

TAC ATTACK

JANUARY 1968



ejection...
see pgs 4, 18

for efficient tactical air power

TAC ATTACK

JANUARY 1968

VOL 8 NO. 1

TACTICAL AIR COMMAND

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TACRP 127-1

Articles, accident briefs; and associated material in this magazine are non-directive in nature. All suggestions and recommendations are intended to remain within the scope of existing directives. Information used to brief accidents and incidents does not identify the persons, places, or units involved and may not be construed as incriminating under Article 31 of the Uniform Code of Military Justice. Names, dates, and places used in conjunction with accident stories are fictitious. Air Force units are encouraged to republish the material contained herein; however, contents are not for public release. Written permission must be obtained from HQ TAC before material may be republished by other than Department of Defense organizations.

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Angle of ATTACK

There is no single, all-encompassing solution to aircraft accidents. This is logical, of course, because there are many separate and distinct factors which cause accidents. Therefore, our accident prevention efforts go out in many directions. Bit by bit, we whittle away at the previous year's accident rate. In TAC we have steadily reduced our rate for the past three years. But this has been a few tenths of a point each year. And it has taken a lot of effort by all hands to do that.

Think for a moment how we could reduce our accidental losses if we eliminated just one of the many accident causes...just one category of accidents.

I'm thinking specifically of pilot-caused accidents when there is an instructor pilot aboard the aircraft. As this is being written, there have been 16 major aircraft accidents in TAC during 1967 that fall in this category. This doesn't include the accidents caused by other factors when an IP just happened to be aboard.

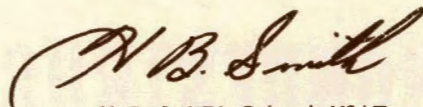
Those 16 constitute 25 percent of TAC's major accidents last year. Put another way, our accident rate for 1967 could have been reduced by 2.3 points...or, from about 8.3 to 6.0...if we had eliminated all pilot error accidents when an IP was flying with the pilot.

These are perhaps the most avoidable accidents of all. In our concentrated training programs we take some calculated risks. But we temper those risks by flying an instructor with the student during early flights...for instance, in assault landings or air combat maneuvers. When an accident occurs while the instructor is supposed to be monitoring the student...it's mighty hard to come up with an excuse.

The instructor is aboard for one single purpose. And the great majority of our IPs are doing a tremendous job of shepherding their students safely through hazardous flying routines. But when a handful of them sat there with their arms folded too long last year, we suffered 16 major accidents.

Let's place special emphasis on this one area in 1968...and eliminate the inexcusable, IP-involved accident.

Look at all the lives and hardware we'll save!

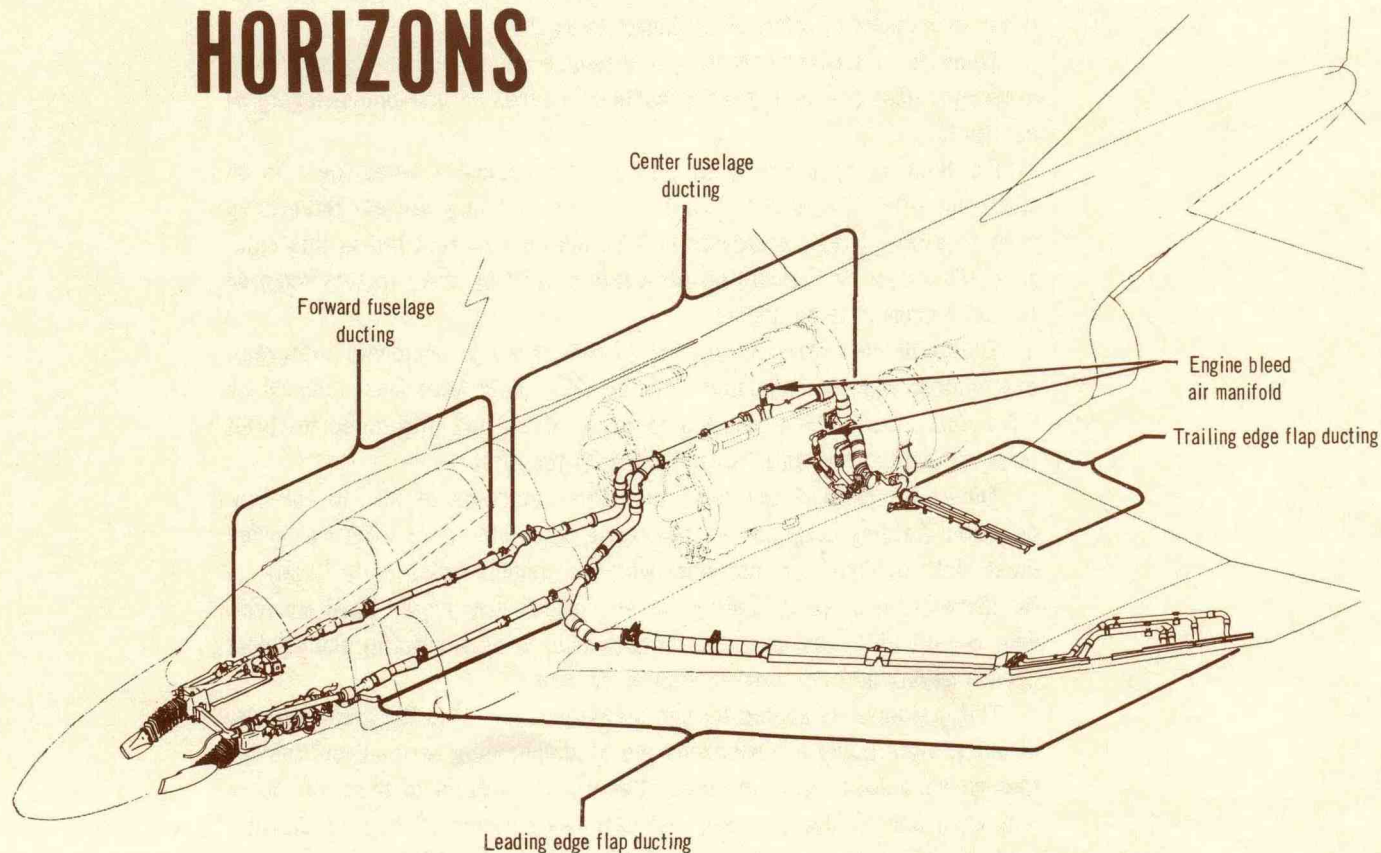


H. B. SMITH, Colonel, USAF
Chief of Safety

NEW

HORIZONS

by Capt Glenn R. Chambers and
MSgt Clyde L. Brown, Jr.
NDI Monitors, Hq TAC



IN

NONDESTRUCTIVE INSPECTION

The Mobile Nondestructive Inspection (NDI) Team from Langley Air Force Base recently logged another first in applying advanced inspection techniques. In four days, two men X-rayed the entire bleed air system of an RF-4C aircraft, performing an inspection that would have taken a four man crew more than three weeks.

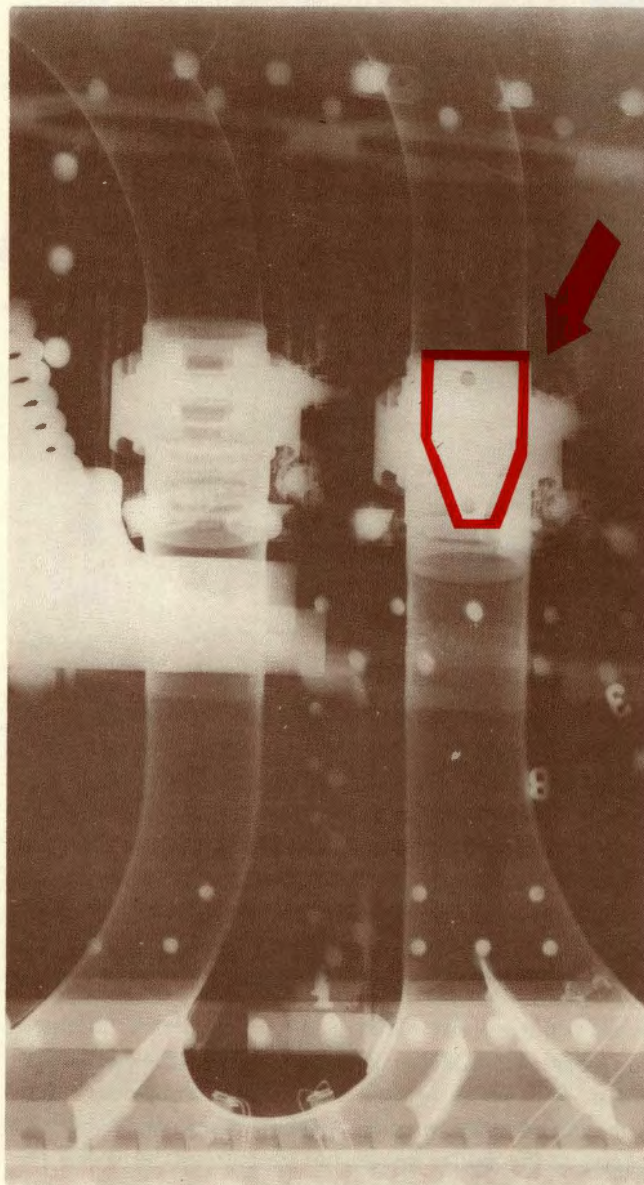
It all started when maintenance people at Shaw AFB found that a boundary layer control valve had disintegrated during engine operation. The failure scattered bits and pieces of the valve through the maze of ducting that carries bleed air throughout the aircraft. Only the size of the plumbing in the system could limit the distribution of the bits and pieces as they were propelled by the 1400-pound air flow.

The maintenance troops were faced with looking for a destructive needle in a very expensive haystack. To make a complete visual check they would have to remove and inspect every piece of ducting and every valve in the system. In addition, they would have to remove many other components to provide access to the bleed air components. Estimates for the inspection ranged from 21 days to 90 days for a four-man crew.

