# TAC ATTACK

MAY 1974


THE ARMY
AIR FORCE'S
FIRST JET....Pg 4

for efficient tactical air power

# TAC ATTACK

MAY 1974

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Tactical Air Command

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## CURRENT INTEREST



## DEPARTMENTS



TACRP 127-1

# "SAFETY '76"

**A** new safety program, "Safety '76" was announced by President Nixon last December. Endorsed by the Chief of Staff, this program is designed to pick up where the "Zero-In" program left off. "Safety '76" began 1 January 1974 and will continue through America's Bicentennial Year – 1976.

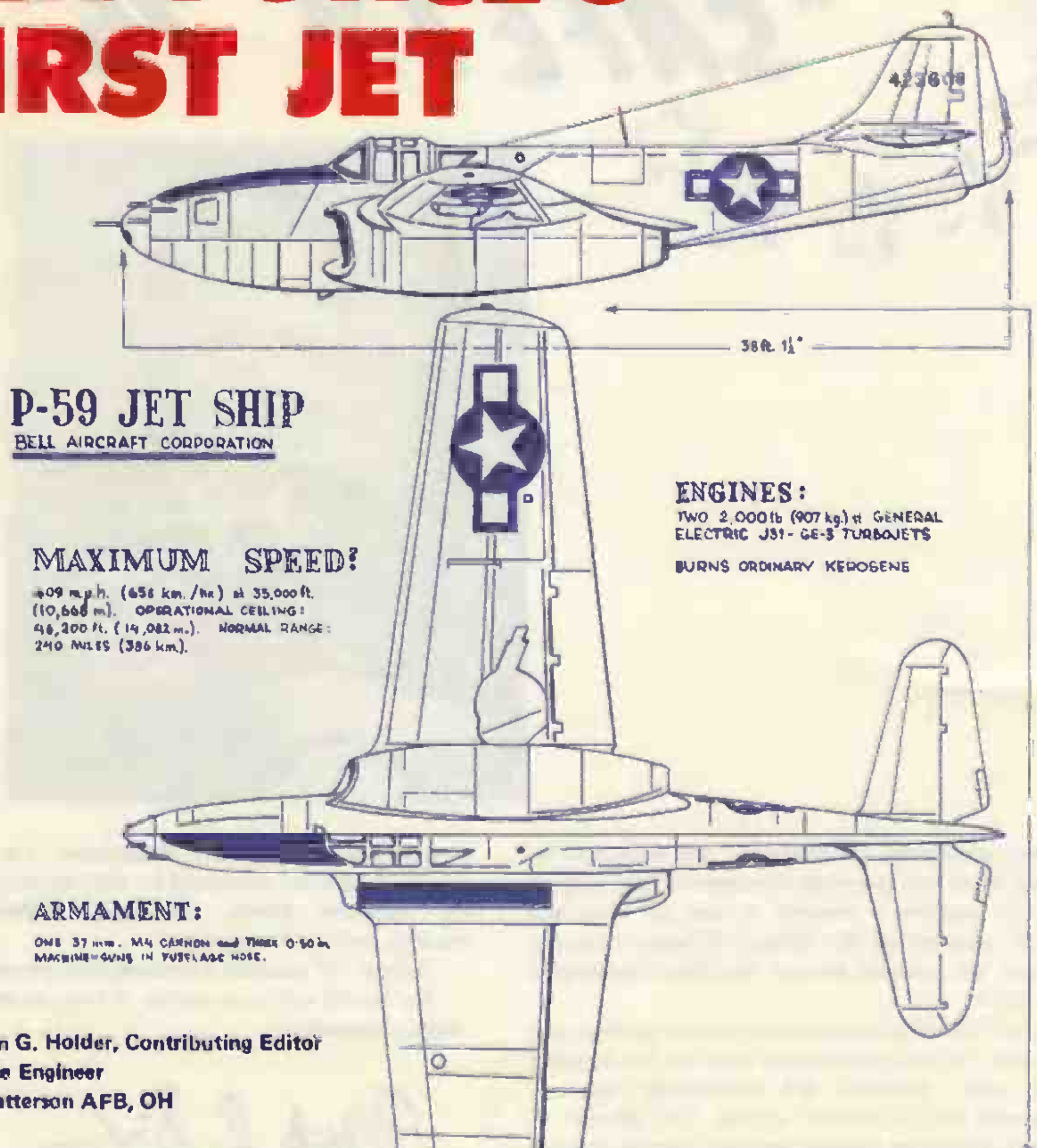
The Air Force's aim is to reduce ground accident and injury rates by five percent each year. We are targeting human factor accidents and emphasizing improved management and supervisory actions. The Director of Aerospace Safety has outlined the safety themes that will receive special emphasis during the three-year campaign. Through December 1974, special subjects will be Motor Vehicle Safety and Hazard Recognition. The remaining themes, each to be publicized for a six-month period, will be: Personnel Safety, Recreational Safety, Health Hazards, and Fire Prevention.

"Safety '76" provides a challenge for everyone in TAC. The payoff will be a savings in lives, equipment, and mission capability.

Robert J. Dixon

ROBERT J. DIXON, General, USAF
Commander

# P-59—THE ARMY AIR FORCE'S FIRST JET





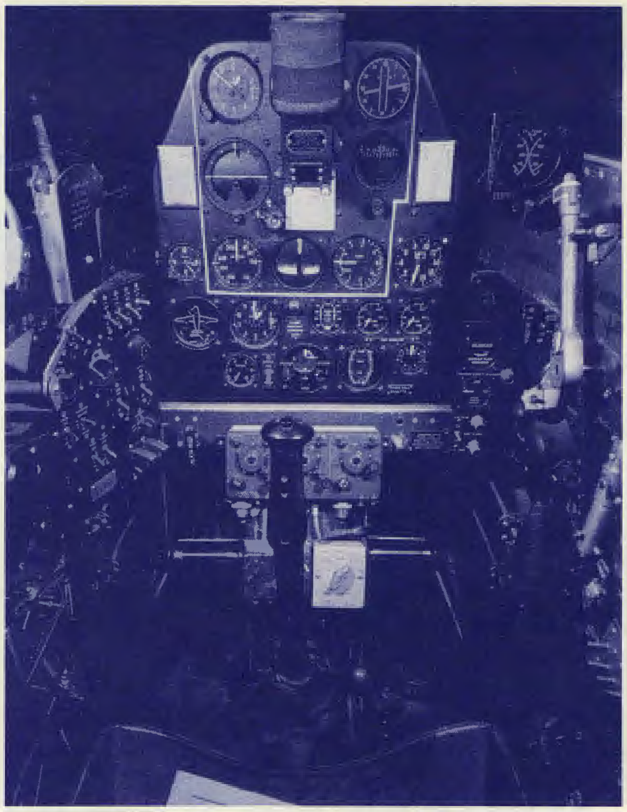
**by William G. Holder, Contributing Editor**
**Aerospace Engineer**
**Wright-Patterson AFB, OH**

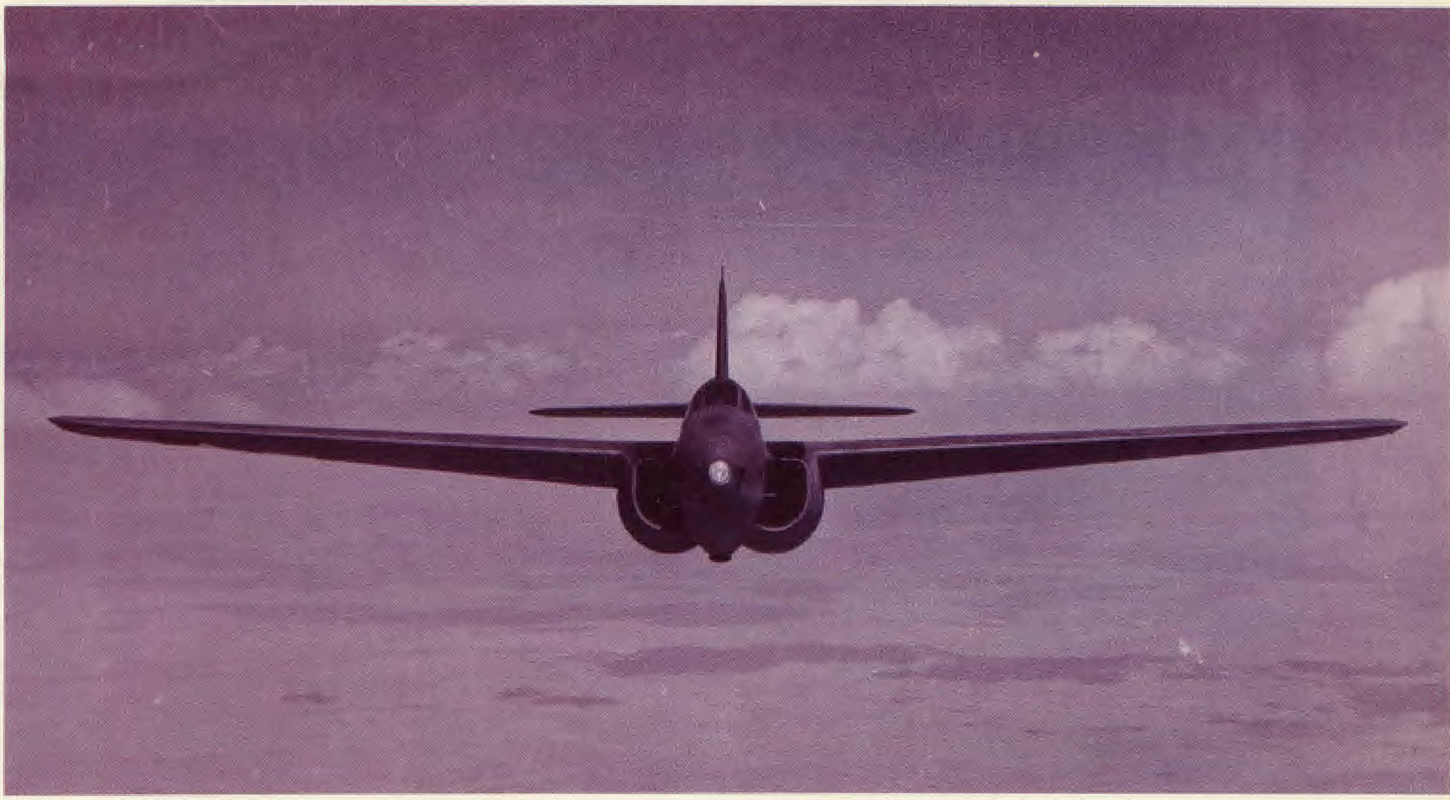

By today's standards, you would have to say that she looked far from streamlined. Her wings were straight, as were all the prop-driven aircraft of the era, and the bulbous engine mounts looked like she was carrying some large cargo containers. The Bell P-59 was the first Army Air Force (AAF) jet aircraft, but she still had a lot of propeller-driven aircraft features.

