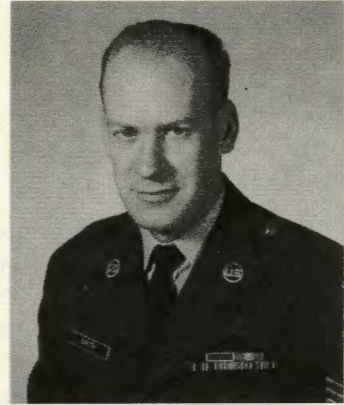
And when boomer says, "Stand clear," ... you better believe him!



# Recognition

## CREW CHIEF OF THE MONTH

Airman First Class Douglas M. Smith of the 464 Troop Carrier Wing, Pope Air Force Base, North Carolina, has been selected to receive the TAC Crew Chief Safety Award. Airman Smith will receive a letter of appreciation from the Commander of Tactical Air Command and an engraved award.



A1C Douglas M. Smith

## MAINTENANCE MAN OF THE MONTH

Airman Second Class Joe D. Wigginton of the 1st Air Commando Wing, England Air Force Base, Louisiana, has been selected to receive the TAC Maintenance Man Safety Award. Airman Wigginton will receive a letter of appreciation from the Commander of Tactical Air Command and an engraved award.



A2C Joe D. Wigginton

# PEANUTS

Courtesy of Daily Press, Newport News, Va.  
© United Feature Syndicate, Inc. 1966





# TAC TALLY

1 JANUARY - 31 MARCH 1967

These charts synopsize our accident prevention efforts for the first quarter of the year, and furnish some food for thought:

TAC active units did not start the year with as many accidents as last year, but the trend is still not good. Too many of the accidents are occurring in the course of routine flying operations. We are not giving the same attention to basic flying rules and air discipline that we give to the more demanding aspects of tactical flying.

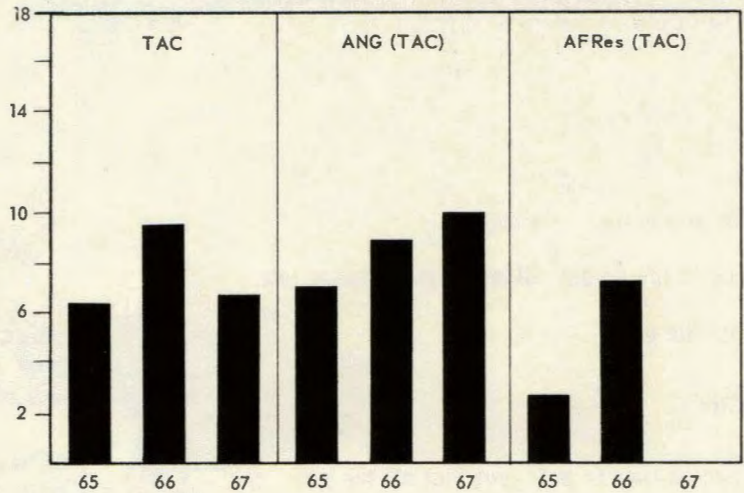
ANG units assigned to TAC allowed their accident rate to creep above last year's first quarter, but there is still time to bring it back down.

AFRes units recovered from 1966, their worst aircraft accident record in several years. They flew through the first quarter of '67 without a major accident... Well done!

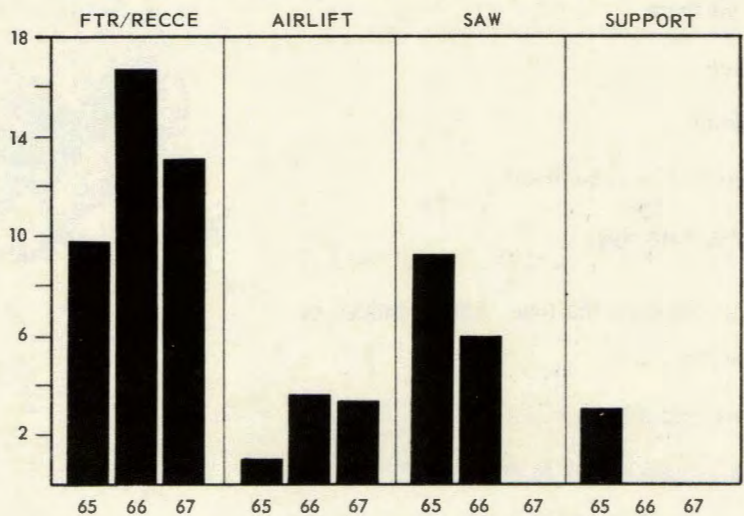
When we compare accident rates by type aircraft and mission, there is no question where our highest exposure lies. And it leaves no doubt about where we must concentrate our accident prevention efforts. No aspect of our fighter-type aircraft operations can afford to go without constant review and evaluation to reduce the factors that lead to accidental losses.

The total factors that caused our accidents fell in expected groupings. Personnel error (pilot, maintenance, and supervisory) accounted for half of the total causes. And over one quarter of the accidents remain unsolved... primary cause undetermined. More aggressive and thorough investigations will identify these causes and permit us to take action to eliminate them.