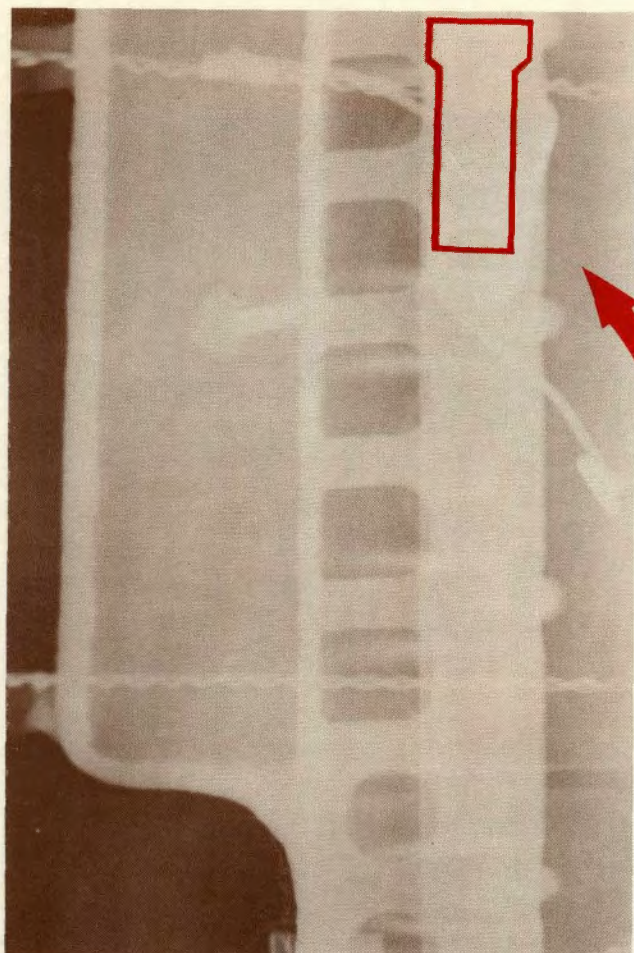
Fortunately, the maintenance supervisors at Shaw had heard about the capabilities of NDI and decided to give it a go. They requested NDI assistance and a mobile team was dispatched from Langley AFB. Two men, skilled in radiography, ultrasonic, eddy-current, penetrant, and magnetic inspection techniques were in place at Shaw in less than 24 hours.

Under the direction of MSgt Donald Findlay, the Langley team familiarized themselves with the aircraft and studied diagrams of the bleed air system. In short order they assured themselves that they could use X-ray technology to locate the pieces of the failed valve. Since this was the first known attempt to use X-ray or radiography on the bleed air system, they had to develop each X-ray exposure technique step by step.

As they progressed through the inspection, each



Note bracket (marked by arrow) which lodged in duct coupling. X-ray shows left-hand duct is not blocked.



X-ray technicians found this screw and spring from the failed BLC valve which had traveled through boundary layer air ducts and lodged beyond wing fold of the left wing.

area required revisions to the techniques to compensate for variations in material composition and thickness. Numerous complications had to be overcome, but the results were gratifying. They located every piece of the faulty valve and pinpointed the areas requiring work so that aircraft down time was minimized.

The two-man NDI team had completed the inspection in four days. More important, the radiography technique that they developed will cut future inspections of this type to less than two days.

The NDI team at Langley is only one of three mobile teams available to TAC units. McConnell AFB provides NDI support for bases in the central states. Luke AFB covers the west, and the Langley team covers the east.

Base-level NDI capability has been established at MacDill, Lockbourne, and Nellis. Ten more bases are to have the capability before the end of June this year. TAC's goal is to have an NDI lab at every base.

When base-level NDI is available, the maintenance manager will have an unprecedented opportunity to program his maintenance based on need ... not time. Cracks, corrosion, and material defects, previously allowed to progress undetected until failure occurred, can be located and monitored by NDI without disassembling the aircraft. Repair can then be scheduled, based on seriousness of the defect. Application of a comprehensive NDI evaluation before input to IRAN can provide a more realistic work package. In fact, the range of NDI is so great that the only limitation to where it can be used is the imagination and experience of those using it.

A few examples of recent NDI applications are:

- X-ray inspection of high pressure air bottles.
- Ultrasonic and eddy-current inspection of F-100 wings to detect cracks.
- Ultrasonic inspection of C-130 main landing gear support beams.
- Eddy-current inspection of J-75 engine turbine blades.
- Ultrasonic inspection of F-4 flight control actuators.
- X-ray inspection of J-79 gear boxes.
- X-ray inspection of C-130 dry bays.

Until base-level capability is established at your base, use the mobile teams. The procedure is outlined in TAC Regulation 66-9. These teams can save you manhours, material, and down time. If you're in doubt about the use of NDI for a particular problem, call the NDI lab serving your area or your NDI monitor at Numbered Air Force.

It may turn out to be a very productive call.

OFF COURSE . . . ??

The letter came from a ski resort owner who had just installed a new chair lift and gondola for the pleasure and convenience of his customers. He was proud of it. He didn't want it damaged.

He was also proud of the jet fighters he often saw flying up the valleys near his resort. They were a symbol of security. They helped make it possible for people to come and use his facilities. He didn't want to see any of the jets damaged, either.

In the letter he said, "...we have seen many jet aircraft fly through this saddle. In fact, just two days ago an unidentified jet flew under the cable. Memories of the jet collision with the tramway cable in France a couple of years ago are very fresh."

One look at the photo he sent with his letter is enough. It tells you all you need to get the picture.

The closest low-level route to this particular ski area is at least fifteen miles away.

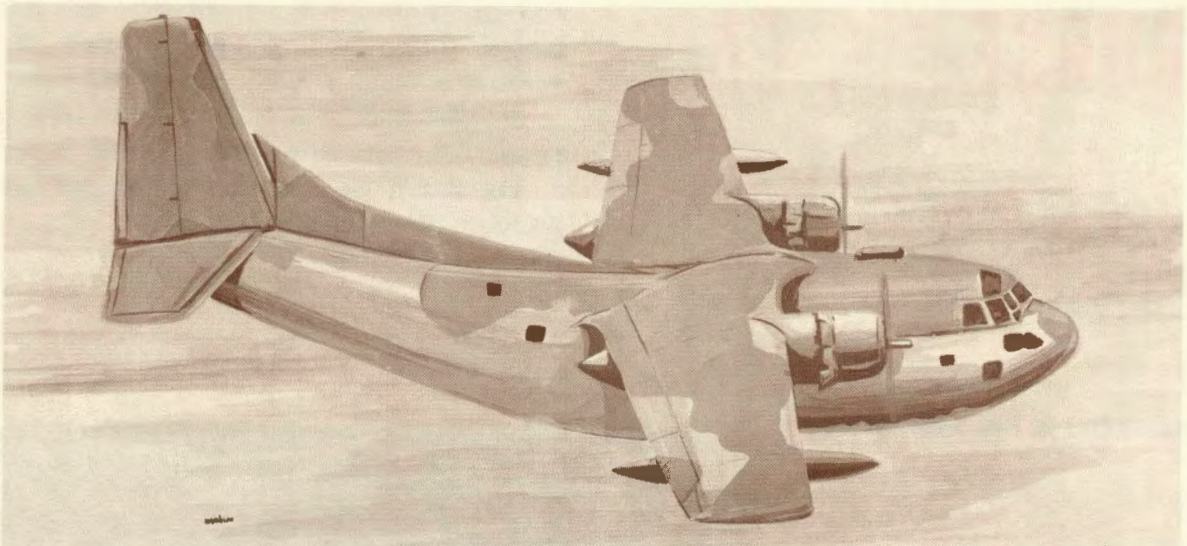
an unidentified jet flew under the cable.



Photo courtesy Tom Johnston

TACTICAL AIR COMMAND

AIRCREWMAN OF DISTINCTION



Staff Sergeant Jesus Nunez, 319th Air Commando Squadron, England Air Force Base, Louisiana, has been selected as a Tactical Air Command Aircrewman of Distinction.

Sergeant Nunez was the Flight Mechanic aboard a C-123 aircraft, on a flight midway between Guam and Wake Island, when an intense flash fire started in the cargo compartment. The raging flames spread quickly. Rubber fuel lines and a ferry fuel tank containing a thousand gallons of highly explosive aviation fuel were only five feet from the fire. Sergeant Nunez immediately shut down the cargo compartment heaters to eliminate the source of the fire. His

efforts were hampered by smoke, fire, and toxic fumes. Disregarding personal safety he used hand extinguishers to prevent the fire from spreading. He was able to protect the fuel tanks and other parts of aircraft from the blaze. Although nearly overcome by smoke and fumes, Sergeant Nunez continued to fight the fire until it was extinguished. The aircraft was able to complete the mission successfully.

Sergeant Nunez' professional skill and calmness in handling an uncommon and dangerous situation which prevented possible loss of life and aircraft readily qualify him as a Tactical Air Command Flight Mechanic of Distinction.

PLAN YOUR ACCIDENT

You might as well figure on it. Your chances are 3 to 1 that your accident will happen! If you're a person who thrives on drawing to an inside straight, we suggest you turn the page. It's doubtful that a plunger would be interested in a pot of smashed cars at low 3-1 odds.

Now about your accident. You and two other auto owners are competing for a non-accident year in 1968. Two of you will be successful. This is the annual national average, based on a ratio of total autos to total autos damaged. Your chances for an accident are good. It may be a fender bender or a fatal smash-up, which by the way, killed more than 4,000 persons per month last year.

Planning your accident does seem a little gruesome. Maybe you're a good driver. And you prefer planning for one of the two accident-free spots.

You can start by following all the rules of the road. Keep your car in the best possible mechanical condition. And avoid your accident by consistent defensive driving. Good planning! Maybe your accident won't happen.

Of course, we should remind you that nearly 50 percent of the fatalities occur in autos in which the driver wasn't at fault. And one more thing... only about 15 percent of the drivers involved in accidents are habitual offenders. The rest are drivers like you, with good records. Almost accident free.

Add one more fact. If you're a family man with two cars, the odds change... and not in your favor. Your family, as a unit, has about a 50/50 chance of occupying an auto which may sometime this year come to a sudden, smashing stop.

Back to your accident. Admitting that it may happen is the beginning. Your immediate concern is what happens to you or your family when it occurs.

Can you teach your family to instinctively collapse into a heap before impact? This helps, according

to some experts. Prevents broken bones, they say.

How about an electronic impact shield to prevent you and your family from crashing through the windshield? Or to prevent them from being thrown to a hard pavement? Or ground by crumbling metal as it's shape changes from the impact of surging bodies.

Great idea! We'll be the first to tell you about it if science ever develops one. Until then, how about this...

A system was introduced several years ago which has reduced auto accident injuries by more than 33 percent. It is based on the electronic shield principle. "Hold the auto's occupants in a secure position while the auto frame and body absorb the damaging forces of collision and sudden stop."

Your car's seat belts are the best injury prevention system yet devised. Your accident plan must specify that belts be used by all occupants, on all trips, long or short, fast or slow. Here's why:

Over 80 percent of all accidents happen within 25 miles of home and at speeds under 40 miles per hour. And more than 70 percent of all accidents occur on straight roads and streets, in clear, dry weather, during moderate traffic. Most vehicles impacting a solid object at 25 miles an hour provide a crash-absorbing envelope for the occupants... if they are belted securely in their seats.

Without seat belts, the driver and passengers will be tossed like bullets against the interior metal and glass of the car. Or zoom through a sprung-open door to sustain the bat-splitting force of a big leaguer's home run swing.

Now if this rather morbid illustration is too distressing to consider, forget your planning. Be a gambler, your accident may never happen. And besides, the big leaguer can always replace his bat.