There were six different versions of this first-of-a-breed. However, not all of those versions were like the twin-engine aircraft shown in the pictures. First, there was the so-called XP-59 which was to be designed as a single-engine fighter aircraft with a unique pusher prop design for propulsion. The contract was officially cancelled late in 1942.

The first jet application of the P-59 designation appeared in the XP-59A series with the Bell Aircraft and General Electric Companies as the airframe/propulsion team. Technical problems and equipment delays caused the first flight of the new aircraft to be set back until October 1942. Three aircraft were used in a vigorous flight test program stretching well into 1943. During July 1943, it was reported that one of the test aircraft had reached an altitude of over 45,000 feet without the use of a pressurized cabin. The first Army performance tests were conducted in October 1943 and showed that the aircraft design had inherent spin recovery problems, but the XP-59 tests had shown that the concept was sound and the AAF pushed to have the project accelerated.

The next evolutionary step in the P-59 story was the YP-59A aircraft. These 13 aircraft, which were almost identical to the X-birds, served as service test vehicles to prove the development and expedite the production of the aircraft. These aircraft had 15 percent greater thrust, but tests with this aircraft indicated that neither the X or Y versions would make it as a combat aircraft. Its performance at altitude was limited because of excessive freezing of the controls, thus it was concluded that the "Airacomet" would be used only as a transitional trainer to familiarize pilots with the operating characteristics of the new jet power plant. As a result,





# FIRST JET


both the X and Y projects were terminated.

However, with the jet principle at least partially proven, the P-59A aircraft was proposed for production in 1943 and 100 were requested. The P-59A had added an additional fuel bag in each outer wing panel. This modification affected the interchangeability of the wing panels and it was decided that later aircraft incorporating this modification would be designated P-59Bs. But as early as 1944, the AAF began to realize that the production P-59s were not going to be able to fulfill the initial requirement for jet fighter aircraft. A new jet fighter — the familiar F-80 Shooting Star — had appeared on the development horizon and the P-59 contract was terminated.

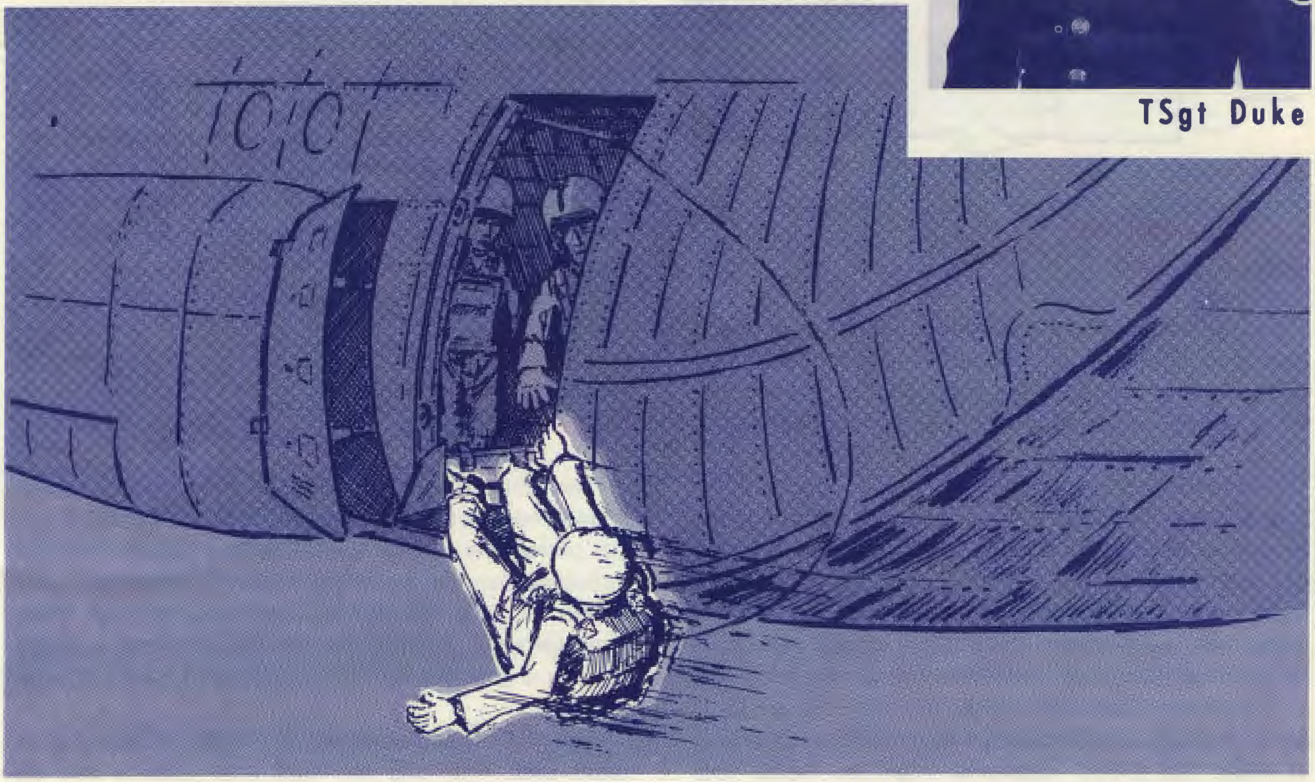
The final P-59 family member, the XP-59B, was a single-engine, lightweight version with 25-pound wing loading, easier maintenance and a higher thrust engine. You might say that this design was the first attempt at the "lightweight fighter" concept. At first, the XP-59B appeared to be promising but the increased emphasis on rate of climb lessened its value. By this time, Bell had practically halted work on the project — then after slippages and employee shortages, the program was cancelled.

In retrospect, the P-59 was the first jet fighter, yet it was a fighter that would never see the swirling combat of a dog fight nor a low-level strafing run. But it was the first — and the technical lessons learned from this aircraft make it one of the milestones in United States aviation history.

## TACTICAL AIR COMMAND

# AIRCREWMAN of DISTINCTION

TSgt Duke

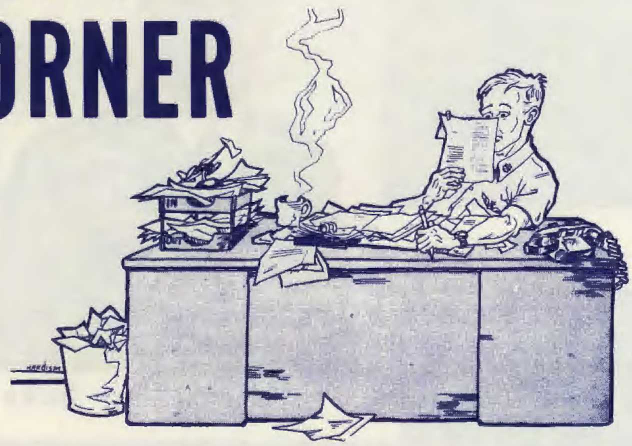


Technical Sergeant Leon C. Duke, 3 Aerial Port Squadron, Pope Air Force Base, North Carolina, has been selected to receive the Tactical Air Command Aircrewman of Distinction Award for February 1974.

Sergeant Duke was loadmaster on a C-130E tactical personnel airdrop mission flown in support of the 82 Airborne Division at Fort Bragg, North Carolina. During the route to the drop zone, Sergeant Duke accomplished his normal checklist items and at the green light signal, the Army paratroopers began to exit the aircraft. Suddenly Sergeant Duke saw a paratrooper trip and fall out the door. His right foot hung in his equipment bag which had turned and become lodged in the troop door. Sergeant Duke immediately stopped the other jumpers and notified the aircraft commander of the situation. After determining that the trooper was not in a condition to be cut free, Sergeant Duke notified the aircraft commander he was going to retrieve the trooper back into the aircraft. As the jumpmaster and safety observers held onto the fallen man's foot, Sergeant Duke leaned out the door of the aircraft into the 125-knot windstream, grabbed the paratrooper's chute harness and pulled him into the aircraft.

Sergeant Duke's knowledge of emergency procedures and his ability to act quickly under stress in all probability saved the trooper's life. This display of professional airmanship during a serious inflight emergency qualifies him as a Tactical Air Command Aircrewman of Distinction.

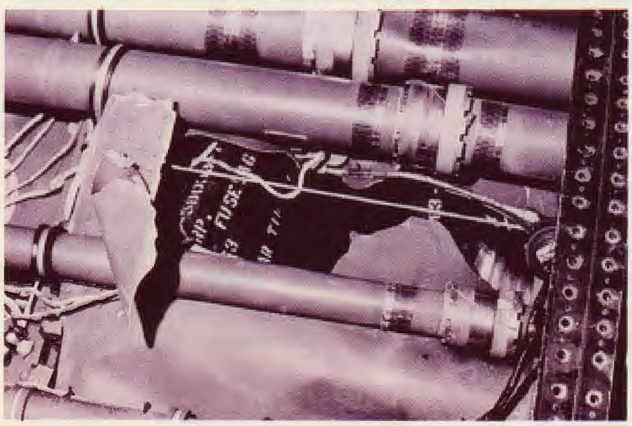
# SPO CORNER



### F-4 FUEL WEBB FOLLOW-UP
**by Maj Burt Miller**

In the last edition, I commented on recent problems associated with cracked fuel cell webbs, resultant rapid fuel dumping, and the high fire potential. As you are aware, after a couple of near accidents, A/B and negative Gs have been restricted/limited on unmodified aircraft. The Get-Well date for modifying all TAC aircraft is in the August-September 1974 time-frame. In the interim, if you happen to be flying an aircraft in which TCTO 1035 has not been accomplished and if you happen to observe a rapid fuel loss or your wingman happens to yell, "You're losing fuel," keep in mind the fact that at least three jocks have now safely landed a machine with similar problems.

The present Dash One procedures (1SS-205) appear to work. A couple of points which have come up as a result of these "no sweat" recoveries might be worth your consideration. A decision to "land as soon as practical" must be balanced against the next step: "Reduce fuselage



fuel . . ." Getting rid of all stray fuel before landing has definite benefits. During roll-out, that 350 knot ventilating/cooling air is no longer available to keep pooled or draining fuel from reaching an ignition source. A fire during roll-out can be just as fatal as one that occurs in the air. An additional idea is that if conditions allow, try to reduce your fuel load at a high altitude – say 20 – 25,000 feet. The thinner air makes achievement of proper ignitable air-to-fuel mixture more difficult. One of the successful returnees did a couple of other things worth considering. He did not turn off, nor on, any electrical equipment, thus eliminating the possibility of arcing and igniting the fuel fumes in the cockpit. He dropped his gear at a high enough altitude so that ejection would still be feasible if the resultant air flow pattern and airspeed changes resulted in fuel ignition. He also flew a no-flap pattern, thus retaining some airspeed and eliminating one more electrical switch and an additional configuration/air flow change. The crew also employed their emergency ground egress procedures and rapidly moved away from the aircraft. Makes sense!

