

TAC ATTACK



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TAC ATTACK

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COVER PHOTO:

A flight from the 366th TFW, ... TAC's last active F-84F unit.

Articles, accident briefs and associated material published in this magazine are non-directive in nature. All suggestions and recommendations are intended as helpful and remain within the scope of existing directives. Information used to brief accidents is extracted from USAF Form 711 and may not be construed as incriminating under article 31 of the Uniform Code of Military Justice. All names, dates and places used in accident stories are fictitious. Air Force units are encouraged to republish the material contained here; however, contents are not for public release. Written permission must be obtained from Hq TAC before material can be republished other than Department of Defense organizations. Contributions are most welcome as are comments and criticism. We reserve the right to make any editorial changes in manuscripts which we believe will improve the material without altering the intended meaning. Direct correspondence with the Editor is authorized.

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General Meyer on SAFETY

I wonder how many times the thought has crossed our minds during the first two or three flights in a new aircraft that the only reason we didn't get into serious difficulty was that nothing went wrong--no malfunctions--no emergencies. Regardless of how much training we have received, how much simulator time, how much cockpit time--the first time you fly a high-performance fighter, or other aircraft for that matter, you are in a strange environment and you need everything "going for you." The longer we fly, the more experience we have, the more we realize we need everything "going for us" on every flight; and if it is, the probabilities are that the mission will be performed effectively and safely.

Twelfth Air Force recently instituted a procedure for pre-takeoff safety inspections that insures the pilot that he does, in fact, have everything possible "going for him" insofar as aircraft condition is concerned. This procedure has recently been instituted TAC-wide and is reaping big dividends. The procedure is simply a thorough external check of the aircraft by the best maintenance personnel available prior to taking the active runway. Five minutes of caution here may save an aircrew's life and a valuable aircraft. During the short time this safety check has been in existence, accidents and incidents have been prevented.

To date, within 12AF alone 68 F-105's, 22 F-100's, 30 F-104's and 7 F-4C's have been returned to the line from take-off position for causes which have a high potential for critical emergencies.

As an example, an F-100 was being inspected prior to taking the runway when a sharp inspector noticed oil coming from the bleed-air door. The pilot was instructed to abort. Later it was determined that this leak had developed from a failed main bearing carbon seal. Had the safety inspection not been performed, or accomplished in a careless manner, unquestionably an accident or serious emergency would have developed. At another base, a Dzus fastener was found imbedded in a main landing tire. Before the aircraft could be taxied back to the parking ramp, the tire had gone flat. This tire could have gone flat on takeoff, or most certainly would have been flat on landing. Accident records show that tires can be "killers" if they fail during a critical portion of the takeoff or landing roll. There have been many more such occurrences too numerous to mention here, but suffice it to say that things do happen to aircraft from the time they leave the parking area to the time they arrive at the pre-takeoff point. At some of our bases it is over two miles from the parking ramp to the end of the runway. The pre-takeoff safety inspection provides a system whereby we can assure ourselves that everything possible has been done to provide the pilot with an airworthy aircraft.

This system is the result of individual ideas for better supervision of flying operations. This is true "accident prevention" in its finest form. The old adage that "an ounce of prevention is worth a pound of cure" is as true today as it ever was . . . even more so when we consider the value of our equipment.

There is no magic formula or system for the prevention of accidents. It is everyone's responsibility, indeed our duty to try to develop ideas or better ways and means to safely accomplish our mission. Don't disregard an idea just because it may require additional manhours. If our accident rate is reduced, the expenditure of a few additional manhours becomes rather meaningless. Develop your accident prevention ideas and make 1965 a truly successful accident prevention year.



Major General John C. Meyer received his commission and wings in July, 1940. After serving in the United States and Iceland, he organized the 487th Fighter Squadron in January 1943. As Commander of the 487th and Deputy Commander of the 352d Fighter Group, General Meyer became the top ranking American ace in the European Theatre, destroying 37½ enemy aircraft.

During the Korean conflict he was deputy commander of the 4th Fighter Wing and destroyed two more enemy aircraft before being reassigned to Larson AFB as Deputy Commander of the 101st Fighter Interceptor Wing. He served as Director of Ops and Training, Hq CONAC, and was a member of the faculty in the Air War College before commanding the 57th Air Division at Westover. He next commanded the 45th Air Division at Loring AFB, Maine, then became Director of Plans for SAC. He was promoted to Major General in April, 1963 and assumed command of 12th Air Force in November of that year.