No warning! That's the way it is. Victims fall, sometimes fatally, not knowing how or why she struck. She usually responds faithfully to her masters but has been known to seemingly turn on those most devoted to her. She's a highly sensitive creature. Unexpected movement, or variations of regular routines and commands, will sooner or later lead her to certain retaliation. Men have been squeezed in her snapping jaws, felt the sting of her hidden teeth, been trampled under her unyielding hooves, and scorched by her fiery blasts.

No, she's not caged in a zoo or roaming the hidden jungles. She's the flight line pet of airmen, affectionately called...their bird.

NO WARNING

The airplane was created to carry man to places where his limited faculties will not allow him to go alone. The machine is designed much like man when you consider his structure of levers, control cables, hydraulic systems sensing devices, and energy converters.

Though today's airplane incorporates all of these systems, it lacks man's most important characteristic...deliberate action. This gives him an edge over his creation. But let man's checklist vary, or let him act without careful deliberation, his bird's loyalty will quickly deteriorate.

Because of this, his bird can be a dream or a nightmare. It will wait on the ramp or soar to the edge of space. Or it can strike with the force of a trapped tiger. The creature's personality is the result of man's deliberate action. It is stimulated by programmed response.

Compare man's bird to his electronic computers. The accuracy of his machines depends on the quality of the preset circuits. So it is with his birds. Programmed response is assured by established operating procedures.

Example. A pilot and his ground crew were waiting for a launch signal at the QRA (Quick Reaction Alert) area. Their bird was cocked and ready.

The scramble routine was not new to them. The aircraft commander had flown three years with ADC. The ground crew had worked quick launches before. Nevertheless, there seemed to be some doubt about the sequence of events.

The Oplan wasn't much help. It didn't spell out

procedures for the QRA launch. Nor was the subject covered by either aircrew or ground crew briefers. If a programmed procedure existed, no one seemed very familiar with it. But everyone had been through the routine before...sometime, someplace. Apparently this was good enough.

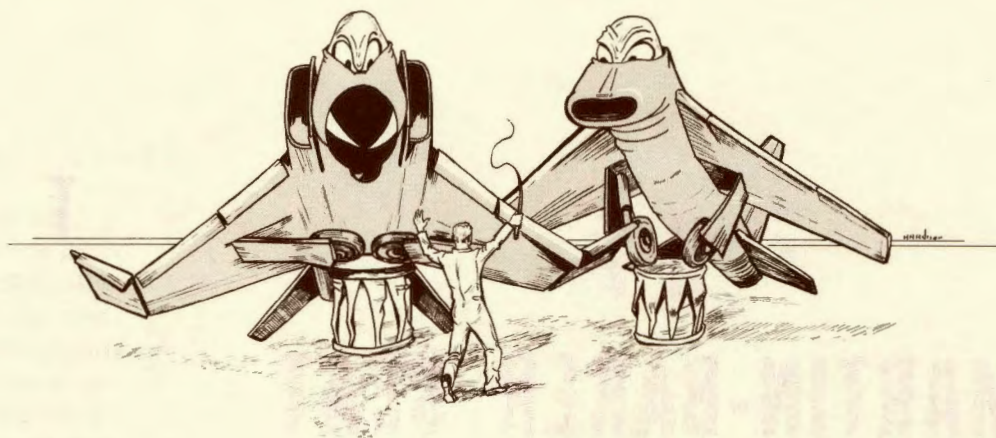
The aircraft commander did arrange a last minute flight line briefing. He directed that the talker cord would not be used and reviewed the published checklist procedures. Then he altered them!

The horn sounded. The launch was underway and the countdown began. Engines were started. Here, another deviation occurred.

The pilot ran power checks with a ground crewman under the aircraft, altering the procedure he briefed only minutes before. He had said run-up would begin only after both ground crewmen were in his sight.

The crew chief was apparently befuddled by the aircraft commander's choice of power check signals, rotating hand with index finger extended. The pilot signaled twice before the chief rather guardedly returned it. He permitted the run-up while his assistant was still buttoning panels under the bird. There was a good reason for the chief's slow response. There were no directives stipulating hand signals for power checks at that time.

Seconds later, the pilot nodded a signal to taxi. The crew chief mistook this for engine number two power check. He responded with thumbs up just as his assistant, still under the bird, moved toward the remaining chock cord. The pilot increased power to



taxi. Both ground crewmen thought the run-up stage of the flightline-briefed checklist was still being carried out.

By now, programed response was completely out of phase. Man was losing control of his creation. His deliberate actions were being fouled by faltering communications, shortcuts, irregular and unfamiliar procedures.

The left tire bulged, distorted by taxi power against the restraining chock. The ground crewman moved from the pull-chock position to the front of the wheel, hoping to avoid flying debris should the tire explode. He made it! But so did the wheel. It jumped the chock and came right at him!

The bird struck!

The plane trampled the unsuspecting airman, crushing both legs with such force that one required medical amputation above the knee.

Retaliation was complete.

Another example. A Transient Alert crew was preparing a Phantom for launch. The aircrew had landed the previous day and was starting another leg of a navigational proficiency cross-country.

The aircraft commander had briefed the crew chief. He covered signals and procedures, knowing that a talker cord was not available. He warned of the auxiliary air door area, and reminded the chief to pull and stow the pins from the Sargent-Fletcher drop tanks.

Engine start was normal. The crew chief secured the external power panels and moved the power cart from the immediate area.

During this time, a second ground crewman took a position at the left front of the F-4C. The pilot later learned he was the assistant crew chief. The crew chief pulled the pin from the left external tank. He walked in front of the bird toward the right external tank.

The pilot gave the flap-check signal. The assistant noted that his crew chief was outboard of the pylon and clear of the flaps. He returned the signal.

Flight control check was next on the list. The bird seemed content with the routine launch as the assistant crew chief noted OK controls on the left. He moved to the right side just in time to see the crew chief slide from the front of the external tank to the ground. His chest was fatally crushed.

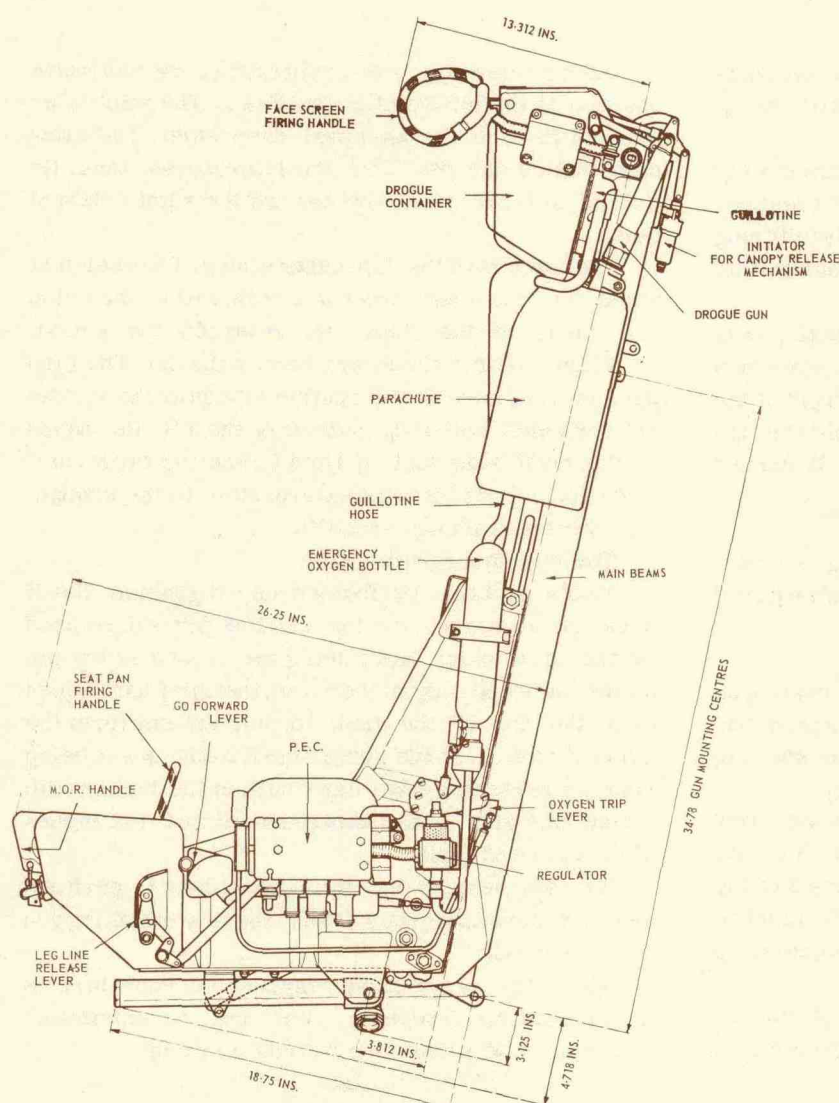
The bird had struck again!

Man's creation performed as programed. But it made no allowance for the shortcut procedure used by the crew chief. Not finding the ground safety pin on the outboard side of the pylon, the chief had leaned over the top of the tank to pull the pin from the inboard side... at the same time flap check was being made. The leading edge flap crushed the victim with a vise-like grip. It had lowered to within 2 1/2 inches of the external tank.

As man designs his flying machines to perform new and more important tasks, there's one thing you can be sure of...

When the programed response of your bird is interrupted by irregular, short cut, or unfamiliar procedures, it will strike without warning!

H-7 MARTIN-BAKER SEAT



The F-4 will soon be equipped with a new Martin-Baker seat. It will look much like the current seat, so what's new about it? Well, this one has some design features so significant that the only real placard on the ejection system will now be placed by aircrew tolerance to windblast and high-Q effect, and not by system structural limitations. Here's a quick preview of the new system, its features, and how it works.

SYSTEM DESIGN FEATURES

The new Martin-Baker seat differs from the current version in several major areas. It has a rocket-augmented ejection system that will permit greater operational latitude with less G forces being applied during ejection. Rocket augmentation permits the use of a reduced charge in the main cartridge, which lessens the G onset rate. The system provides ejection height more than adequate to allow seat/man separation, parachute deployment, and safe landing even under zero-zero conditions. The ejection envelope for the new seat will be from zero-zero up through 600 knots at any altitude. Although ejection is initiated in the same manner as with current seats...by pulling the face curtain or the D-ring, a new "emergency ejection sequencing system" provides for maximum safety and the elimination of delays resulting from aircrew injury or indecision.

by Jack Sheehan
Flight Safety Dept
McDonnell Douglas Corp.

Let's take a look now at some of the specific improvements over the old seat.

ROCKET PACK

This features a ten-tube solid rocket propellant manifolded together with the thrust through three nozzles on each side of the seat bottom. The rockets are ballistically initiated when the seat has risen up the rails far enough to pull the sear from the initiator and fire the rocket system. To compensate for the effect of vertical position of the seat and its effect on c.g. versus thrust line, the rocket pack and nozzle are proportionally deflected to the crewman's seat position.