### TWO, THREE, FOUR, ONE . . . . THEN THERE WERE NONE
**by Maj "Doc" Ply**

The first six hours of the night overwater navigation training mission had gone without a hitch. The big C-130 was performing as advertised – its four powerful Allison turboprops roared promises of reliability, reassurance, and other nice things reserved for many-motored types. Then, inconsiderately, number two gearbox oil pressure zeroed and the engine was shut down. No sweat, that's why we have four.

The flight was continued at 20,000, in and out of cloud tops. Anti-icing was used intermittently with no problems noted, except that the automatic ice detection system appeared to be inoperative. Approximately two hours after number two engine had deserted the cause, the AC noted another slight buildup of ice on the leading edges and instructed the flight engineer to activate the anti-icing and de-icing systems. Shortly thereafter, the aircraft entered an area of unforecast severe icing and number three engine flamed out. Within five seconds after feathering number three, number four also flamed out. As number four unwound through 70-60%, number one engine flamed out! Suddenly there high above the Pacific, a swirling maelstrom of snow, ice, and crud gave birth to the world's largest glider.

The pilot immediately reset #3 T-handle and achieved a successful airstart. Then numbers one and four engines were restarted and the aircraft reached destination without further incident. During its metamorphosis from powered craft to glider to powered craft, the Hercules had descended to 17,000.

Evidence thus far points to ice ingestion as the cause of the flameout of numbers one, three, and four engines. Several possible factors combined to make this a memorable flight. First, the bird was operating in intermittent icing conditions with the automatic ice detection system inoperative. After the loss of number two engine, reduction in indicated airspeed resulted in an increased angle of attack and reduced ram air effect to the engines. Ice accretion in the inlet ducts, particularly in the unheated areas, was probably greater than the crew realized. Finally, if the automatic ice detection malfunction was caused by a defective probe in number three inlet, ice detection could have been restored by resetting the number two T-handle.

The tragic consequences possible from such an incident should be obvious. It should be equally obvious that a review of Dash One anti-icing system operation and procedures is worthwhile. Glider pilots haven't been in vogue since the Big One.

## BARRIERS

**by Maj Burt Miller**

Barrier engagement reports filter across our desks on an infrequent basis. Recently a trend to higher and higher engagement speeds has been noted — not in excess of the advertised barrier limits, but pushing these limits in several incidents. A closer look reveals that the reported emergency and fuel weight don't always match up with the listed engagement speeds, i.e., why would an F-4D engage a BAK-12, located 1500 feet down the runway at 185 knots, when the emergency was a utility failure and aircraft weight was 36,000 pounds? Assuming a half-flap, 17-unit approach, I come up with a 160-165 knot final. Allowing an immediate loss of 5-10 knots on touchdown, another 5-10 knots for deceleration from normal touchdown, and another 5-10 knots for deceleration from normal touchdown point to the barrier, at worst the engagement speed would be about 155 knots. If the drag chute were used, as it is during some engagements, this speed would be even further reduced. Since all barrier engagements don't require incident reports, details surrounding the mishap aren't always available. Without more info, however, the implication is that certain jocks are still carrying a few extra knots for wife, kids, and puppy dog.

As long as it's below 190 knots, what's the glitch? The answer is that after so many high speed or heavy weight engagements (Regime III and IV in CE terms), the barrier crews inspect and/or replace connectors, tapes, cables, etc. It could also mean that because of unneeded, high-speed engagements, the barrier system's limit might be exceeded and be down for maintenance when you really need it. If airspeed is required to handle the emergency — great; use it! If not, take pity on your barrier maintainers and the guy who may really need to stretch that tape.

# PHYZ-BIZ

## BEATING THE SYSTEM

**BY Lt Col Harold Andersen,**
**TAC Physiological Training Coordinator**

There's an old gag about a dum-dum who stayed up all night studying for his annual physical exam — and then flunked it! Fantastic you say? Well, get a load of this one!

Recently, a 41-year old navigator was found to have a serious hearing loss in both ears. All prior physicals indicated only a minor hearing loss. A bit of sleuthing turned up some interesting information: the prior audiometric examinations had been accomplished on an automatic system, while the current examination was given manually by a technician. During the testing, the technician noted the response light flashing off and on regularly, although no sound was being transmitted to the examinee! Under questioning by the flight surgeon, the patient admitted that he had "figured out" the pattern of the automatic system but didn't know the test was being manually administered!

This guy had studied for his physical — literally. And, he flunked it, too. He was "out of joint" because the flight surgeon grounded him — since he was more concerned with the possible loss of flight pay than he was with the permanent hearing loss he had already sustained. He thought he had "beaten the system" but in reality he had delayed recognition of his problem. If it had been detected sooner, he might not be wearing that hearing aid today (and he would probably be on flying status)!

Since the medics use various types of apparatus in accomplishing your annual physical exam, it makes one wonder if there might be others "beating" not only the "hearing machine," but the visual testing apparatus as well! This is one type of "studying" you should avoid like the plague.

## CURRENT STATUS OF CUSTOM FIT HELMETS/MASKS

Here's the "straight skinny" on custom-fitted helmets and masks for those whose requirements can't be met "off-the-shelf." A recent check with Wright-Patterson AFB Physiological Training Unit (PTU) indicates some changes in helmet fitting are due in late summer or early fall. It is expected that in mid-September or early October, the "foam-in-place" program will be in effect. Legal and procurement problems have been solved and some 140 sets of molds are under procurement right now. These molds will be distributed to Life Support shops throughout the Air Force and will eventually permit replacement of the current helmet with a custom-fitted one, for all users. Until this program is activated, all requirements for custom-fitted helmets will be handled as outlined in AFM 67-1, Vol IV, Part One, Amendment 18, dated 17 Sep 73.

Customer mask fitting is also covered by the same section of AFM 67-1. There are no plans to delegate this function to unit life support shops and, for the foreseeable future, the PTU will handle all requirements. As a matter of interest, there are some 850-900 custom-fitted $O_2$ masks in the hands of aircrews throughout the Air Force. These masks, made of rubber rather than silicone compound, have a life span of only 6 - 12 months, depending on usage.

# Knight School

Anonymous

Laughter is contagious (so is smallpox, measles, etc., but that's another story); but learning isn't. The learnee must put forth a lot of effort and there must be a learner, whether person, place or thing. Therein lies my tale.

Once upon a time, not very long ago, there was a school for knights called Knight School. In this school, the fledgling knight was taught such good things as reading, riding, and rhetoric. There were hours spent teaching the ballistics of the lance, the spear, the arrow (and although it was not taught, occasionally one would test the trajectory of the saddle). Much time was spent teaching the fledgling how to recognize things (like horses). There were tests. So it came to pass (and one did) and he was called Second Knight.

Second Knight was shipped to a squadron where he was duly checked for being combat ready (such was the custom, for it had been discovered that the parchment didn't tell all and occasionally a Dum-Dum would make it through the school). Second Knight was truly certified and he became a useful tool of the King.

One day, after a gruelling time at the jousting range, Second Knight was desirous of cooling his mount before it was stabled. Yet even as he thought it, his steed became unruly and began to head for the barn. This upset Second Knight and he was wont to give full spur and rein. But, lo and behold, his stirrup straps were adjusted for comfort rather than control and he could not do as he wished. Faithful steed, without force to the contrary, promptly departed the path, and fell into the moat.

The accident board duly charged the Knight with operator error in that he allowed his transportation to depart the preferred path. When asked why he had allowed such a thing to happen, Second Knight replied, "Why, I was never taught that stirrup straps should be adjusted so that I could give full spur and still be seated with a bend in my knee."

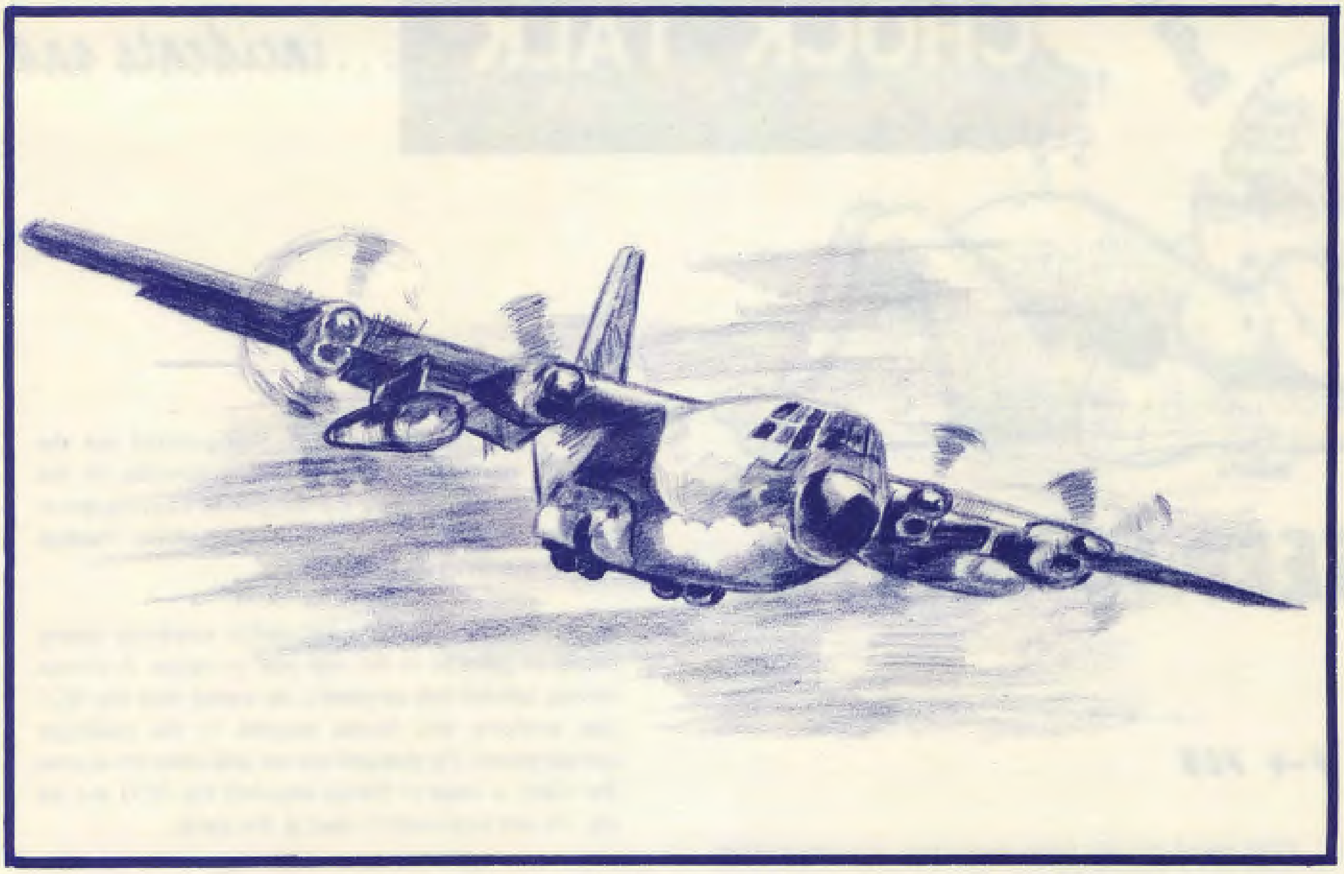
***MORAL: Comfort is nice but control is mandatory !***

# BENDING THE RULES AND... HACKING THE MISSION.

by Maj Payne,
TAC/DOVL

Crew members are continually reminded to comply with established procedures. Why? Simply because the prime cause of aircrew-related accidents is failure to comply with these procedures. We've even heard crew members say, "I'm a mission-hacker. If I follow procedures to the letter, I can't do my job." If you fit in this category and feel that hacking the mission means bending or breaking procedures, this article is for you. Let me give you an illustration.