General Meyer is credited with destroying more enemy aircraft than any living American. His many decorations include the Distinguished Service Cross with two oak leaf clusters, Silver Star with one cluster, Legion of Merit, and DFC with six clusters.

angle of ATTACK



Colonel Jack W. Hayes
Chief of Safety

I sincerely welcome this new assignment as Director of Safety for Tactical Air Command, not only because it is a challenging one, but also because it involves grappling with a problem directly affecting the combat capability of the Tactical Air Command. Combat capability is, of course, the final goal toward which our every effort must be directed and is the ultimate measure of our effectiveness.

I have no startling new ideas on safety. Instead, I place my faith in basic fundamentals . . . I believe one of the more important is that the accident rate, in all areas, equates to the state of discipline within a unit. The crack units invariably have the best safety record.

There are many definitions of discipline, but my favorite is: "Military discipline is that mental attitude and state of training which makes obedience and proper conduct instinctive under all conditions."

This means our personnel perform and react, not from fear of punishment, but from an automatic conditioned reaction to perform properly in every case, no matter how minute the detail.

The correlation and dependence upon self-discipline are obvious. As commanders and supervisors, this is our ultimate goal for developing and guiding our people.

The other most essential element toward a perfect safety record is to have each individual accept and support the concept that every man is a safety officer.

The most capable commander, supported by the most outstanding staff of officers and non-commissioned officers, can not prevent accidents. And, a unit can become accident-free only when everyone in it has enthusiastically accepted their responsibility toward safety at every working level.

In the truly professional outfit, each individual has pride in his unit and himself and strives constantly to improve his ability and performance.

I am saying then, that most of our safety problems can best be solved by making proper individual performance an integral part of our day-to-day duty.

May I pledge to you the continual and wholehearted support of the Office of Safety here at Headquarters TAC and I shall be looking forward to personally visiting all units in the near future.

Colonel Jack W. Hayes, Jr., is a native of Tucson, Arizona. While attending San Diego State College, Colonel Hayes was quite active in sports and student body activities and was middle weight boxing champion before joining the aviation cadet program in his junior year. He graduated from flying school in 1940, instructed two years at Goodfellow, then went into the B-17 program and was stationed in England in 1943. He flew 27 bomber missions before transferring into fighters for an additional 35 missions with the 355th and 357th Fighter Groups. While with the 357th, he became one of the few American pilots to bring down an ME-262 German jet.

The war over, Colonel Hayes stayed in Germany as commander of the 55th Fighter Group, the first overseas unit to convert to jets. After the conversion, he returned stateside, and commanded F-47 and F-51 squadrons in the training command before attending the Air Command and Staff School in 1947.

From 1948 to 1953, Colonel Hayes commanded fighter units in ADC, TAC, and SAC. He also saw duty in Korea in 1951 and 1952, flying 35 missions in F-51s, F-84s and F-86s.

He was commanding the 78th Fighter Group at Hamilton AFB, California in 1952 when selected for MAC duty in Turkey. In 1955 he was assigned to the Pentagon with the War Plans Division and Joint Strategic Plans Group of the Joint Chiefs of Staff.

In July 1958, Colonel Hayes was assigned as Vice Commander of the 341st Bomb Wing at Dyess AFB, Texas and assumed command the following year. In February 1961, he became commander of the 310th Bomb Wing at Schilling AFB, Kansas and the 22d Strategic Aerospace Division in July 1962. Coming to Hq TAC in July of 1963 as Director, Command Control, and Chief of the TAC Command Post, he was reassigned as Chief of Safety on 1 December.

In addition to being a command pilot, Colonel Hayes is also jump qualified. He was awarded the Silver Star, the DFC, Air Medal with nine oak leaf clusters and purple heart.

As a matter of interest, Colonel Hayes is one of the few USAF officers to be awarded the Commendation Medal while commanding both fighter and bomber units.

Attack Survey

Many thanks to everyone who contributed to the recent TAC ATTACK survey. Your help was greatly appreciated. Altho we haven't completely unscrambled everything...one pilot thinks Princess Ann and the Ol' Sarge are the greatest while another thinks both should get lost...some comments are worth mention at this time.

Several readers said they would like to see more articles from experts in the field. Frankly, so would the ATTACK staff. One reader summed up what may be the problem. He thinks we haven't advertised the fact that we want articles even tho it is specified on the inside front cover in extremely small print. So to overcome any misunderstanding along this line, we hasten to say, "YES, WE WANT AND NEED ARTICLES FROM YOU EXPERTS IN THE FIELD." They don't have to be done up fancy, just a readable draft on a subject that will be of interest to other people in the command, or which will help others do their job easier, safer or better.

On occasion we ask for specific articles on specific subjects - by "on occasion" means when we get word on something that looks like it would be interesting. But, a lot goes on that we never hear about.