PARACHUTE

The new seat has a 29.7-foot Sky Sail parachute, which provides a lower descent rate than the 24-foot canopy now used.

INERTIA REEL

Under flight conditions, the shoulder harness reel has inertial locking capabilities, and will lock up whenever excessive longitudinal G forces are pulled by the crewman's movement. When the Gs are withdrawn, manual unlock of the shoulder harness is required. Immediately before ejection, the reel will power retract and lock up to assure better ejection posture and restraint.

EMERGENCY EJECTION SEQUENCING SYSTEM

This system was developed to provide maximum aircrew safety and eliminate delays brought about by injury or by indecision in the ejection process. Basically, the sequencing system consists of a .40-second time delay in the line to the forward ejection seat main cartridge actuator mechanism, a .30-second time delay in the line to the aft ejection seat main cartridge actuator mechanism, Ejection Sequence Select valve (mounted on the rear cockpit forward console), associated pressure operated initiators, and cockpit gas lines.

By pulling the face curtain or the D-ring, either the forward or aft seat crewman may initiate ejection. However, with the Ejection Sequence Selector valve in the normal or safetied position, a rear seat initiated ejection affects only the rear seat. A forward seat initiated ejection will fire the forward primary initiator, the pressure operated initiators will cause the delay sequence actuator in the rear seat to fire, and the rear seat ejects. Then in sequence, the forward delay sequence actuator causes ejection of the forward seat.

If the rear seat crewman has reason to believe the forward crewman is injured or unconscious, he may, in sequence, eject the forward crewman by placing the Ejection Sequence Select valve

in the open position. He does this by pulling out on the handle and rotating it 90 degrees. He then ejects by using the face curtain or D ring. From here on, the sequence is the same as if initiated from the front seat.

Regardless of the situation, the aft seat always ejects first. This eliminates the possibility of forward seat rocket-blast injuring the crewman in the rear cockpit. Automatic canopy jettisoning and canopy interlock block withdrawal occurs with all seat ejection sequences.

OPERATION

Now that we have an idea of how the Emergency Ejection/Rocket Augmented Seat system works, let's simulate getting all strapped in and run over a sequence of events in an ejection.

First, connect the garters 'kit to man,' and the lap belt. Connect shoulder harness straps and oxygen equipment. Now, let's proceed through a simulated ejection initiated from the forward cockpit.

The pilot initiates the ejection sequence by pulling the face curtain or D-ring. This fires the seat-mounted primary initiator and the expended gas travels to the ballistic manifold. The manifold diverts the gas to the forward inertia reel power retract system, the forward .75-second delay initiator, and the aft seat pressure operated initiators. The initiator gas is ported to the rear ballistic manifold

MARTIN-BAKER SEAT

where it is diverted to actuate the canopy pneumatic shuttle valve which allows the ship's pneumatic system to blow the canopy from the aircraft. The ballistic manifold also diverts gas to the inertia reel power retract system and fires the seat through actuation of the .30-second time delay actuator. The forward .75-second time delay actuator gas actuates the forward canopy shuttle valve and the .40-second time delay sequence actuator fires the seat.

Now, let's consider an aft cockpit initiated ejection, in which both seats are to be fired in

sequence. This is done by pulling out and rotating the Ejection Sequence Select Valve to the open position. Pulling the face curtain or D-ring then starts the ejection sequence. The seat primary initiator operates and the hot gas fires the pressure operated initiator, the rear seat power inertia reel, the .30-second time delay sequence actuator, and shuttles the canopy pneumatic valve. The system sequence from this point is the same as the pilot initiated, except that the forward canopy jettisons and pulls the interlock block out of the seat firing linkage.

This allows the .40-second delay sequence actuator to eject the forward seat.

Please keep this in mind; the aft crewman may initiate ejection of both seats only if the Ejection Sequence Select valve is open. For the aft crewman to eject himself only, the valve must be in the normal, safetied, position.

On the Air Force system aft seat single ejection, after canopy separation, the aft crewman may continue to pull the face curtain handle (or D-ring), or allow the .30-second time delay sequence actuator to eject the seat.*

SEAT SAFETY PINS	Removed per T. O.
TIME RELEASE TRIP ROD	Connected.
CANOPY INTERLOCK BLOCK	In place and cable secured to canopy.
SCISSORS SHACKLE	Jaws closed.
SCISSORS SHACKLE TIE DOWN	Thread not passed through loop.
FIRING MECHANISM	Banana links connected to sear.
DROGUE WITHDRAWAL LINE	Bolted to drogue gun and over all lines.
DROGUE GUN PISTON SHEAR PIN	Secure.
TOP LATCH MECHANISM	Plunger flush with housing.
PARACHUTE WITHDRAWAL LINE	Quick disconnect connected, link line routed through guillotine jaws, safety line outside of guillotine jaws.
DROGUE GUN TRIP ROD	Connected.
ROCKET PACK INITIATOR LANYARD	Connected.
SHOULDER HARNESS	Secure, and test snubbing of inertial reel.
LAP BELT/STICKER CLIPS	Secure.
LEG LINES, GARTERS	Secure.

EJECTION SEAT PRE-FLIGHT

To give you an idea of how new preflight procedures compare with current methods, the step-by-step operations to prepare the seats for flight are outlined below.

* There are minor, but important, differences between the Navy and Air Force installations of this new seat. If you are riding the Navy version, be sure to check with the egress specialists in your outfit.

GRIM GLIDING

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

The Herky hurricane-hunted for over six hours, working its way in and around the big storm. In the clear at FL 250, the pilot flew a box pattern gathering additional data along the edge of the storm. Clouds loomed ahead so he turned on all his anti-icing equipment. His radar weather scanning didn't pick up significant precipitation returns along his flight path.

After a few minutes in the soup he ran into heavy snow showers and started to pick up structural icing. He pulled back power across the board and began an immediate descent into the warmer air below.

Number One engine flamed out shortly after he started down. Number Four followed quickly, going into a stalled condition. Turbine inlet temperature on Four climbed to 840° C. The pilot noted outside air temperature at -9° C.

Seconds later the inboards tried hard to flame out, leaving the pilot powerless... literally. He re-applied power to Number Three and fortunately kept it running. Hurried effort by the co-pilot restarted Number Two in the air start position. Between both of them they kept the inboards running somewhat erratically.

Now in a 3000 ft-per-minute descent with Number One windmilling, Number Four contributed to overall drag by running in a stalled condition, the prop at flat-blade angle. They tried to feather Number One normally, but had to use manual override to do it. Four's flat-bladed fan feathered fast as advertised. At 11,500 feet both inboards started running smoothly again and the WC-130 held level flight. Happy to be out of glider configuration, the pilot and copilot caught up on a long list of checklist items and readied One and Four for airstarts.

They started on the right. Number Four responded by overspeeding to 104.5 percent and overtemping to 900 degrees. Before they made their refeathering decision it worked back to normal operating limits. The

pilot suspected a temporary decoupling of the prop on restart of Four and decided to quit while they were ahead. Possible decoupling of Number One during restart, in light of their earlier feathering problems with it, influenced the decision to go home on three engines. They made it okay.

Maintenance inspectors checked the bird and its engines thoroughly. They found no evidence of damage and the engines checked out normally. They concluded that severe structural icing blocked engine airflow to flameout and compressor stall proportions, turning the hurricane hunter into an ice-covered igloo.

The pilot faced a problem experienced by some before him and still to be encountered by many others. Before the days of airborne radar you blundered into heavy precip because eyeballing your way thru clouds had severe limitations. You tried your best, but you couldn't miss them all. That's the reason weather avoidance radar came along. Radar in the hands of a professional should keep you out of dangerous precipitation areas. Why it didn't work in this case isn't explained. Maybe the VFR flying earlier made them relax their vigilance... polite term for complacency.

Even if this were the case, once in the snow showers and icing conditions at FL 250 the pilot still had three good-to-fair options available to him. And one poor one: the one he chose.

First Option. If he had stumbled into a severe icing area without advance warning from his radar operator, the classic, life saving 180 degree turn would help. He'd return to known VFR conditions and have time for an informed judgment... and a chance for his radar capability to help in his decision.

Second Option. Climb into the colder air above him and get out of the snow and freezing rain at his level. After six and a half hours of flight his gross weight should have permitted climbing... if his reaction was as fast as his descent decision.

Third Option. Hold what he had and radar-pick his way thru the thinner precip returns. Outside air temperatures and moisture forms at FL 250 couldn't be as conducive to rapid structural icing as descending a super-cooled airframe to lower levels... at partial power.

Many pilots before him have decided on descent from severe icing with closed throttles and resulting low engine operating temperatures. Some survived; others haven't. Fortunately, the crew survived to remind us of the old question posed on the annual instrument refresher exam. Loosely translated it advised: When caught in severe structural icing conditions, climb into colder air above. ➤

BE SURE !

by John W. Hafley
ATC Consultant
Hq TAC

This is a good rule, whether you are playing golf, driving a car, flying a plane, or controlling air traffic. Most of us aren't an Arnold Palmer, a Jimmy Clark, or an Eddie Rickenbacker. These men didn't win on a gamble, and there just aren't any successful gamblers in the air traffic control business.

The name of the game is BE SURE. Assume something, and you will be caught by Murphy's Law: "If something can go wrong, it will."

A case in point was demonstrated recently at an Eastern Air Force base. Time was about 1830 hours, air traffic was light. The weather was balmy and clear. Then it happened!

A panic call came in on VHF 121.5 from a small civil aircraft. The pilot had run low on fuel, and having spotted the big expanse of runway, made a profound decision...land!

He declared an emergency, was cleared, and made an uneventful arrival at probably the largest airpatch on which he had ever landed his Aeronca Champion.

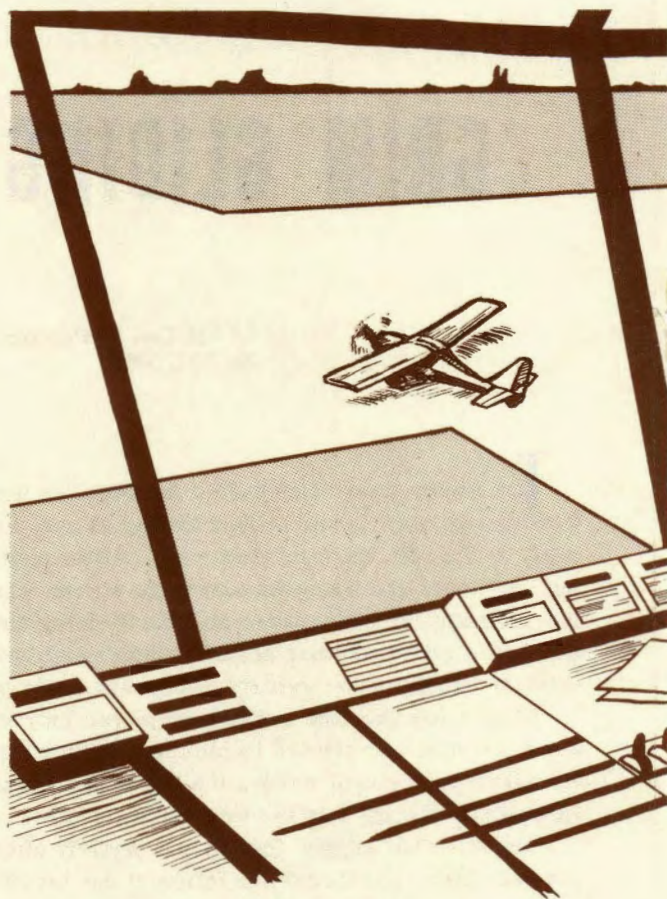
Base ops arranged for five gallons of low octane fuel to see the pilot to a nearby civil field. No sweat? You're right. Except the law was being ignored. Murphy's Law, that is.