A C-130E pilot (don't stop reading, you fighter pilots!) was making an approach for landing at a remote civilian airfield in Europe. He was using maximum effort (short field) landing procedures. His aircraft was heavy and he approached the airport VFR on a high, descending downwind and base leg. Rolling out on final, he determined that he was still too high. To get down in a hurry, he reduced to touchdown speed and increased his rate of descent. This did the trick. The aircraft did come down rapidly. The pilot continued to maintain touchdown speed, but when he



rotated the aircraft to the landing attitude, not much happened — except that the aircraft swapped ends. Not even a burst of power was sufficient to arrest the high sink rate. The resulting hard landing on the main landing gear and tail skid caused considerable damage resulting in a minor accident. What did he do wrong?

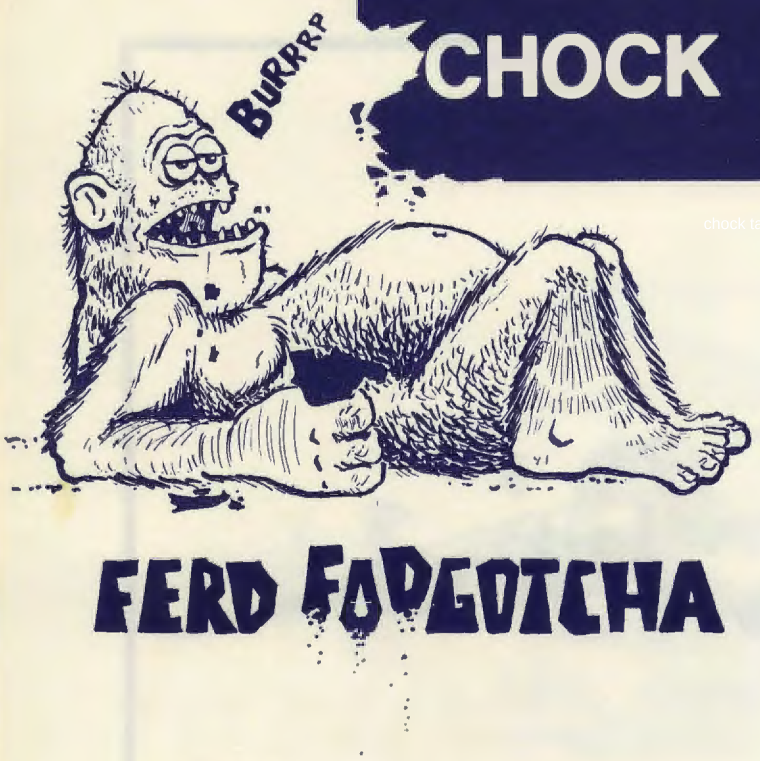
Instead of following procedures and flying maximum effort airspeed, he reduced to touchdown speed and increased his rate of descent. Then, instead of establishing a 300-500 fpm rate of descent one-half mile out on final, he continued the sink rate approach until he flared for landing. In addition, the aircraft exceeded the weight limitations for a normal short field landing. The real irony is that the runway length available did not even dictate the use of shortfield procedures.

There are two general types of "rule benders" — those who have been caught and those who will be caught. The violators usually become known when a tragic accident results from their actions. Mission-hackers who bend the rules once too often pay an enormous price — many have paid with their lives. The lucky ones, if you can consider them lucky, were forced to humbly hand over their bent aerospace vehicles to the airframe repair section. Higher headquarters then issues epistles such as: "Let's get the word out to the crew members that they are to abide by procedures." Such action, although not harmful, is comparable to the old proverb about locking the barn door after the horse has escaped. It's not enough. Non-compliance of published procedures happens every day at all levels. Who has not heard the "old head" at happy hour tell the younger troops about how he "busted minimums" to complete a critical mission? Who has not heard the highly qualified IP say to a student, "Although I wouldn't recommend you do this on a check ride, it works!" Don't think you couldn't be the subject of "pilot failed to comply" on an accident or incident report. Don't you believe it.

Procedures are evolutionary. They evolve from tests, crew member experience, and recommendations through the AF Form 847 program. Historically, adherence to published procedures results in the safest, most standardized method of accomplishing a given task.

If you feel that there is a lot of pressure being applied for compliance with published procedures, you're right. If you can stick to the rules and still be a hacker, great! If you can't, take it around and try again some other day. At least you'll be around to defend your decision at the stag bar.

# CHOCK TALK ...incidents and




### F-4 FOD

FOD raised its ugly head once more; this time putting the bite on an ADC F-4C (yep, "brand X" has a squadron of Phantoms). After coming out of burner a few seconds after take-off, the pilot felt two thumps that seemed to come from the left side of the aircraft. The wingman looked over the aircraft and the pilot checked his engines' instruments – everything checked normal and the mission was completed without further incident.

Postflight checks, however, revealed extensive blade damage to stages 9, 10, 13, 14 and 17, which required an engine overhaul. Cost? $33,000. The culprit? A screw from panel 6L.

The day before the flight, panel 6L was removed for maintenance on the air conditioning package. It is suspected that a screw of insufficient length was installed, vibrated loose and was ingested into the number one engine right after take-off.

A recent rash of lost panels inflight points out the importance of properly securing these panels prior to the next flight. As dangerous as a lost panel is, if the panel is forward of the engine intakes, we might lose more than just a piece of aluminum.

What can you do about it? First, use the right fasteners. Second, make sure they are tightly secured – all of them. Third, make sure the work is checked and double-checked. Let's clamp down on these unnecessary (and very expensive) incidents.

### DANGER-DANGER

We recently ran a chock talk that pointed out the dangers of carrying gasoline in private vehicles. In the article, we didn't mention the dangers of carrying gas in the passenger compartment but a recent Army message points out the seriousness of this:

> An NCO was carrying a two-gallon screw-top plastic bottle of gasoline in the rear seat of his car. A witness driving behind this sergeant's car stated that the NCO was smoking and flames erupted in the passenger compartment. He stopped the car and when he opened the door, a mass of flames engulfed the NCO and his car. He was pronounced dead at the scene.

The message points out that smoking probably ignited the fumes but there are more possible sources of ignition. A screw-top container does not allow fume venting and internal vapor pressure could have caused the container to burst.

We want to repeat that the dangers of carrying spare fuel anywhere in your car is a hazard that should be frightening enough to prevent you from taking a chance. If it's not, then for you and your family's sake – buy the strongest and safest container you can find.

### "JACK KUNG FU"

A mechanic was preparing to remove a 10 ton floor jack from the bed of a pickup. Since he had no one to assist him, he decided to overwhelm it with subtle moves. He gently moved it to the rear, intending to ease it to the pavement. However, the jack took evasive action! It slipped from his grasp, fell to the pavement, did an intricate half roll, and with its swinging handle, struck him a severe blow to the neck. He fell, striking his head on the pavement. Result – seven days in the hospital with a fractured skull. Old Safety proverb says, "Always obtain assistance when attempting to move heavy and bulky objects."

# *incidentals with a maintenance slant.*

## *OV-10 — INADVERTENT FIRING*

Explosives incident, no damage to aircraft or property, zero man-hours. Cost? Ten cents (one 7.62 caliber round). It could have cost a lot more if the Bronco had not been pointed at a revetment.

While de-arming the OV-10, the number two man on the de-arm crew found that the left inboard gun had malfunctioned during the practice mission. He removed 24 rounds of ammo from the gun and in an attempt to find one round he knew was missing, he checked the feed tray and chamber with a flashlight. Since he still couldn't find the missing round, he cleared the aircraft to be taxied to the ramp and parked.

After MMS personnel cleared the gun, the MMS supervisor directed two of his people to pull a functional check on it. One man checked the chamber, but the round at the bottom of the receiver was still unnoticed. The MMS personnel were not thorough in their inspection of the gun because they assumed, since the barrel was in place, all rounds had been removed during de-arming. Six dummy rounds were loaded into the gun and a functional check started. The gun was charged and when the trigger was pulled, the gun fired. The round traveled about 100 feet and struck a revetment wall. Lucky.

Investigation later revealed that at no time during the de-arming, clearing, and functional check was the receiver thoroughly checked to see if the missing round had fallen into the lower part of the receiver. Scar marks in the bottom of the receiver indicated the round had extracted but not ejected. When the gun was charged, the round was pushed into position by the bolt and fired.

It's the responsibility of the weapons supervisor to make sure his personnel clearly understand safing, de-arming, and inspection procedures, and it's up to the crews themselves to follow these procedures to the letter. As the old expression goes, it's not guns that kill — it's people.


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

# DON'T HYDROPLANE

## STOP SKIDDING AROUND!

by **Maj R. L. Wing,**
**MAC FLYER**

**W**ater in the right places can be pleasant, refreshing, relaxing, beautiful and a great source of recreation. But water, when applied to the pavement on which you are to land, can convert that fine, smooth, 10,000-foot runway into the most thrilling two-mile ride you ever had.

The reason is rather simple (if you'll permit a brief over-generalization). Water is a liquid. When a layer of water exists between two solid surfaces, it acts as a lubricant. And two lubricated surfaces just do not present as much friction as if they were dry.

**TOWARD A BETTER STOP**

But we need to look deeper, and to put the situation (and problem) in perspective, let's open our aviation history book and review some of the accumulated knowledge and experience. First, a definition:

Landing: The complete action of bringing an aircraft into contact with an appropriately prepared zone and slowing it either to a stop or to a speed which permits planned and controlled departure from the landing surface.

Granted, this may not be the official, approved, technically tight definition, but for the practical man it pretty well surrounds the subject.

There are several factors involved in achieving the completed action of landing:

- First, the appropriately prepared landing area. As a matter of practice (chopper and flying boat crews excluded) we use a limited landing area, with a special surface that begins at a certain point, quits some X thousand feet later, and is only so wide.
- Second, landing speed. Each bird that uses such a surface has a certain minimum speed for accomplishing safe landings (perhaps meanly defined as the speed which when used allows the average crewmember to leave the aerospace vehicle under his own power).
- Third, mechanical assistance. Certain aberrations in the landing exercise can be offset or rectified by specialized devices such as drag chutes or barriers (though these are useful only to aircraft appropriately equipped,

and then not always).