MAJOR AIRCRAFT ACCIDENT RATE

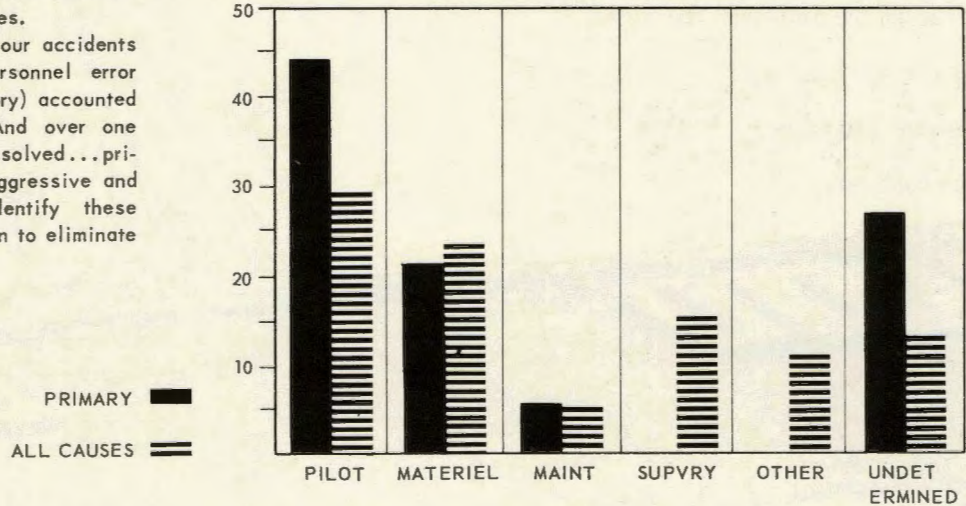


MAJOR AIRCRAFT ACCIDENT RATE (ALL TAC Active & Reserve)

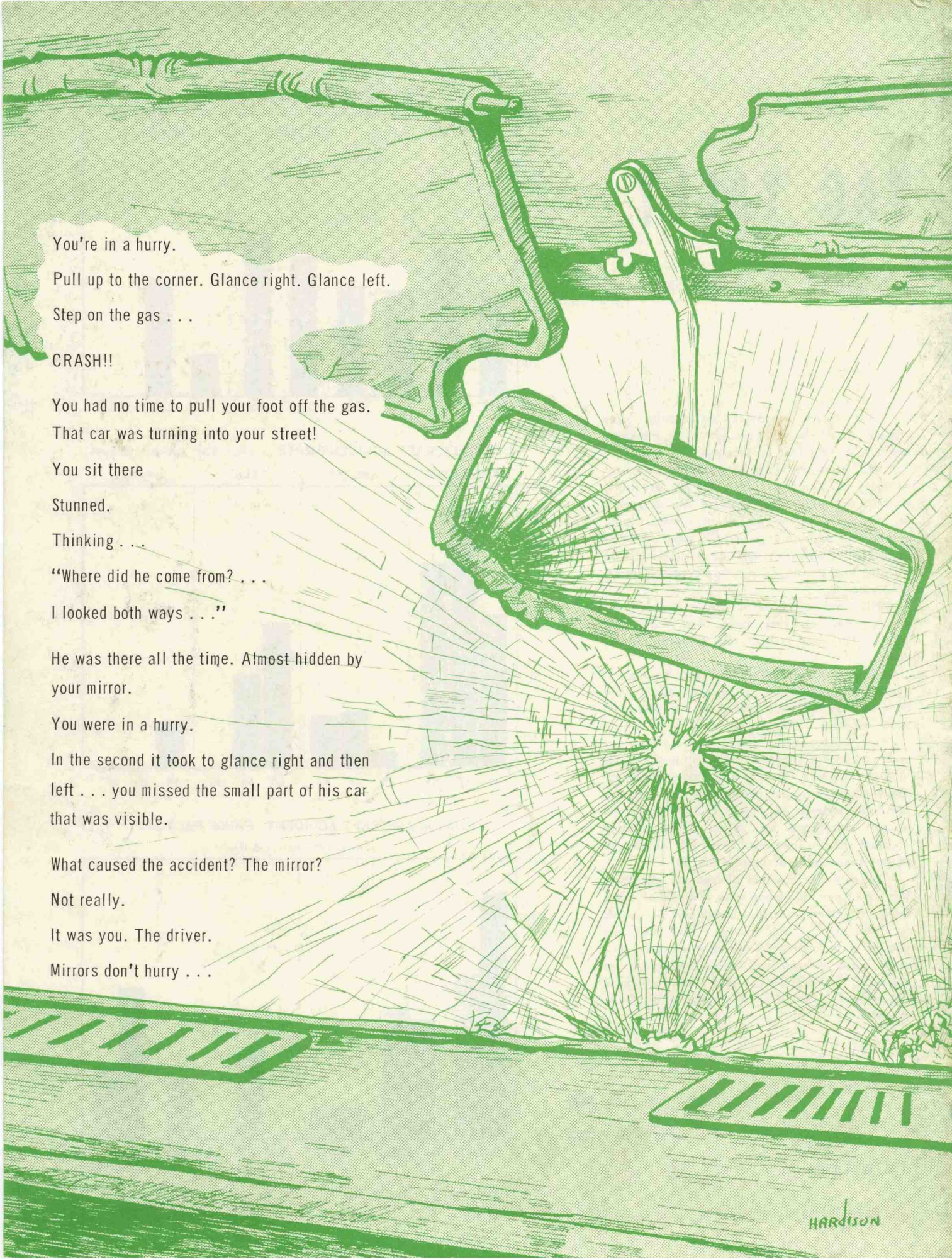


MAJOR AIRCRAFT ACCIDENT CAUSE FACTORS

( ALL TAC Active & Res)







You're in a hurry.

Pull up to the corner. Glance right. Glance left.

Step on the gas . . .

CRASH!!

You had no time to pull your foot off the gas.  
That car was turning into your street!

You sit there

Stunned.

Thinking . . .

"Where did he come from? . . .

I looked both ways . . ."

He was there all the time. Almost hidden by  
your mirror.

You were in a hurry.

In the second it took to glance right and then  
left . . . you missed the small part of his car  
that was visible.

What caused the accident? The mirror?

Not really.

It was you. The driver.

Mirrors don't hurry . . .