During the Champ's refueling, a transient F-100 was cleared to taxi for an IFR departure. It was the only traffic on the airdrome. The fighter's flight plan was processed and Tower read him the clearance as the Aeronca Champ made another profound decision...takeoff!

Taxiing down the parallel he radioed the tower of his intentions. "Eastern Base Tower, this is Aeronca 43 taxiing out for takeoff."

The controller replied on frequencies used during the emergency arrival. "November 8143 Echo, Eastern Base Tower transmitting on one-two-six-point-two. Answer on one-two-two-point-five. Call Eastern Tower on one-two-two-point five!"

But the Champ was not listening for words of caution or encouragement. He was moving toward the runway on a mid-field taxiway.



The F-100 took the active, ran a final power check, and lit his burner just as the civilian visitor turned briskly onto the runway. Without further ado...or runup...he poured on the coal for a rolling takeoff.

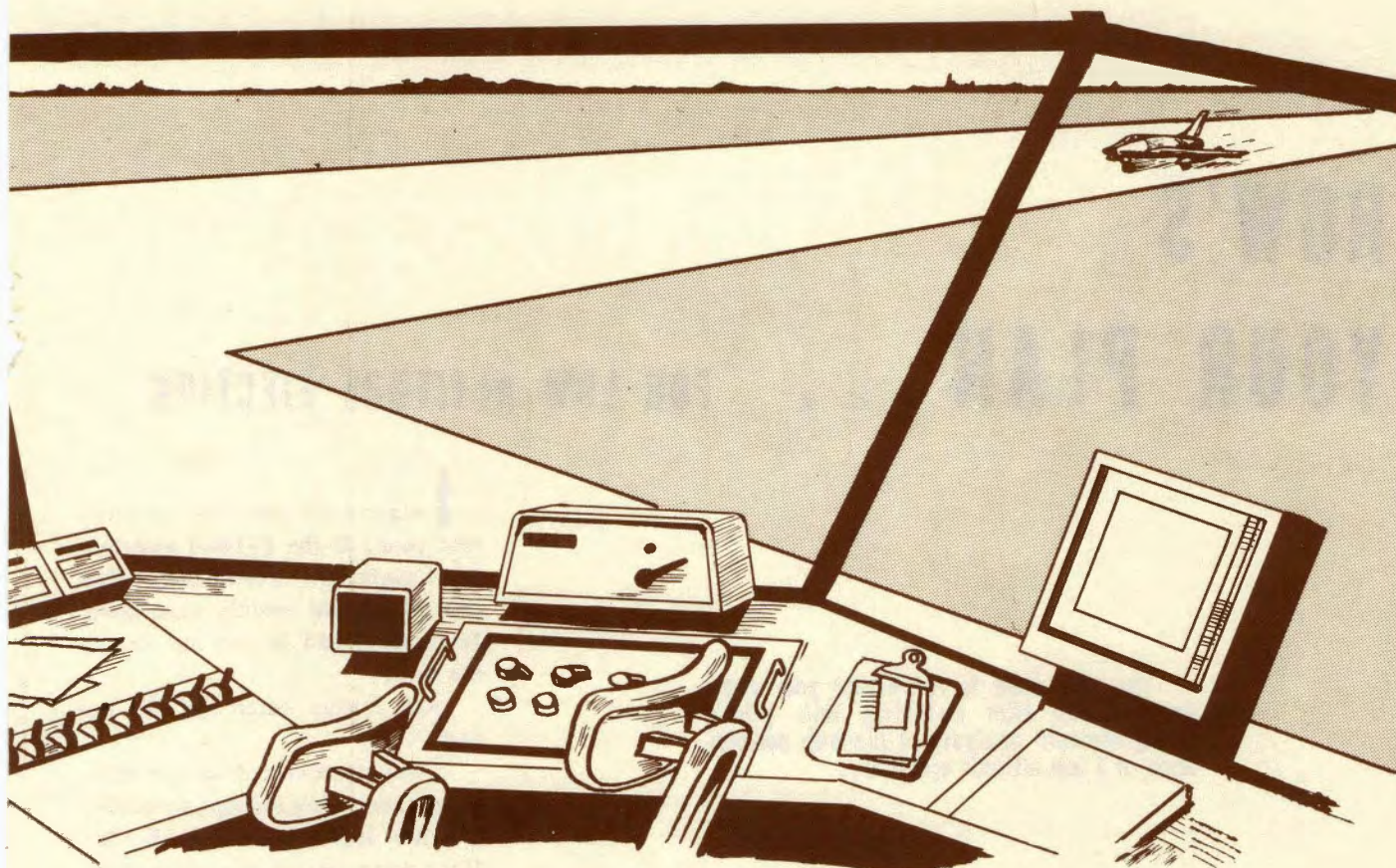
By now, Murphy's law was on the controller's back. He tried to shake it. The tower tapes of 126.2 and 121.5 recorded the struggle for all to hear. "Four Three Echo, this is Eastern Tower. Hold short of the runway! Four Three Echo...hold short of the runway! Acknowledge!"

The F-100 went by the Champ like a charging rhino. The alert F-100 driver saw the Champ and narrowly averted disaster by moving to the left and rotating for takeoff early.

Needless to say, there was one civilian flyer who has learned a lesson to last a lifetime. And there is an air traffic controller who is now a great respecter of Murphy's Law. That's the story friend, sad but true.

When something has gone wrong, hindsight is never a cure. But let's use it to find out why the Law landed on the controller's back.

First of all, the tower controller made every effort to contact the Aeronca pilot when he started



taxiing out. Of course, he was going down the right taxiway, in the right direction, toward the end of the right runway. The controller had talked to the Champ pilot on arrival and assumed the jock would raise him for departure procedure. What happened?

Several basic federal air regulations were violated, to be sure. And the private pilot would have to answer for his indiscretion. But did he have a sudden mental lapse? Was he anxious to get away from where he shouldn't have been in the first place? Or did he assume that he had the air patch to himself and was cleared to leave ASAP?

The F-100 pilot gives us a good lead. He didn't break any rules, although he was away from his home base, a transient in unfamiliar surroundings. Or was he? FLIP publications, NOTAMS, and knowledge of basic military airdrome procedures gave him all the briefings he needed before his arrival.

The Champ pilot was undoubtedly uninformed and didn't have immediate access to all of the materials. But he could have requested a departure briefing. This oversight nearly cost him his life and the lives of others.

When a stranger such as this Champ pilot lands

on an airdrome, invited or otherwise, someone has a responsibility. It falls on Base Operations representatives to see that proper courtesy and service is rendered. It should also be their duty to insure that the visitor understands local rules, that he will conduct himself in a prudent manner, and by all means, abide by basic Federal Air Regulations.

There's a wealth of valuable aircraft and other property to be protected. Assurance that a stranger will comply with the rules is only a fair exchange for services rendered.

And what about the air traffic controller? Though he was duped by this irrational pilot, must he be caught helpless in the future? He can't read their minds! And he can't shoot 'em down!

He can remember the Law. He can take action to head off a wrong. At the first sign that things are not as they should be, he must plan for the worst.

He can hold or divert traffic until the course is clear, until he's sure what action the unknown will take. Above all, he must follow the cardinal rule of all good controllers: Don't Assume Nothin'... Be Sure!

HOW'S YOUR PLAN . . . FOR LOW ALTITUDE EJECTION

You may want to reevaluate your emergency plans after reading this pilot's straightforward analysis of his own performance in a low altitude ejection...

by Capt Robert M. Morton
4517 CCTS
Luke AFB, Ariz

I always felt that I had the perfect plan. If the F-100 I was flying caught fire immediately after takeoff, I knew exactly what to do. Recently I had to put my plan to the test.

And I have since revised my plan.

I was demonstrating an instrument takeoff to a student scheduled for his instrument check. The flaps were retracting as we passed 230 knots when I noticed the EGT gage climbing through 650 degrees. I retarded the throttle to reduce EGT... and the overheat light illuminated.

Without hesitating, I advanced the throttle to maximum power and started a right climbing zoom. But when I went for the tank jettison button, I hesitated in an effort to clear below me for the drop. So far everything was following my preplan for such an emergency. A right climbing zoom would position the aircraft on a good heading for bailout.

Immediately, the flight control fail light came on. My attention was diverted from the zoom maneuver to confirm the flight control warning light. I selected Number One flight control position with the hydraulic select switch and noted that the pressure read zero. Before I had a chance to check the

Number Two flight control pressure, the stick froze.

We had been in a fifteen degree right climbing turn. The nose started to drop and the aircraft began a roll to the left.

These uncontrolled changes in pitch and bank had not been part of my plan.

I tried to stop the roll with full right rudder. Simultaneously, I told the student to "Get Out!"

He questioned my order.

"I can't control it... GET OUT!!" I confirmed.

He ejected.

My cockpit filled with gray smoke and sparks when his seat fired. I immediately pulled my handles when I heard his seat go.

The seat firing wasn't uncomfortable, but I knew I was definitely ejecting from the aircraft. What was a real shock to me was the wind blast and tumbling sensation I had. It felt as though my arms and legs wanted to tear from my body.

I tried to beat the system, but I was already out of my seat. When I went for the D-ring, it was still there! I grabbed it and pulled... and the chute deployed.

As I assumed the spreadeagle position to stop tumbling, the chute blossomed. Opening shock was not real violent. A quick visual check told me that I had a perfect canopy. Then I looked down at the ground. I was too low to do anything but get ready for the parachute landing fall. There was no time to deploy my survival seat pack, I decided.

During the descent into a plowed field I didn't notice any oscillation or drift. My left foot contacted the ground first. It gave as

I hit a six-inch mound of dirt. Evidently a slight delay between left and right foot touchdown caused me to stiffen my right leg. Although I sensed a snap in my leg as I rolled onto my side, I felt only mild pain. I didn't realize my leg was fractured until I returned to the base hospital.

When I stood up I saw the student pilot descending in his chute about one-quarter mile away. He landed in a cotton field uninjured. The base rescue chopper was overhead just minutes after I hit the ground.