• Fourth, braking ability. The aircraft brakes can function only as well as the tires can be resisted by the surface (with due allowance for pilot technique, passenger comfort and other problems).

**FRICTION AND BRAKING**

Obviously, the most variable of the variables is the last one listed. The question: What sort of coefficient of friction does the runway offer? That depends on a number of factors which we'll mention in a moment. For now, we can say runway friction ranges from very good in the case of new, dry concrete to almost nothing on very smooth, damp surfaces. The effective friction is also nil when the runway is coated with ice or when the aircraft is transiting water puddles at high speeds.

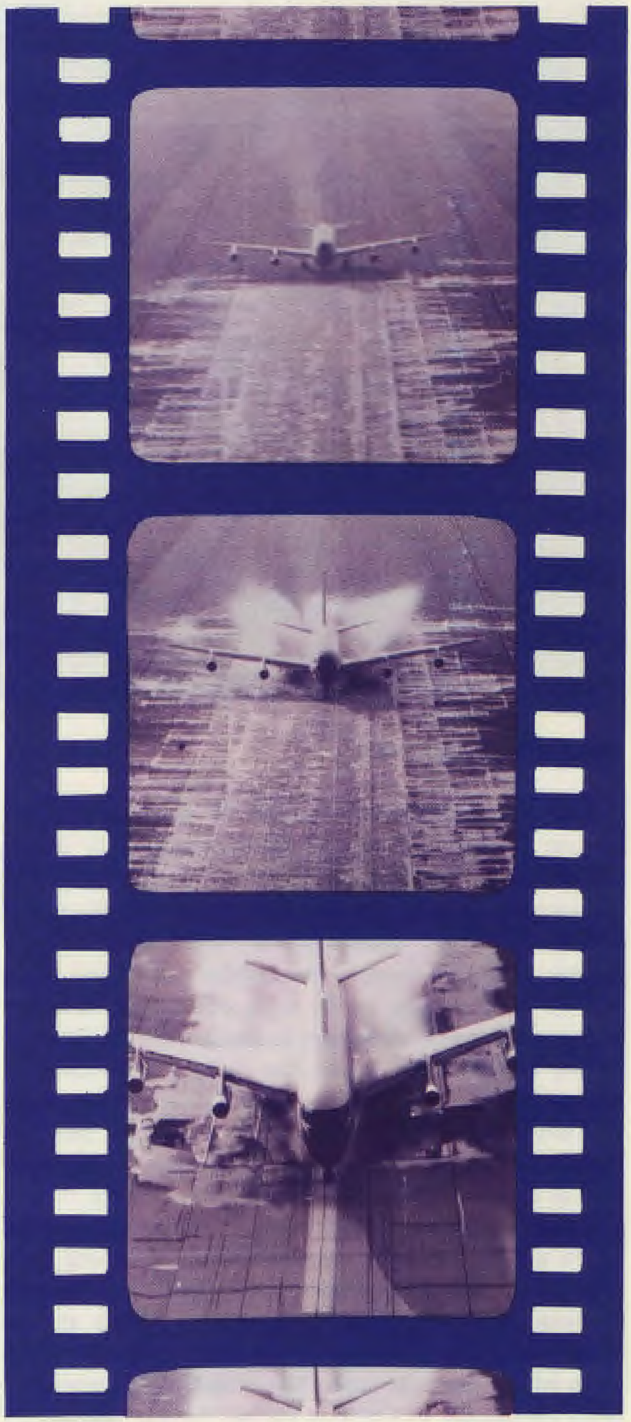
Time for definitions again. A friction force exists between any two surfaces which are in contact (e.g. between your foot and the floor, or between two pages in this magazine). The ratio between the maximum possible friction force and the "normal" force (which is usually the weight pressing the contacting surfaces together) is called the coefficient of friction. Engineers will know it as:

$$\text{mu, computed} = \frac{\text{friction force}}{\text{normal force}}$$

Most aircraft do most of their stopping by using brakes. Technically, deceleration is produced when the braking force exerted on the wheel is resisted by the friction force from the surface. Many factors influence how much stopping force (or coefficient of friction) is available: surface condition and contamination, rubber composition, tread, tire inflation pressure, surface friction shearing stress, relative slip speed (i.e., the degree of skidding; optimum stopping forces are available in the five-to-ten-percent slip range) and several other lesser elements. But the most important of the lot is the first: surface capability.

Now for a few figures to put our physics in practical perspective. "When the surface is dry brush-finish concrete, the maximum coefficient of friction for most tires is .60 to .80." Taking .60 as an example, if your aircraft puts 10,000 pounds on one wheel, 6,000 pounds would be the maximum braking force available from that wheel. Result: a fairly rapid stop. Under grim conditions — say .05 as on some ice — you would have only 500 pounds of braking force available from a similarly loaded wheel. In other words, if all other values remained constant, you would need something on the order of twelve times as much runway for stopping.

Suppose for any given friction condition you apply too much brake. Well, any time braking torque exceeds the friction available, a skid results. And skids are bad news to any pilot — but especially to one landing a high-performance aircraft. How would we define high-performance aircraft? Try this: any which requires half the available runway for a normal dry-surface stop. In other words, under certain conditions Gooney Birds and O-2s qualify.



**Sequence taken during NASA hydroplaning tests.**

# HYDROPLANE

## THE WATER FACTOR

The most common degrader of adequate surface friction is water on the surface concerned. For proof, consider some facts and figures from one report of an F-4 wet-runway research project. According to the author of this report, the coefficient of friction for a dry runway is roughly constant throughout the landing speed regime, while braking ability on a wet runway is low at high aircraft speeds, improving as speed decreases. Specific figures offered were these: the braking coefficient of friction for a dry runway was approximately .35 during the entire test deceleration speed range. On the wet surface (RCR 17), the coefficient of friction was only .025 at 140 knots, improving to .225 at five knots.

Lower coefficients mean lower braking effectiveness, which you as the driver recognize as longer ground runs. This was especially borne out by the Edwards aborted-takeoff test results. Conditions: abort at 113 knots, wet runway versus dry runway. Comparing stops made with a chute, it took 123 percent more distance to bring the aircraft to a halt on the wet runway. Comparing stops without a chute, it took 223 percent more runway to get stopped on the wet one. Please note that these tests were conducted on a good concrete runway with RCR of 17 when wet and 23 when dry.

Why do we have such differences in stopability? The answer is hydroplaning, a situation far more complicated than the "$9\sqrt{P}$" posters would indicate. According to the experts, there are three kinds of hydroplaning – with full and partial sizes of each. These varieties are dynamic hydroplaning (the classic kind, for which the above formula is a rough rule of thumb), viscous hydroplaning (thin film lubrication) and reverted rubber hydroplaning. We'll simply call them dynamic hydroplaning, viscous skidding and reverted rubber skidding. Terms notwithstanding, three separate varieties of low tire friction exist. Let us consider each of the three in detail.

## DYNAMIC

Dynamic hydroplaning occurs when a layer of standing water is able to form a liquid wedge under the tire. To the purists, that occurs when the vertical component of water resistance force between tire and surface equals and begins to exceed the downward load on the tire, thus lifting the tire from the surface. For the laymen: this occurs when you go fast enough to ski on the layer of water. In any event, tire and surface get out of touch.

Four factors are necessary for dynamic hydroplaning: smooth or closed tire tread pattern, water depth greater than the tire grooves, smooth runway or pavement surface, and a certain minimum velocity. Concerning the latter: if the first three conditions are met, the correct formula for computing minimum hydroplaning speed is:

$$8.6\sqrt{\text{tire pressure (in psi)}} = \text{knots}$$

$$\text{or } 9.9\sqrt{\text{tire pressure}} = \text{mph}$$

Incidentally, once dynamic hydroplaning has been established, it can continue at speeds below the onset speed and in water shallower than the onset depth.

At speeds below those computed for full dynamic hydroplaning, enough vertical resistance or ski-effect can be generated to partially lift the tire, reducing the footprint area where friction forces are applied. Hence the term partial hydroplaning, and hence the fact that you don't need to be riding off the surface to lose some or nearly all of your braking effectiveness.

**VISCOUS**

Viscous hydroplaning is also known as thin-film hydroplaning or viscous skidding. The phenomenon is familiar to any swimmer who has climbed on smooth wet rocks: it doesn't take much water to ruin your traction, especially if the surface is a nice slick shale. According to the engineers, as little as .001 inch of water – a breath on a cool plane of glass – can be enough! And the best base for such a layer is an old asphalt runway, well-larded to a glossy finish with oil, rubber and other contaminants. The last 2,000 feet on the west end of the runway at Wiesbaden used to be in this category, and was notorious for its thin-film slip potential. And it is likely that the end 500 feet of most asphalt runways would be very similar.

Here are a few facinating facts, again from the wet-runway research and other studies:

- Runway friction can drop to as little as 50 percent of normal if thin-film conditions are met.
- Tire pressure and wheel loadings have little effect on viscous hydroplaning.
- A tire with good tread patterns will tend to cut the film, but the resulting braking effectiveness will still be roughly only 70 percent of normal.

This is a good place to mention decelerometer readings, known to crewmembers as RCRs (runway condition readings). Obviously, due to the vehicle speeds involved, decelerometer readings are going to be useful only in the below-dynamic-hydroplaning range – in other words, on a wet but not puddle-covered runway. Even then you will have at best only an estimate. According to NASA, the readings are reasonable on ice or snow and on dry surfaces, but appear to be deficient on wet or flooded runways. And the readings depend on other variables such as the skill of the operator (skids to full stops will give unfairly high readings) and vehicle condition (vehicles not equipped with the required snow tires will produce erroneous readings too). Moral: be conservative and suspicious. When the surface is damp, don't fritter away extra runway with high-speed finals or late touchdowns.

**REVERTED RUBBER**

Reverted rubber hydroplaning occurs when the tire itself produces the reason for slipping. This happens when a locked-wheel-type skid on a wet surface lasts long enough to produce temperatures of 400-600 degrees F, causing the rubber to revert to its uncured, sticky condition. And once the rubber reversion is well established, a combination of water film and uncured tire will sustain the skid down to ten knots or so.

You have probably seen photos in safety magazines of grayish, dry-cleaned tire streaks on the runway. At one time these streaks were thought to be the evidence that steam created under the skidding tire had caused the reversion. Latest thought is that the rubber reversion came before the steam, and the marks showed that the runway had been steam cleaned by a couple of 400-plus-degree, ten-ton-toting erasers carrying a very excited pilot toward the low point in his day.

## REVERTED RUBBER SKID MARK

**SUMMARY**

There is more to stopping an aircraft than stepping on the brakes and turning smartly off at the end of the runway. Your ground run is greatly affected by the available friction between your tire and the runway, with water on the surface being the biggest problem. Water is the key in three types of hydroplaning: dynamic, viscous and reverted rubber. And each of the three can convert what you thought was a runway into what feels like a wet porcelain doorknob. ➤

# TAC TIPS ...interest items,

Aviation in itself is not inherently dangerous, but like the sea it is terribly unforgiving of any carelessness, incapacity, or neglect.