It is up to you to help us fill the gaps. We don't believe in levying the requirement for a story onto a unit when we don't have a specific subject. Too often

this produces a story dreamed up in desperation to fulfill a commitment. Such stories are hard to edit and harder to read. Being lazy, we like to work with stories that are easy to edit and read. Spontaneous stories, written by someone who is interested in telling others about a pet project or pet theory. So if you have a story to tell, remember the ATTACK, and send it in. You will do much to help us give you a better, more interesting magazine.

Others suggested we start an "Anymouse" section similar to that in the APPROACH. A good idea, but again, this requires constant support from you people in the field. If you pull a boo-boo and get away with it, but think the same problem may snag someone else, write us about it and we'll publish it as an anonymous letter or article. If we get enough input, we'll start a specific section and give it a catchy title.

The same thing holds true for photographs. The ATTACK staff has not done much picture taking. Many bases frown on people running around their flight line with a camera, and we've been rather short handed for quite some time and have had to do much of our traveling by telephone. In other words, we've been relying on you for pictures. We are always hard pressed for good photos...particularly photos that tell a story or brighten up a tired cover. When we do get to traveling more, we'll do our best to give you more and better photos...meanwhile, those of you who dabble in photography can help us much.

With that, we'll sharpen our pencils and get back to work...doing everything we can to ATTACK problems that cause accidents.

— The ATTACK Staff



A FELLOW I KNOW is an ace and doesn't know it. He was in a hassle one day and was getting the worst of it until he stumbled onto a bit of tricky stick and rudder work that caused his surprised opponent to overshoot and end up as target. Like most tricks, the word leaked out and the maneuver was soon adopted by the rest of the fighter fraternity flying the particular bird. They even added it to the training program.

Joe - that isn't this fellow's name but I'll call him that because the rest of what happened really isn't his fault - is an ace because about ten times during the past few years someone has lost control while attempting his innovation and has been forced to punch out.

At times the particular maneuver has been deleted from the training prospectus only to get back on again. In view of two very recent accidents, I reckon it is headed off again. If so, I'm betting it will be revived at some future date . . . too many troops have learned to use it as a last-ditch defensive maneuver, and pride will force them to use it to keep from thinking they've lost a fight that's really already been lost!

I'm not an old woman who'd like to see our training program sterilized into nothingness . . . but I am a realist who has done some shooting and being shot at in both the big war and the late lamented police action . . . and for the life of me I cannot see practicing this specific maneuver - and if you'll keep an open mind I'll tell you why.

First, successful combat tactics take full advantage of the strong points of your equipment and exploit the weak points of your enemy's equipment.

I once played games with an above average MIG driver . . . I assume he was above average, even tho I

initially gained the advantage on him and I'm no Rickenbacker. We were on converging courses and I made a quick half roll to end up directly over him. No matter what he did, when I completed the roll I'd have him . . . at least it looked that way to both of us. He feinted to the right, then broke hard left and I dropped on around.

To make a long sad story short, I didn't hose him when he crossed my nose because on a previous mission I'd wasted all my ammo taking snap shots MIGs and had ended up with empty guns when I eventually got one dead to rights.

This particular pilot pulled around hard enough to get me well slowed, then broke out of the circle in a climb. I got two strikes on his tail before he pulled out of range.

Had the situation been reversed, with him sitting above me, I'd have done the fastest split-S in history. The MIG was aerodynamically dirty and had a good power to weight ratio. The '86 was clean and heavy for its engine thrust. The tactics in this example were based on this.

He got me slowed down then out accelerated me . . . which was reasonably good thinking, considering how he'd botched up the initial encounter. Better thinking would have been to have gained and maintained the offensive.

The cardinal rule in Korea was to keep your Mach up. It's still a good rule judging from the heft of most of our equipment and considering that a high Mach makes an attacker that much slower to overtake into shooting position.

I have never seen the value of continuing AC practice once it degenerates into a scissors . . . fight is usually over well before that point is reached

in actual combat you wouldn't get into a slow flying test very many times before someone would jump into the fight and knock you off.

In case you haven't guessed, I am hammering the F-100 high-G roll and other slow speed defensive tactics. This bit of business is reserved for about 250 knots airspeed at an altitude where this speed puts the Mach suicidally low.

It should never be necessary to fly this slow even with a heavily loaded bird . . . Besides, if you've allowed an enemy to get close enough so you can shake him with a high-G roll and you are still intact - he's a lousy shot!