I learned a lot of things about low altitude ejection from this accident. I would handle a fire after takeoff a little differently now.

The time I wasted trying to clear the area below me for a tank jettison probably cost me several hundred feet of precious altitude. Lesson learned: He who hesitates may be lost!

Banking the aircraft during the zoom could have been disastrous. I was attempting to turn the aircraft to a suitable bailout heading and check for fire in the turn. The accident report would have read differently if the bird had decided to roll to the right instead of left when the controls froze. Lesson to be learned here is that inflight fires are often followed by loss of flight control. Therefore, pull up straight ahead and save the turns for higher altitude.

The student pilot questioned my first order to eject. A delay at this stage of the game could eliminate all the advantage we had gained from the upward vector of the zoom. I might have eliminated the delay if my initial order to

eject had included the fact that the controls were frozen. Time, however, doesn't always give you an opportunity to select the best words. My briefings now include special emphasis on the necessity for both pilots in the F-100 to be ready to go immediately when an emergency exists and the order is given to eject.

My lap belt became unfastened sometime during the ejection. That is why I still had my D-ring when I went to beat the system. A real close examination of how we strap in is important. We should pay special attention to the lap belt. Is it completely locked down past the friction point? And is the zero delay lanyard really attached securely to the D-ring? How my lap belt became disconnected remains an unsolved mystery to me.

I'm really grateful that I was trained to try to beat the system. Everything I did during the ejection sequence was learned behavior. I take my hat off to those airmen who train us in the ejection seat simulators. This training proved to be the best life insurance I owned.

My parachute landing fall left much to be desired. I probably could have avoided breaking my leg if I'd had both feet together when I landed. My PLF would have been easier if I had the time to deploy my survival kit.

One last thought about low altitude ejection: You can't help but be really impressed with the seat you strap yourself into... when circumstances force you to reach down, pull the handle, and squeeze for the ride of your life!



ATTENTION

F-84 DRIVERS

We did an article in the November issue about spin recovery in the '84. Safety Supplement 1F-84F-1SS-58 had not reached our Dash One when we were doing our research. Now that it has, we find there have been some changes.

In the article, we said you should keep the stick "slightly with" or "1/3 with" the spin for recovery. The new word, which is the result of the first comprehensive analysis of F-84 spin recovery in several years, is 1/2 aileron with the spin.

From the recent studies, it appears unlikely that you will break the spin with neutral aileron. So don't be bashful... holding full back stick, move it all the way to the stop in the direction of rotation. Then come back half way.

And when rotation stops, of course, neutralize both aileron and rudder. If you don't, you'll

find yourself rolling during the recovery from your post-spin dive. It would be disconcerting, to say the least.

SS-58 places greater emphasis on the turn needle for determining direction of rotation in a spin... any spin, erect or inverted. The needle will always be correct!

If, however, in your excitement you find you can't pull your eyes back into the cockpit, look over the nose of the airplane. In an inverted spin, there's a strong temptation to throw your head back and look at the ground. This can give you the impression of rotation in the opposite direction. Remember, look along the gun line and you won't be fooled.

The book used to say to jettison external stores as part of the basic procedure. It now appears that empty, symmetrical tanks don't have much effect on spin recovery... one way or the other.

But if you have an asymmetric load, or fuel in the tanks... punch 'em off.

The Dash One still advocates use of the drag chute for spin recovery when all else has failed. But, this has never been tested. Maybe it will and maybe it won't. At any rate, you won't need it if you use the correct recovery procedure... promptly! And when altitude is critical, the chute hanging out there will surely prolong your post-spin dive recovery!

Dive recovery consumes most of the altitude you lose during spin recovery. If you know your procedures... know the book... you can keep this altitude loss to a minimum.

We said in the November article that any spin below 20,000 feet is an emergency. You might even go so far as to say that any spin is an emergency. But please don't take that to mean that we won't use the airplane below 20,000 feet... or any other arbitrary altitude.

The book says to eject at 10,000 feet if you are still spinning and have no indication of recovery. This is a must.

So when you're turning the airplane down to 5000 feet in ACT, or lower than that in the gunnery pattern, the name of the game is spin prevention! And that's just a matter of knowing your bird... at any altitude. Take a look at the Operating Limits diagram in Figure 5-4 of your Dash One, and the Stall Speeds chart on page 6-3. Then pick some check points for yourself... airspeed, G, and bank angle. Use them as warnings... go beyond them and you'd better be ready with the correct reaction. If that's spin recovery, get right with it...

It works beautifully!

CHOCK TALK



...incidents and incidentals with a maintenance slant.

sneaky herman

Carbon monoxide causes more deaths than all the other gases combined! And it's sneaky. It'd help if it would bite . . . or hurt. Unfortunately, it doesn't. Carbon monoxide floats around colorless, tasteless, non-irritating, and almost odorless.

Besides being sneaky, it likes you better than the other way around. It wants to enter your blood 210 times more than oxygen does. When carbon monoxide fights to enter your blood stream, oxygen gets pushed aside. You suffocate in the midst of plenty.

Around airplanes there are many sources of carbon monoxide. One that we use during the winter months is an old friend. At least with a name like Herman Nelson it should be an old friend.

An exhaust stack is standard equipment on the Herman Nelson heater. If you're careless about using one and the wind direction is wrong, Herman can pump carbon monoxide into the cockpit or compartment you're heating. You can reduce the concentration of it by positioning the exhaust outlet downwind. Don't let exhaust gases blow over the heating air inlet.

Internal leaks can also contaminate heater air. The only way to check this is test periodically for carbon monoxide. It's required by the TO!

To avoid carbon monoxide hazards . . . and headaches . . . that go with Herman Nelsons:

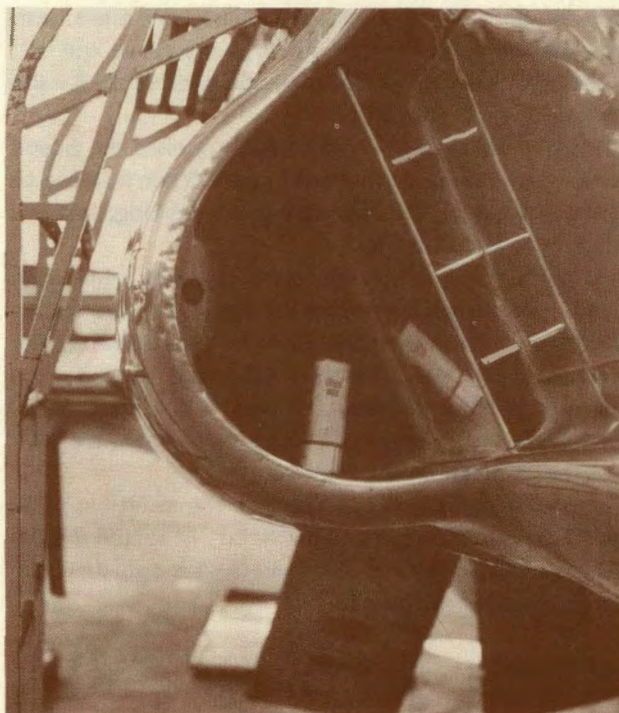
- Always use exhaust stacks.
- Keep the exhaust flowing downwind and away from the air intakes.
- Check your heaters for leaks as the TO requires . . . and whenever you suspect one!

unbelievable

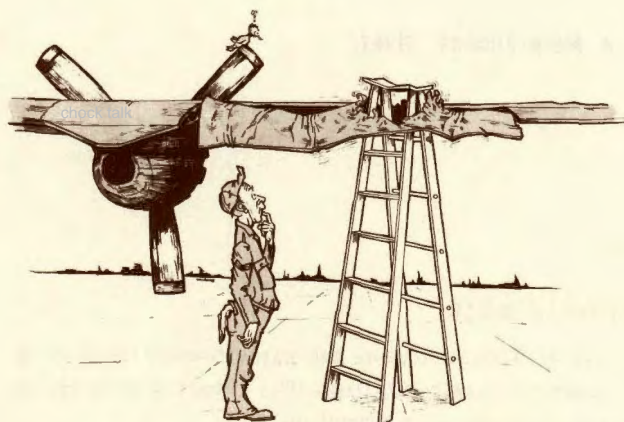
As he walked across the ramp toward the T-bird, it appeared to be ready to go. The ladder was in place, power unit was all plugged in . . .

Then, when he came around the nose, he saw it! He hadn't seen anything like that in years! Couldn't believe it!

He ran and got a photographer . . .



CHOCK TALK



the flap flap

The sarge had been working around airplanes for eight years, so washing his big bird was nothing new to him. He started to put a ladder in place to get at the flaps, but then decided he'd better lower the flaps first. Get at them better... clean them properly.

He climbed into the cockpit and moved the handle to the full down position. That was when he heard the crunching sound. And when he got out and looked, he found the ladder sticking through the flap. It took 38 manhours to repair the flap.

He wouldn't have done that eight years ago, when everything was new to him... and he was more careful!

unsafety wire

The overseas RF-101 pilot's takeoff was uneventful until he rotated at about 150 knots. As the nose came up, he felt the stick being pushed fore and aft. He didn't know if he had enough control to fly the airplane... and aborted.

He yanked the throttles to idle, opened the speed brakes, and deployed his drag chute. Then he tried to hold the nose up for aerodynamic braking, but had difficulty controlling it.

When he reached for the tail hook switch, he found it wouldn't budge. He pushed it again, but the safety wire held it firm. By this time, he was crossing the first barrier. The left tire blew and the big bird swerved. He finally broke the wire, using both hands, and lowered the hook just short of the MA-1A barrier. He stopped on the overrun.

The report didn't say whether the safety wire in this case was the size and material prescribed in the T.O. ... but that's been the trouble when this problem has cropped up in the past.

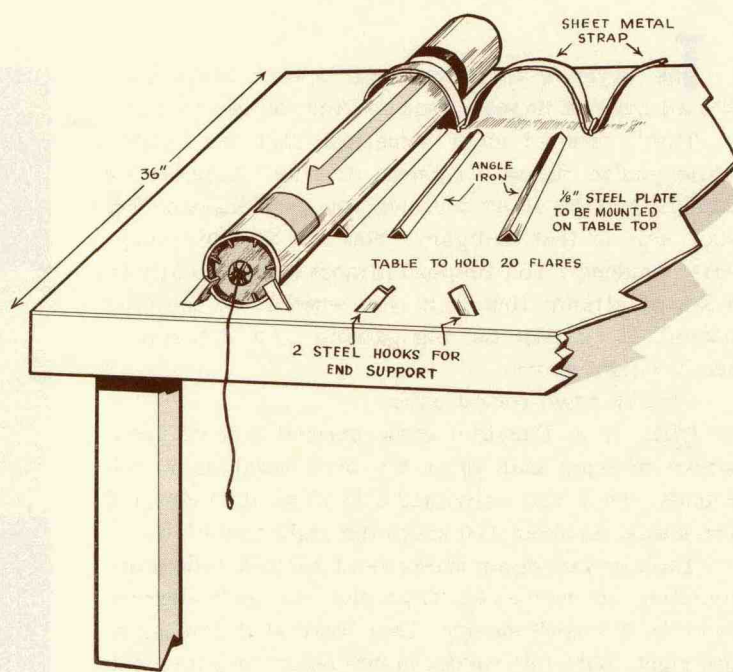
greasy kid stuff

Thirty minutes after takeoff the C-54 pilot tried to retrim his bird. The elevator trim wheel wouldn't budge. Puzzled, he checked weather outside and the outside air temperature gage inside. The gage read minus 13 degrees Centigrade, but visible moisture couldn't be found. Strictly CAVU. He landed okay without using elevator trim.