## RESET OR REGRET

An F-4C, on a local area indoctrination flight, was en route home when the crew began to experience radio problems. After radio contact was reestablished, the Phantom was cleared for a TACAN penetration. Leaving the IAF, the crew received further instructions, including an area altimeter setting. However, continuing radio static and an intermediate level-off altitude interrupted the pilot's altimeter setting habit pattern. The altimeters were never reset from 29.92. The arrival controller failed to pass the current setting (29.52) to the crew and they pressed on. Shortly after departing the TACAN FAF, the airplane crashed in an open field, wings level, at a normal rate of descent. Amazingly, both pilot and back-seater successfully ejected after the aircraft had impacted the ground.

Complacency might have been at work here. The arrival controller failed to provide a current altimeter setting and the pilot descended through the transitional altitude without changing from 29.92. Why didn't radar monitoring catch the low-flying Phantom? It was not available due to non-coincidence with the approach course; that is the TACAN final approach course was not the same as the PAR final approach course.

The old "altimeter-not-reset" trick did this aircraft in. Watch out for this old but deadly mistake and use that transitional altitude as a cue to reset — especially when the setting is a low one. "Cold and low — look out below!"

## C-130 TAXI ACCIDENT

DAMAGE: Two vertical channels, 12 inches deep, in leading edge of right wing, a 23-inch leading edge section cut completely in two, right aileron bent, anti-icing duct crumpled, position light broken — and two trees knocked down.

The transient crew of a WC-130E was preparing to depart Midway—home of the Gooney Bird. Taxiing down a newly-painted, closed runway, the pilot chose to run-up on a parking apron and started a 180° turn into the wind. At this time, the co-pilot called for a run-up "in place" but the tower operator thought he requested a run-up on the runway and cleared the C-130 to "taxi into position and hold." All this took place while the pilot was in a turn so he rolled out on a yellow guideline running parallel to the side of the taxiway — a line he assumed would provide wing-tip clearance. The engineer became concerned about the aircraft's clearance with a row of trees off to the right and moved to the co-pilot's window. Unfortunately, he had a distraction — several gooney birds were swooping low around the airplane — and he began to watch them for fear one might fly into the props. That's when the herky hit the trees.

You can see how our old nemesis, "chain of events," caused this one:

- A misunderstood radio call
- A quick change of plans
- A distraction
- An assumption that the yellow taxi-line would give wing-tip clearance.

This chain of events produced the most avoidable mishap of all, the taxi accident. Let's start breaking those chains — instead of airplanes.

## R-IP

The lot of the IP is not an easy one. You have to be a father/friend, preacher/teacher, and hot rock/cool head all rolled into one. If you yell at the student, you're a hard-hiney; if you cajole, you're a nagger. If you follow the book to the letter, you're a weenie; if you don't, you're a high-risk airplane driver. You probably don't get the stick time you need to fly as good as you talk. It's a tough job — and for the most part, a thankless one. IPs sometimes press — after all, you want that student to get all he can out of the program in the short time he's under your wing. Unfortunately, IPs sometimes press too hard. Two recent examples:

A many-motor instructor pilot pulled one throttle back right after take-off (before gear retraction), the bird got into a dutch roll, the IP couldn't take control from the student in time and the resulting crash killed two.

The second incident, involving a U-10D, also resulted when the IP pulled an engine at about 100 feet above the ground after take-off. The simulated forced landing ended up as an inadvertent crash landing with extensive damage to the left main gear and fuselage. Luckily – both pilots walked away, but it could easily have been "Crew Fatal: Two."

Simulating emergencies has long been a bugaboo between two schools of thought: The presser says, "We've got to make emergency situation training realistic – or else we might as well do it all in the simulator." The safety-oriented instructor says, "Why compromise safety in a training situation?" Score two for the "weenie."

Know your dash one and 55-series limitations – and stick to them. Don't let it be said of you in the final report: "IP allowed the aircraft to enter a situation from which recovery was doubtful." It makes a terrible epitaph.

## *T-39 FREE-STYLE SKATING*

A T-39 approached a western Air Force base through a 500 feet overcast with light rain. The IP touched the '39 down on centerline, about 1500 feet down the runway. Flaps were raised and brakes were checked – then the fun started. As the aircraft began skidding to the right, the pilot tried to correct, using rudder and brakes, but no luck. He engaged the nosewheel steering and the aircraft straightened out – momentarily. It then started to skid to the left and all attempts to control the skid failed. Both tires blew, the '39 did a left one-eighty and came to rest 50 feet left of centerline. The pilot notified the tower, shut down the engines, and the crew and passengers evacuated the airplane – now about six inches shorter than when it touched down.

What set this whole acrobatic free-style skating exhibition in motion is our old friend (?) – hydroplaning (see p. 16). Further investigation revealed that the first 3000 feet of the runway were covered with a thick layer of rubber deposits from previous landings. This is not a unique condition; anytime you see that nice black carpet of used rubber at the approach end of a runway, think "hydroplaning" – wet runway or not. You can't be too careful.

# cindy picks a pro
## OR GIB'S LIB GETS A SHACK

by Capt George McKinney
HQ TAC/XPPC

The following story is related by Cindy Dee Cupp, a waitress in the Stag Bar of a popular western cross-country base. The story concerns the four crew members of a flight of two F-4s that landed just before Happy Hour on a recent Friday afternoon.

Mike (the AC) and Mushy (the WSO) of Bang 02, were first to the bar. Bang 01's crew, Bill and Bob, had spent a few minutes on the flight line helping transient install downlocks and discussing the servicing of their nosewheel strut. As Mike and Mushy squirmed toward the free pizza, the AC remarked, "Sure hope the weather's good when we head home. A GCA would be rough with the altimeter jumping ± 500 feet, and the attitude indicator upside down."

"Maybe we should have written them up," said Mushy. "They've got F-4s here and could probably have fixed the problem."

"Nuts," said Mike. "We'd be stuck here 'til Tuesday, and we need that range ride Monday to recoup last week's losses."

"That we do, Boss. I overheard the ops officer say if you didn't qualify Monday, he'd put you with an IP for a couple of rides, so do good will ya? I don't want duty hog for a week."

"No sweat, my boy. That wind shear was murder last week. We'll just press a thou or so Monday and lay 'em right in. Hope they don't have a Charlie Sierra range officer. Our fearless leader on this trip fouled me yesterday — on my only qualifying pass."

"Yea, that kinda surprised me. We've been lower than that plenty of times without a foul call. Hey, grab me an extra piece, will ya? Haven't eaten all day."

Bill and Bob arrived before long. ACs and WSOs were soon in separate groups.

"You know, Bob, I'd hate to fly with old Bill full time. He wants us at Base Ops at 0600 tomorrow. Didn't you tell him 'Gibs, Inc.' had a canned route home already?"

"He knows that, Mushy. But the weather in Texas is forecast to go down and we may have to go a different route. That would require some planning, and you know maintenance wants the birds home by 1500."

"Aw, the wrench benders are always crying. They don't have the problem of keeping up the 'gator image on these trips."

"Actually, I'm pretty happy flying with Bill. I went up with Mike last month and he wouldn't even let me read the checklist, much less respond."

"Checklists, Schmecklists. Just look at the gear indicators on final. Of course, I do glance at the cabin altimeter now since ol' fireball left the vent lever up and I passed out while having a smoke on our last trip."

"You're damn lucky lead saw you slumped over and had Mike make an emergency landing or you might have arrived at Hot Town as a cold corpse."

Meanwhile, at the other table, the front seaters are discussing the past week's range scores.

"That drink ought to taste plenty good, Bill ol' boy; it's my money that paid for it. Lady Luck was sure with you this week."

"Not so much luck, Mushy. Bob and I try not to leave too much to chance."

"S-s-s-h!! Not so loud with that 'me and' stuff. Gib Lib's about to get out of hand as it is."

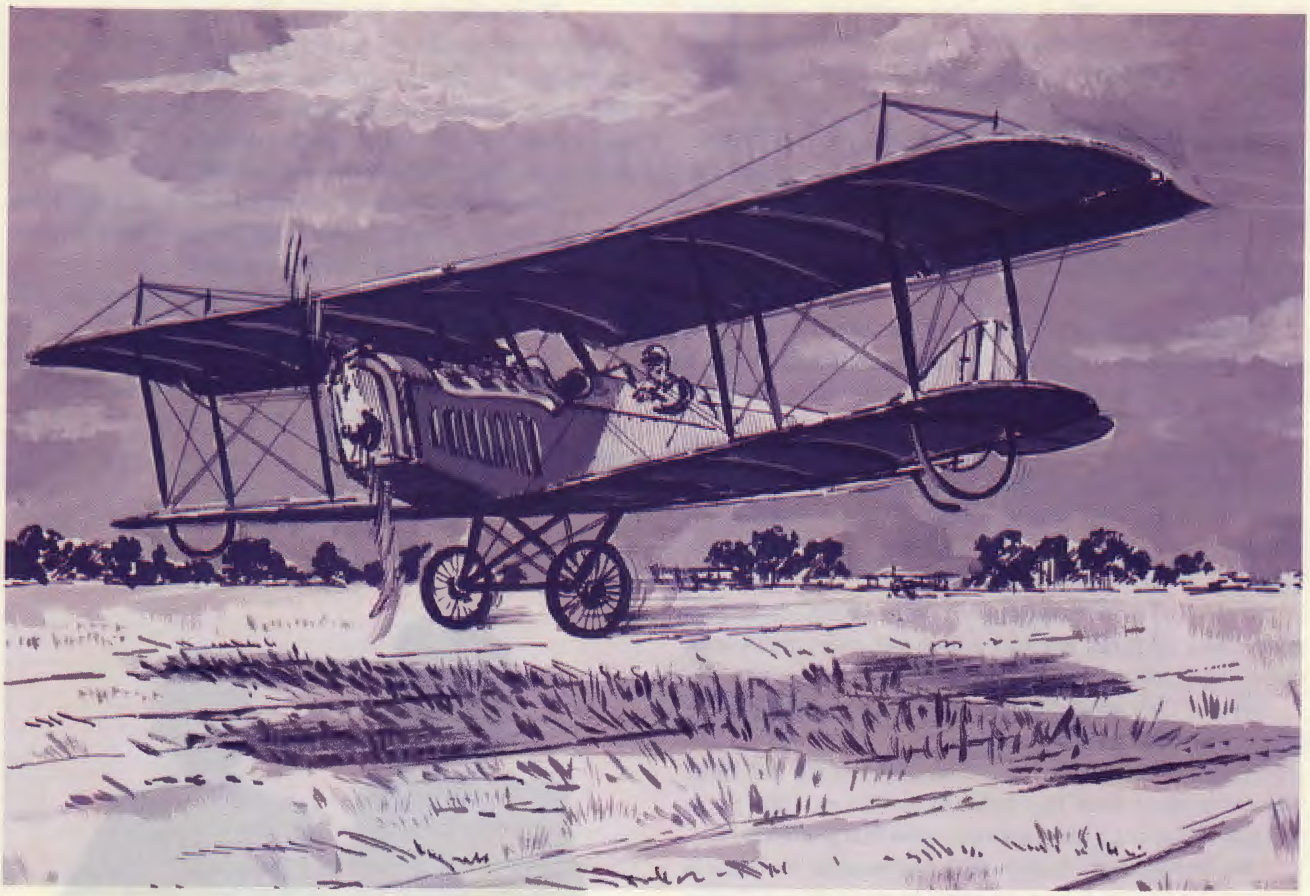
"Bob's really a big help. He checks winds on the inertial, gives me an off-set aim point, and we discuss how to adjust the roll-in point. Just last week, he saved me an unscorable bomb. Had to dodge a buzzard on downwind and would have forgotten to change mills for low angle if Bob hadn't been there with the checklist."