His Skymaster had a history of trim tab freeze-up at altitude on several earlier flights... always in icing conditions. Warmer ground temperatures thawed the frozen tabs before maintenance inspectors could pin-point the cause. This time surface temperatures were below freezing and the tabs remained stuck. Inspectors found the culprit: Too much lubricant (CPC). After an elevator change someone had applied generous gobs of CPC to drums, cables, fairleads, and jack screws.

Everything worked fine when they wiped off the surplus.

BETTER MOUSETRAP DEPARTMENT



Before you load the Mark 24 Aircraft Parachute Flare aboard an aircraft, you must prepare it and arm it. Part of the preparation is a pre-test operation where you pull the safety pin and wait 35 seconds. The flare is not supposed to ignite in that time. Then you replace the pin.

Although it seldom happens, the flares can ignite prematurely. That's why you test them before loading. And when they do ignite, they have a tendency to make like a little rocket!

Staff Sergeant Donald E. Brandt of the 4515th Munitions

Maintenance Squadron at Luke AFB had performed this test several times. Each time, he wished there was a simple and inexpensive way to hold the flare down if it ignites.

Being a man of action, he covered the testing table with a sheet of 1/8-inch steel plate and welded some angle iron braces to it. In short order, he had the restraints he needed to make the test a lot safer.

Good thinking, Sergeant Brandt! A lot of people can benefit from your idea!

a 2nd look at...

ABORTED

The dryness in your mouth doesn't start until it's all over. It happens too fast. And you're too busy.

That's true of many situations that can happen while you're flying a fighter. An emergency during takeoff, and the abort decision you must make on the spot, fall in that category. You are terribly busy, very suddenly. You respond almost automatically to a set of stimuli that tells you whether to continue takeoff... or take the big gamble on a high speed, heavy weight abort.

Consider two recent ones:

ONE... A Phantom crew started takeoff for a strike mission with their big bird weighing 53,000 pounds. They had computed takeoff at 4000 feet and 180 knots. At about 150 knots the right tire blew.

The aircraft commander used full left rudder attempting to recover from the 10- to 20-degree swerve. It wasn't enough. They were still drifting to the right. With full rudder in, he couldn't engage nose wheel steering. Instinctively, he leaned the stick away from the swerve. It worked! Just as the aileron deflection started to realign the bird with the runway, they became airborne... at the extreme right side!

He had made no attempt to abort.

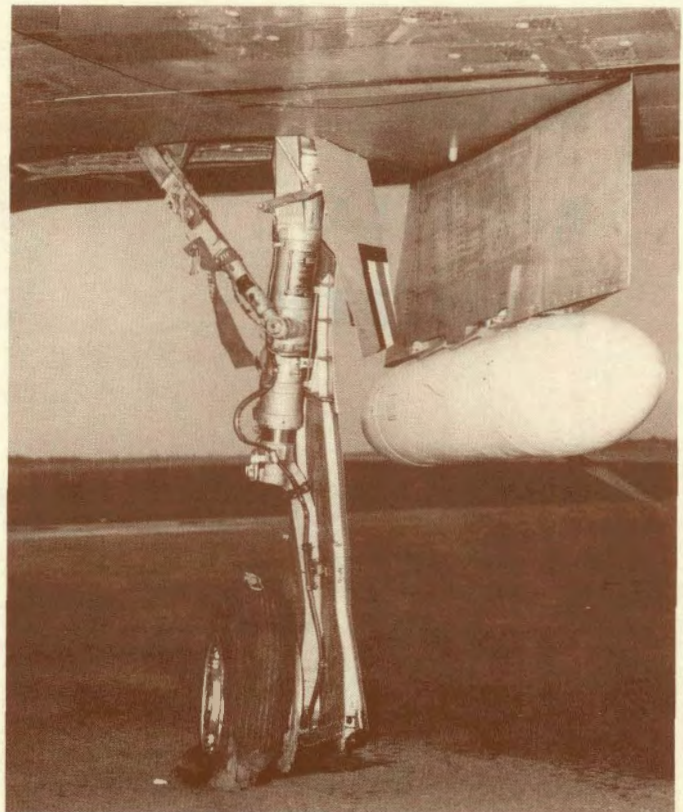
As he nosed up and away from the airfield, things in the cockpit got a lot calmer. He left the gear out, jettisoned his ordnance, and flew around for 55 minutes to burn down fuel. The approach-end barrier engagement was almost routine.

TWO... Another combat-environment Phantom. This time an RF, wearing two 370s and a centerline external tank... gross weight 51,000 pounds. About 2000 feet after brake release, with at least 120 knots, the crew felt their right tire blow.

The aircraft commander yanked both throttles to idle, engaged nose wheel steering. Then he paddled off anti-skid and started heavy braking on the left side. At 3600 feet from the approach end, Phantom and phylers left the runway together.

He hadn't tried to use the drag chute!

Before the bird stopped at the 5600-foot point, it plowed deep ruts through the mud... until it came to the taxiway. The external tanks tore off. The right nose tire and left main tire blew when they hit run-



way lights. Both right and left main strut doors were badly wrinkled. The trailing edge of the right flap had a bad gash in it. And the Nav jettisoned his canopy during his emergency exit.

This crew was very lucky!

After a second look at these two, it's not hard to decide which pilot was better prepared. Faced with almost identical emergencies, they each made a decision on the spot. There wasn't time for analysis or evaluation. The name of the game was... act now... do something... quick!

Being prepared for an abort is thinking it out before hand... thinking out all the various combinations and variations. You can encounter tire problems, engine problems, airspeed problems, instrument problems (where nothing but the instrument is acting

TAKEOFF



up). There can be cross winds, slippery runways, short runways, no barrier, wingmen, flights ahead or behind on the runway.

With these, and probably many more variables, you can't make hard and fast rules about aborts that apply in every case. Every takeoff, when you line up and get ready to roll, is different in some degree from all the others.

So what can you do to be ready for an abort?

In the calm of your preflight planning, you evaluate the conditions... the variables. You sort out the critical factors. Decide which are for you in this situation, which are against you in that situation. You do this while you have time to think... evaluate. By taking the time before you're faced with the fact of a takeoff emergency, you give yourself time when

you get there... and assurance that you'll make the best decision when you must.

Then it's not all new to you when it happens.

You act now! You do something, quick... and right!

It may sound trite to say, "know your procedures," but the fact remains that in most of our heavy-weight, high-speed aborts the pilot doesn't follow the complete abort procedure. In many of these cases this could have made the difference between successfully handling the emergency and catastrophe.

It doesn't take a second, just before you release brakes, to say to your self, "Throttles, Chute, Brakes, Hook"... or whatever applies to your particular bird.

Try it!

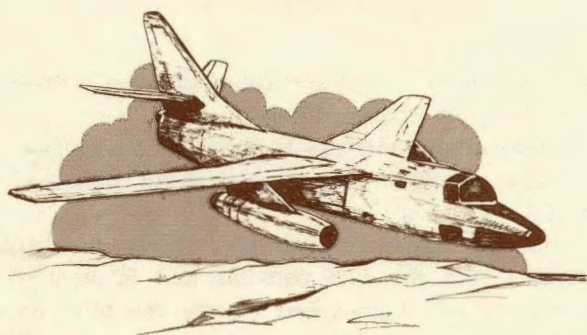
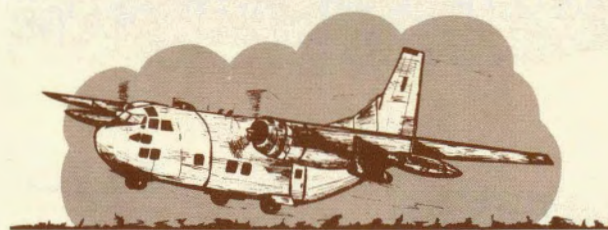


TAC TIPS

READY RESERVE

A C-123K pilot touched-and-went using his recipis only during a local transition ride. Just after liftoff number two recip came unglued internally. This could have been fatal. But the Super-Provider driver was smart enough to run his jets at idle in the pattern. He calmly pushed the right jet up to 100 percent. The rest was routine.

Until this clincher came along some C-123K types doubted the need for idling their jets on recip-only takeoffs. Now they're believers.



HATCH LATCH

The RB-66 crew zipped through preflight, start, taxi, and takeoff without a hitch. Student pilot and

student navigator were in their normal positions. The instructor had forsaken his gunner's seat position for a box in the aisle where he could better supervise the student's activities.

Shortly after they leveled at 18,000 feet, the hatch above the gunner's position opened and separated from the airplane. Following a rapid descent to below 10,000 feet, they landed without further trouble.

Investigators on the ground weren't able to pin down a specific cause for the hatch opening in flight. The crew chief told them he had closed the hatch during his preflight. And the instructor had visually checked it before taxi and again just before takeoff.

Most likely, the crew chief had left the hatch only partially locked. That held it in place until they reached altitude. Then pressure inside and airflow outside forced it open.

The Dash One calls for more than a visual check before taxi. You're supposed to open the hatch, check the latches, then close and relock!

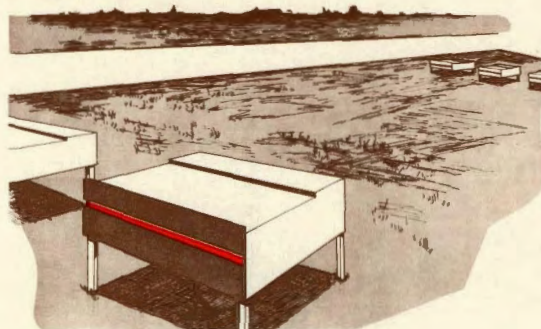
...interest items, mishaps with morals, for the TAC aircrewman

NON-STANDARD VASI

All Training Command pilot training bases except Sheppard and Randolph now have non-standard VASI installations on their runways. The modified system incorporates a 3.5-degree glide slope to align the VASI glide slope with the T-38 VFR approach. But the major, and important, change is in the point at which the glide path meets the ground (GPIP).

With the modified system on ATC bases, the GPIP is located 450 feet short of the runway threshold. This allows the T-38 to stay on glide path until it is ready to flare...avoiding all the troubles that go with ducking under the glide path to land in the first few thousand feet of the runway.

Need we say more?? If you try to fly the VASI slope all the way to touchdown...Phantoms can normally do this without getting hurt, we're told...



you'll find you've left some right smart marks in the overrun (at best!!).

This non-standard system is supposed to be turned off from the control tower whenever a transient aircraft is landing. But beware, anyway!

WEATHER CODES CHANGE

Two new codes (TAF and METAR) will be implemented by many Air Weather Service (AWS) detachments effective 0001Z, 1 January 1968. These were developed and approved for international use by the World Meteorological Organization at the request of the International Civil Aviation Organization.

The TAF code will be used by AWS units worldwide and by all other stations outside Continental North America for transmission of terminal weather forecasts.

The METAR code will be used by all stations outside Continental North America for reporting hourly and special weather observations. No change will be

made for reporting hourly weather in CONUS.

The new codes contain essentially the same information as the old but the weather elements will appear in a different order.

Aircrews and air controllers should contact their local base weather stations to arrange for indoctrination briefings and to procure posters and handouts developed by AWS.

The posters should be displayed in base operations, flight planning rooms, and alert facilities and the handouts distributed during flying safety meetings and instrument school training sessions.

"IGNORE the T.O."



reprinted from: General Electric
FPD Service News

Is this the name of a new game? Reading several publications dedicated to better maintenance and operations practices, you might get that idea.

For example:

"Safety surveys of many Air Force activities have revealed numerous deficiencies and malpractices in the handling of aircraft engine and wheel bearings during installation, removal, cleaning, and storage."

"...this would not have happened if proper tech order procedures had been followed."

"...but postflight and preflight check-list procedures had not been carried out."

"Corrective action included briefing all personnel concerning the incident, stressing their responsibilities for strict compliance with published technical instructions..."

"The crew had simply omitted the igniter installation part of the check list."

"If maintenance supervisors would become familiar with and enforce the contents of T.O...."

"... (Which, of course, was in conflict with existing T.O.s...)"

"Check your work by the book, and do it right the first time."

"None of these should occur if T.O.s and local SOPs are followed." And 15 items followed this statement.

These are quotations from one issue of AEROSPACE MAINTENANCE SAFETY magazine. Other articles imply the omission of T.O. use...bearings installed backwards, incomplete installations, access panels not secured, mismatched vane and shroud assembly.

There's really nothing degrading about using a T.O. as you work. It may be inconvenient at times, but so are the results of incorrect or incomplete jobs. And it is degrading when you must admit, at least to yourself, that you fluffed a job because you didn't use the book.

Technical publications are tools, as much as any of the hardware you use. They don't belong on the library shelves. Their pages should be dirty. They should get dog-eared. In short, they should be well used.

MAINTENANCE MAN OF THE MONTH

Sergeant Ronald L. Pippin of the 4410 Munitions Maintenance Squadron, Hurlburt Field, Florida, has been selected to receive the TAC Maintenance Man Safety Award. Sergeant Pippin will receive a letter of appreciation from the Commander of Tactical Air Command and an engraved Award.



Sgt Ronald L. Pippin



CREW CHIEF OF THE MONTH

Staff Sergeant Paul A. Brooks of the 779 Tactical Airlift Squadron, Pope Air Force Base, North Carolina, has been selected to receive the TAC Crew Chief Safety Award. Sergeant Brooks will receive a letter of appreciation from the Commander of Tactical Air Command and an engraved award.



Sgt Paul A. Brooks

LETTERS

...to the editor

I acknowledge with pride TAC's Unit Achievement Award for twelve months of accident free flying. To set the record straight I wish to inform you that the unit designation is the 182nd Tactical Fighter Group and not the 182nd Tactical Reconnaissance Group as was listed on page 23 of the November 1967 issue of TAC ATTACK,

I hope the correction will be given billing in a size equivalent to the error in reporting.

Sincerely

H. C. NORMAN, Colonel, 111 ANG
Commander

Sorry, Sir. We'll try harder!

—Ed.



12 Months Accident-Free Flying

TACTICAL AIR COMMAND UNIT ACHIEVEMENT AWARD

61 Tactical Airlift Sq, Sewart AFB, Tenn.
62 Tactical Airlift Sq, Sewart AFB, Tenn.
464 Field Maintenance Sq, Pope AFB, N. C.
522 Tactical Fighter Sq, Cannon AFB, N. M.
779 Tactical Airlift Sq, Pope AFB, N. C.
944 Tactical Airlift Gp, March AFB, Calif.

PEANUTS

Courtesy of Daily Press, Newport News, Va.
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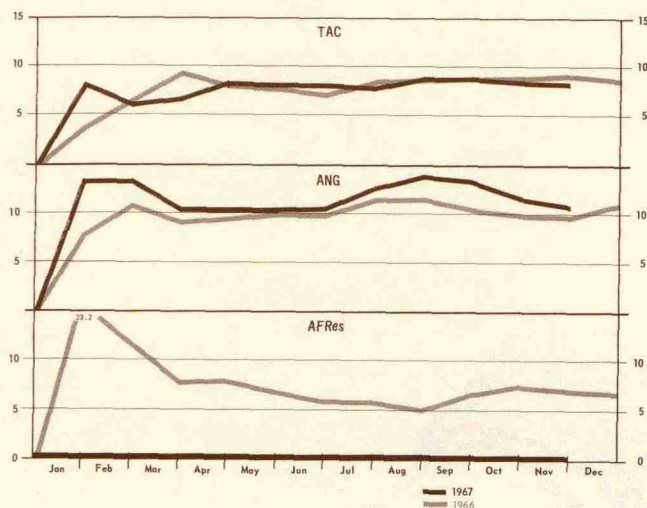


TAC TALLY

MAJOR AIRCRAFT ACCIDENT RATES as of 30 NOVEMBER 1967

Tac Tally

estimated per 100,000 hrs flying time



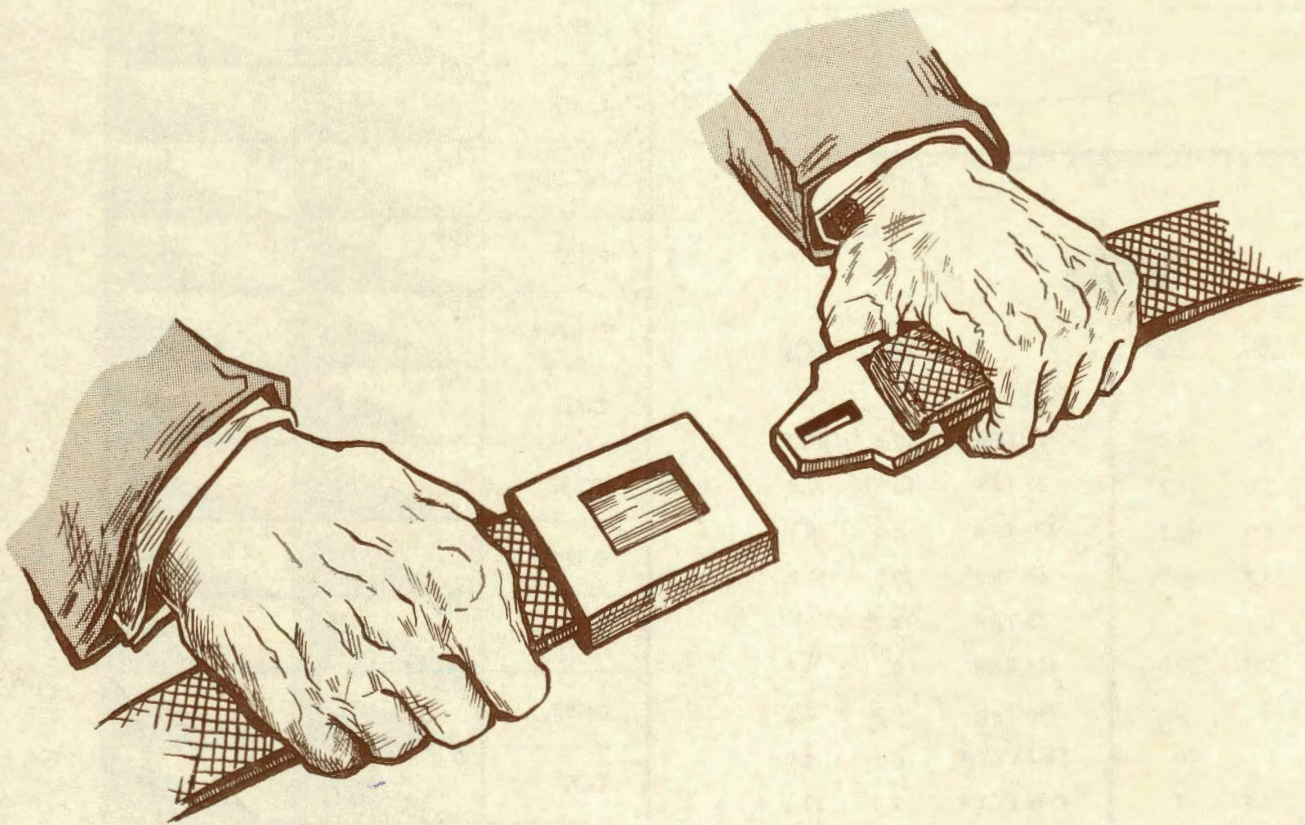
UNITS

	1967	1966		1967	1966
9 AF			12 AF		
4 TFW	5.3	16.0	23 TFW	12.6	27.8
15 TFW	21.0	3.5	27 TFW	10.3	11.9
33 TFW	8.2	13.5	479 TFW	8.3	8.3
354 TFW	30.7	30.2	67 TRW	10.3	12.5
4531 TFW	0	0	75 TRW	18.1	0
363 TRW	8.3	10.8	313 TAW	0	9.7
64 TAW	0	0	516 TAW	0	8.6
316 TAW	0	0	4453 CCTW	6.1	6.9
317 TAW	4.4	0	4510 CCTW	9.0	13.1
464 TAW	2.4	0	4520 CCTW	9.9	16.4
4442 CCTW	6.2	0	4525 FWW	19.0	30.4
SPECIAL UNITS					
1 ACW	5.7	12.3	4500 ABW	0	0
4410 CCTW	10.8	13.5	4440 ADG	0	0

TAC ATTACK

AIRCRAFT			1967	1966
TYPE	TAC	ANG		
A-1	25.0		28.4	
RB-66	0		0	
F/RF-84		15.2		11.3
F-86	-	8.2	80.5	7.6
F-100	14.1	19.2	17.6	15.6
RF-101	29.2	18.5	29.2	36.3
F-105	14.8	0	25.4	0
F/RF-4	11.4		6.7	
C-47	4.3	0	0	0
KC-97		0		0
C-119		0		0
C-123	4.5		0	
C-130	0.5		2.0	
T-29	0		0	
T-33	4.6	0	0	6.8
T-39	0		0	
O-1	10.9		13.1	

your first move toward . . .



A LIFE SAVING HABIT