"Checklists, phooey! I make Mushy go cold mike on the range. A real fighter pilot doesn't need anyone blowing in his ear in the gunnery pattern."

"Sorry, Mike, I can't agree with that. Come on, let's grab a steak and hit the sack."

"Not me, ol' buddy. I wouldn't rob that cute little Cindy of the opportunity to spend some time with yours truly. — Hey! She's leaving with Bob. How do you like that? She digs Gibs!!"

Note from Cindy: "It's not gibs I dig, guys. It's pros."



# HINTS ON FLYING....

**Extracted from the Curtiss Standard JN4-D 1918 Military Tractor Handbook**

- Look over machine in general way.
- Be sure of gasoline, oil, and water.
- Test motor for revolutions.
- Be sure controls are working properly.
- Start off full power directly into wind.
- Watch your direction carefully and counteract with right rudder the machine's tendency to turn to the left, due to the propeller's air blast striking the left side of fin more forcibly than the right side.
- After attaining a few feet headway, raise the tail with controls and keep it in this position to prevent machine from leaving the ground until it is well past its minimum flying speed, at the same time watching your direction carefully. If your course permits, keep your machine on the ground until its maximum ground speed is reached. Then, very easily and smoothly, take it off the ground. By following the above plan of a high speed take-off, a large degree of safety is assured, for if engine trouble develops soon after, you have surpassed the machine's minimum flying speed and you have a good chance to pick a landing spot that would not be possible if the take-off were made at slow speed, for the machine would immediately start sinking on loss of power and also lose its controllability to a large degree.
- The most dangerous place for engine failure is just after leaving the ground.
- When once underway, it is advisable to attain a safe altitude as soon as possible, and it will be found that the best results can be attained by a high speed, low angle climb rather than a slow speed, large angle. A steady, fast climb is the best for all purposes.
- After a height of not less than 800 feet, a turn can be contemplated. It is advisable to reach a higher altitude if possible, but do not attempt one lower unless necessity demands to miss obstructions or to play safe on a certain forced landing spot in case of engine trouble.

# FREE ! FREE ! FREE !

## TAC ATTACK'S GIGANTIC GIVE-AWAY PROGRAM !


(contents not included)


Chris Martin, Photo by Virgil Kreder

***THE AUTHOR OF THE BEST ARTICLE PUBLISHED EACH MONTH WILL RECEIVE ABSOLUTELY FREE OF CHARGE, A 100% FABRIC, RUSTPROOF FLEAGLE T-SHIRT.***

CONTEST RULES

You are where the action is. In an effort to publish the type of stories that your fellow TAC-hackers will enjoy reading, we are asking you to put your war story/safety spiel into writing and fire it on up to us. You don't have to be an Ernest Hemingway or Richard Bach to see your article in print – we're more interested in the message than the magic of proper punctuation. The articles should be from two to twelve double-spaced typewritten pages in length but good, clear handwritten material is also acceptable. We'll normally give you a byline but if you choose to remain anonymous, just let us know – but be sure to include your name and address in case you're the lucky winner of the Fleagle T-shirt. All TAC and TAC-gained personnel, including civilians assigned to TAC are eligible. The staff of TAC ATTACK will judge all entries for content, creative style and relevance and award a FLEAGLE T-shirt each month to the author of the best article published.

Send your items to

Editor, TAC ATTACK
TAC/SEPP
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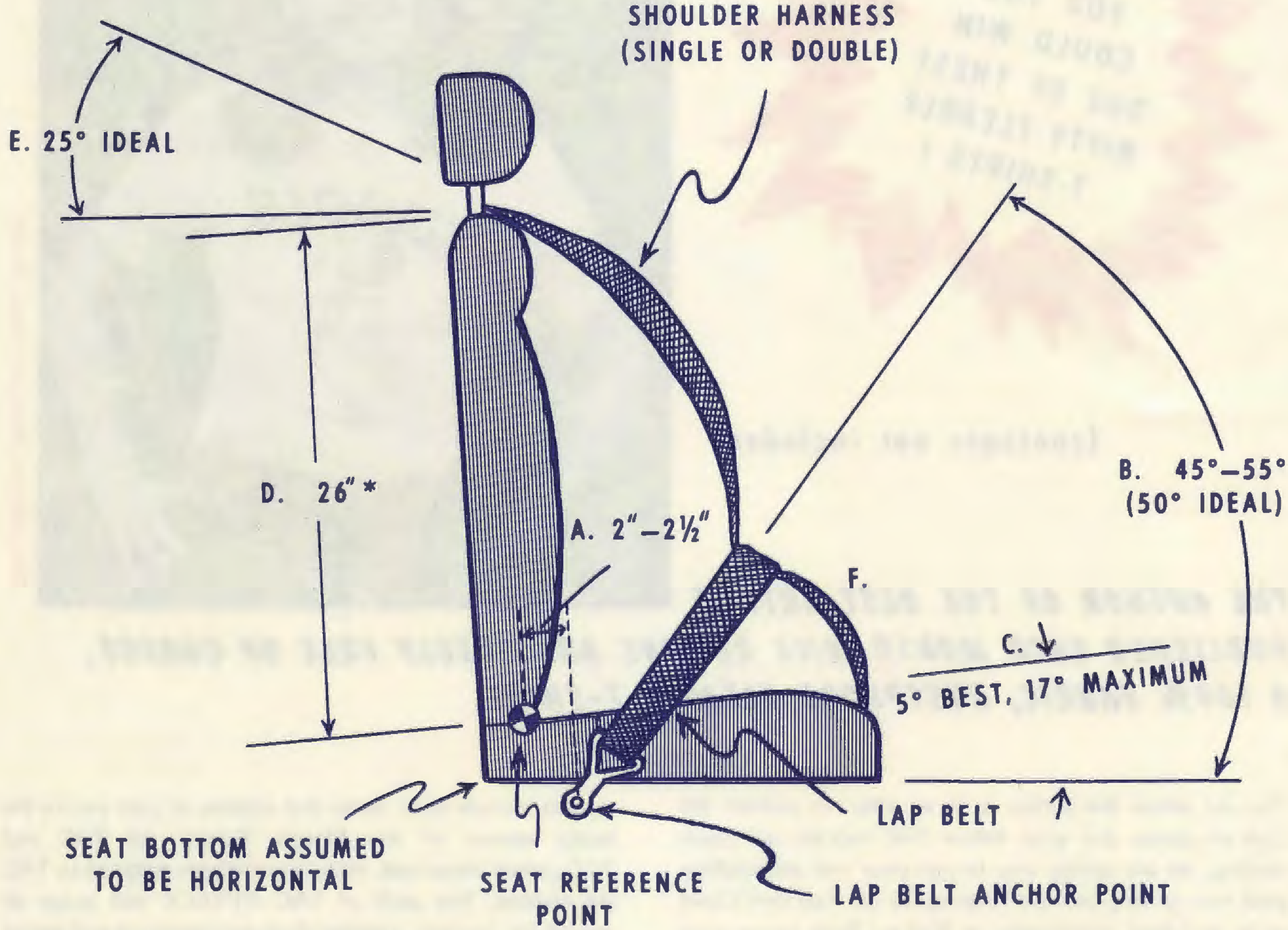
or call autovon 432-2937

# restraint systems




* BASED ON A SITTING HEIGHT OF 38.0 INCHES (95TH PERCENTILE INDIVIDUAL)

by Capt Mike Byers,
TAC/DOXBL

The cropduster had pulled off his pass when the prop governor failed. One blade went into low pitch and the aircraft snapped into a vertical dive at full power. At 100 knots and 90 degrees of dive, the bird slammed into the hard-packed field. When the dust had cleared, the pilot unstrapped, climbed out of the wreckage and walked away with minor injuries.

Unbelievable? Maybe so, but this actually happened a few years ago. Of course, cropdusting aircraft are built pretty rugged and are designed to withstand crash impacts, but one of the things that saved this pilot's life was a properly designed restraint system. Nothing fancy — just a seat belt and shoulder harness similar to the ones that are used in most USAF aircraft. The effectiveness of these systems is due to their design and geometry. The following principles apply not only to special-use and military aircraft, but also to automobiles, recreational vehicles, and private aircraft. If you're properly restrained, you can survive a pretty severe accident. You can stand a bunch of G's if the straps hold you in the seat.

— **System Configuration** — About the best system that's available to everyone and reasonably inexpensive consists of a lap belt, double shoulder straps and a center lap belt tiedown.[1] This system is used in most race cars and in the T-39. Some people are concerned about the center belt tiedown as it relates to the tender parts of their bods. Do not worry! This strap keeps the lap belt from riding up and allowing you to slide under it. It doesn't restrain you by holding you in. (If it did, a lot of race car drivers would be talking in high, squeaky voices). If you don't want to use this type of system, the next best systems are:

— Lap belt with double shoulder straps (used in most military aircraft).

— Lap belt with *single* diagonal shoulder strap (a fair compromise between cost and effectiveness).

— Lap belt only (better than nothing, but you'd better wear a helmet if you care about your head or teeth).

— **System Strength** — Here's how the load is distributed in a typical crash impact:

| Item | Ratio of Total Load[2] | Load |
|---|---|---|
| Lap Belt | 67% | 6000 lb[3] |
| Shoulder Harness | 40% | 4000 lb |
| Lap Belt Tiedown Strap | 25% | 2500 lb |

To handle these loads, the various straps must be securely anchored to a solid part of the vehicle. If it's necessary to bolt the attachment point through sheet metal, use a large washer for a backing plate. This will help distribute the force. Use heavy-duty, good quality bolts. The webbing for the lap belt should be a minimum of 2-1/4 inches wide and 3/32-inch thick. For the shoulder harness and tiedown strap, use a minimum width and thickness of 2 inches and 3/32-inch, respectively. Metal-to-metal buckles are the only way to go, as the old-fashioned cam-type will slip and is prone to accidental release.

— **System Geometry** (See Illustration) — Are you a do-it-yourselfer? This drawing shows what you should shoot for when installing any restraint system. Distance A, between the seat reference point and the lap belt anchor point, should be 2" to 2-1/2". The lap belt should have a "pull-off" angle as shown in B. The seat cushion angle and seat back height (C and D) should be no real problem, as most seats will be close to these dimensions. The shoulder harness "pull-off" angle (E) is designed to prevent you from twisting out of the harness under a side load. On a double-strap harness, both straps should run through a guide to keep them from slipping off the side of the seat. The lap belt tiedown strap (F) should be attached so as to hold the lap belt at a "pull-off" angle of 45° — 55°. If your system doesn't have this strap, just install the lap belt as shown. Your system should be snug! Slack in the belts is bad news for both your bod and the belts.[4] An inertial reel that locks on impact is the best solution to the mobility vs fit problem. Anyway, keep 'em tight, no matter what type of system you have. One final note: This system is X-rated! Infants and small children (less than four years) should be restrained by specially designed infant carriers or child restraint systems. Most car dealers and supply houses can provide you with these restraint devices.

[1] Usually called an "anti-submarining strap."

[2] 200 lb individual, 40G load. Know why they don't add up to 100%? Since there is always some slack in the system, dynamic overshoot causes a higher ratio of the total load to be absorbed by the three restraint systems. This, coupled with the fact that the human body is not a rigid object, causes a total load to exceed 100%.

[3] Each belt tiedown should sustain 4000 lb to provide for asymmetric loads.

[4] Take a slack length of five pound test line. It will take a steady five pound pull O-K, but if you jerk it with five pounds, it breaks. Engineers call this "dynamic overshoot."

*The following poem was written for the funeral services of an AT-28 pilot at Udorn Afld, Thailand. The "little guys" in the title refer to the Meo, Laotian, and Thai pilots who flew the '28 and were never fully recognized for their bravery and sacrifice. Lt Col Pratt is presently assigned as an instructor at the Air Force Academy.*

## WORDS FOR DON MORRIS, DET 1, 56th SOW
## (AND ALSO FOR ALL THE LITTLE GUYS)

HALF A CENTURY GONE, AN IMAGE PERSISTS, BORN
   WHEN SPADS AND FOKKERS DUELED
   (THEY RARELY REALLY FOUGHT):
MEN WITH TINY AIRPLANES, SHINED BOOTS, SMILES,
   AND SCARVES;
WHINE OF WOUND-UP ENGINES, TORQUE, SMELL AND
   CHATTER OF GUNS;
WATCHING FOR WHIMS OF WEATHER OR A BLOWN JUG.

NOW, TECHNOLOGY INTRUDES.
PILOTS IN THEIR AIRCONDITIONED WORLD SEEM
   FAR ABOVE ALL THAT.
SOMETIMES.

THERE ARE STILL A FEW WHO STRAP INTO SMALL BIRDS,
   CALL CLEAR, COUGH FROM BACKFIRE SMOKE, GROAN
   OFF THE GROUND AND SHUDDER SKYWARD,
BOMBS RIGGED WITH BALING WIRE AND WOOD BLOCKS,
   HANGING UPON A PROP.

THESE COULD CARE LESS ABOUT REFUELING TRACKS OR
   RADAR PLOTS.
THEIR NEED IS TO DODGE THUNDERSTORMS, SKIM PEAKS,
   KEEP LEAD IN SIGHT.
BOMB-LADEN TO CLIMB ABOVE THE CLOUDS IS TO STAGGER
   ON THE EDGE OF A STALL.
IT IS ENOUGH TO REACH THE TARGET, HIT IT, AND RETURN.

THEIR TEXTBOOK WRITTEN FOR AN OLDER WAR,
THESE PILOTS FIGHT, AND SOMETIMES DIE, IN THIS ONE.
IT IS GOOD TO KNOW THAT SOME MEN
   STILL FLY WITH SCARVES AND LAUGHTER
AS REAL PILOTS ALWAYS HAVE
   AND ALWAYS WILL.

By Lt Col John C. Pratt
from "The Laotian Fragments"

TACTICAL AIR COMMAND

# Maintenance Man Safety Award

Technical Sergeant Gilberto G. Chavez, a radar technician in the 314 Avionics Maintenance Squadron, 314 Tactical Airlift Wing, Little Rock Air Force Base, Arkansas, has been selected to receive the Tactical Air Command Maintenance Man Safety Award for March 1974. Sergeant Chavez will receive a certificate and letter of appreciation from the Vice Commander, Tactical Air Command.

TSgt Chavez

TACTICAL AIR COMMAND

# Crew Chief Safety Award

Sergeant John W. Stuckey, Jr., an F-4E crew chief in the 1 Organizational Maintenance Squadron, 1 Tactical Fighter Wing, MacDill Air Force Base, Florida, has been selected to receive the Tactical Air Command Crew Chief Safety Award for March 1974. Sergeant Stuckey will receive a certificate and letter of appreciation from the Vice Commander, Tactical Air Command.

Sgt Stuckey, Jr.

TACTICAL AIR COMMAND

# Ground Safety Man of the Month

Staff Sergeant Kenneth R. Matuska, Avionics AGE Technician, 474 Avionics Maintenance Squadron, 474 Tactical Fighter Wing, Nellis Air Force Base, Nevada, has been selected to receive the TAC Ground Safety Man of the Month Award for March 1974. SSgt Matuska will receive a certificate and letter of appreciation from the Vice Commander, Tactical Air Command.

SSgt Matuska

# LETTERS TO THE EDITOR

Editor

I anxiously await TAC ATTACK each month and jump into the articles with relish, as I'm sure everyone does throughout TAC.

I would like to address my comments to the art work. The layout and the cartoons are super, and Fleagle remains great. However, the magazine has the worst art work I have seen. It is really BAD! It appears to have been done without research and with little knowledge of commercial art techniques. How about it – there is bound to be better stuff in TAC than that.

February's P-47N cover and P-39 are examples. Do you ever look at the INTERCEPTOR? C'mon guys.

Maj. Robert E. Peters
Resident Fighter Pilot
27 Supply Squadron
Cannon AFB, NM 88101

***Art seems to be a very subjective thing – see below.***
Ed

Editor

I just finished reading the February issue of TAC ATTACK and felt compelled to compliment you on the fine work you are doing. I was especially taken with the photograph of the F-4 on page 12 – it shows exceptional artistic ability.

As I am presently stationed at Kunsan AB, Korea, I have the means and funds to have a photo, such as this, made into a full-size oil painting. If it is at all possible, would you please send me a copy of this picture? I will pay any fees necessary to cover your expenses. Your assistance in sending me a copy would be greatly appreciated.

Again, I extend my compliments on a finely produced, informative magazine. Keep up the good work, you're a true professional.

Sincerely

SSgt Mark V. Ziemba
Box 478
APO San Francisco 96264

***We normally can't send photos to our readers, but we did have an extra copy of this one – hope you can use it.***
Ed

Editor

I find that your magazine is a fantastic publication and one that, I am afraid to say, is very hard for me to find. Our squadron safety office gets one copy every month and that one copy seems to disappear before I can get a chance to read it. I was wondering if it is possible to get a subscription delivered to my home where I can sit and read without the fear that someone will swipe it. If there is a charge, I will gladly pay it for I feel that the information contained inside TAC ATTACK not only applies to those pilots who fly all by themselves, but also to those pilots who must use hand-to-hand combat in the cargo compartment in order to get seat time.

If it is possible to have this magazine sent to my home, I have included my home address. If not, I guess I'll just have to fight a little harder to get my hands on one. THANK YOU.

1st Lt Stanley R. Kays
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McClellan AFB, CA 95652

***Thanks for the kind letter – this may be a good chance to explain our distribution system. We can't give personal subscriptions to the magazine. We attempt to give an equitable distribution to all units through normal military channels. Since your squadron uses an aircraft also operational in TAC, we will look at your requirements and see if we can't provide enough copies to go around.***
***Ed***



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# TAC TALLY

| | TAC MAR | TAC Thru Mar 1974 | TAC Thru Mar 1973 | ANG MAR | ANG Thru Mar 1974 | ANG Thru Mar 1973 | AFRes MAR | AFRes Thru Mar 1974 | AFRes Thru Mar 1973 |
|---|---|---|---|---|---|---|---|---|---|
| TOTAL ACFT. ACCIDENTS ► | 3 | 8 | 12 | 2 | 5 | 5 | 1 | 3 | 1 |
| MAJOR ACFT. ACCIDENTS ► | 2 | 7 | 9 | 2 | 5 | 5 | 1 | 3 | 1 |
| AIRCREW FATALITIES ► | 3 | 5 | 8 | 1 | 4 | 1 | 0 | 1 | 2 |
| TOTAL EJECTIONS ► | 4 | 9 | 9 | 1 | 3 | 3 | 0 | 1 | 1 |
| SUCCESSFUL EJECTIONS ► | 3 | 8 | 4 | 1 | 1 | 2 | 0 | 1 | 0 |

## TAC'S TOP "5"

**FIGHTER/RECCE WINGS**

| ACCIDENT FREE MONTHS | Unit | Command |
|---|---|---|
| 72 | 33 TFW | TAC |
| 40 | 162 TFTG | ANG |
| 39 | 4 TFW | TAC |
| 24 | 127 TFW | ANG |
| 21 | 31 TFW | TAC |

**AIRLIFT/REFUELING WINGS**

| ACCIDENT FREE MONTHS | Unit | Command |
|---|---|---|
| 103 | 440 TAW | AFRES |
| 104 | 136 ARW | ANG |
| 68 | 316 TAW | TAC |
| 57 | 126 ARW | ANG |
| 56 | 463 TAW | TAC |

**SPECIAL UNITS**

| ACCIDENT FREE MONTHS | Unit | Command |
|---|---|---|
| 135 | 130 SOG | ANG |
| 115 | 2 ADGP | TAC |
| 96 | 143 SOG | ANG |
| 84 | DET 1, D.C. | ANG |
| 60 | 135 TASG | ANG |

## MAJOR ACCIDENT COMPARISON RATE 73–74

| | | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TAC | 73 | 5.0 | 5.1 | 5.1 | 4.2 | 4.3 | 5.0 | 4.8 | 4.4 | 4.2 | 4.1 | 4.2 | 4.1 |
| | 74 | 4.5 | 5.4 | 5.3 | | | | | | | | | |
| ANG | 73 | 8.5 | 8.6 | 6.8 | 5.0 | 4.7 | 5.1 | 4.3 | 4.2 | 4.6 | 4.2 | 3.9 | 3.7 |
| | 74 | 7.2 | 8.6 | 9.6 | | | | | | | | | |
| AFRes | 73 | 14.9 | 6.7 | 4.1 | 3.2 | 1.8 | 1.5 | 1.3 | 1.1 | 1.0 | .9 | .9 | .8 |
| | 74 | 0 | 16.4 | 16.5 | | | | | | | | | |

# SAFETY 76