I firmly believe we should train our pilots to fly right up to the wire with a bird . . . I think F-100 pilots should have first hand experience with adverse yaw and that the training command should teach spin recoveries in their cheapest trainer . . . but I can't see continuously practicing last-ditch save-your-bacon defensive maneuvers . . . better to concentrate on more practical tactics. So, if the high-G roll gets dropped and stays dropped I'll shed no tears either as a pilot or as a safety officer.

"TAT," THE FRIENDLY fly doc remarked, "it's time of year when almost everyone is going to catch cold. How about warning the troops on the danger of flying with a cold? You are in a perfect position to show them one of the side effects."

"OK, doc, but I'll feel kinda foolish about it. I never paid much attention to colds."

The doc tossed my physical on his desk and grinned wickedly, "That's exactly why I believe you should be the one to tell people not to fly with a cold!"

He's right. I became indifferent toward colds back when missions had to go regardless . . . and found I could usually get by with no apparent sweat. Sure there were two or three times when a blocked ear made things difficult and one time when a blocked sinus made landing a real serious problem.

However, the doc is very, very right. This was brought forcefully to my attention last Christmas. Good old Santa gave the kids one of those bird books, complete with a set of records that gave actual recordings of several bird calls. Having a strong interest in birds of all varieties, this tiger wasted no time helping the kids get the records onto a turntable.

The moderator's voice called off each bird in turn and this tiger listened in vain for the call. We

turned up the volume until the wife and kids were squirming and holding their ears . . . still only silence, broken by an occasional chirp representing one of the lower notes.

It suddenly dawned on me . . . it has been years since I've heard a bird or listened to crickets and such.

The ATTACK staff keeps telling you that you get paid to fly healthy airplanes, not sick ones. You get paid to fly while healthy, too, and there is no good reason to push the rules. Aside from losing out on small pleasures in the future, those few times when an ear or sinus won't open are bad enough in the slower more forgiving aircraft of the by-gone era. They'd be much worse in some of today's equipment.

FROM A GEAR-UP LANDING report that occurred in another command . . . "The pilot stated he would have initiated a go-around if the bird hadn't touched down prior to the 5000 foot remaining marker." The runway was 11,000 feet long!

For kicks, I'd like to watch this hero try to plunk an F-100 onto a wet runway. On second thought, make it a MIG 17 into a 5000 foot strip.

HERE'S A SWITCH. A T-39 crew from another command were on final for a touch and go when they suddenly found themselves staring calmly at a fire warning light on the port engine. They closed the left throttle but the light remained on. Out came the T handle and the number one extinguisher put out the light, but it came on again DURING THE SINGLE ENGINE GO-AROUND!

It went out and stayed out when they fired extinguisher number two and they landed without further incident. The cause of all this fun was an intermittent short circuit in the fire warning system.

Shorted fire warning systems are heap bad, but they ain't nearly as bad as the intermittent short circuit between the earbones that induced this pair to take this potential bomb back into the blue when all they'd have to do was continue the approach and land.

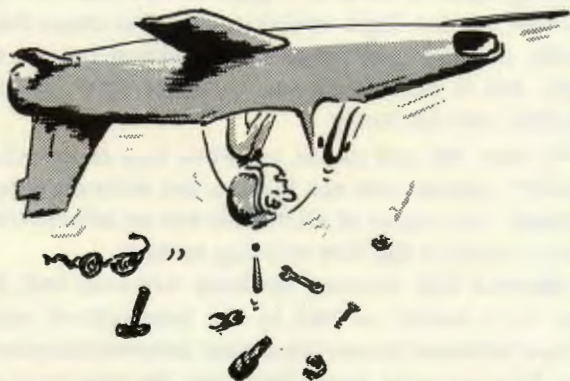
BACK WHEN SHIPS were wood and men were iron, some sailor - his name escapes me - coined a rule: "One hand for the ship, the other for yourself." Rumor has it he shouted this on his way to the cruel sea - clutching fragments of the main skysail in both hands. Being iron he sank like a rock. In a sense, his rule still applies to ships today - including the iron

craft that fly. As you may have guessed, I have a for-instance involving no less than one each F-84F and a Well Experienced Captain.

Damage was limited to a collapsed nose gear, minor skin damage and dented pride. Trouble started when the WEC followed the rest of the flight as they taxied back to the ramp. He held a little to the right on the taxiway to escape the blast from the bird ahead and his own bird wanted to pull a little to the right due to the crown of the taxiway. Just as he turned into the ramp area, he smelled and saw smoke along the right side of the cockpit. As he reached down to turn off the inverter the bird swerved to the right. The right wheel rolled off the ramp before vigorous left brake could correct the swerve. As always seems to happen in such cases, the base engineers had dug themselves a ditch adjacent to the pavement and you can guess the rest.

Both brakes checked out OK.

I guess most of us have been guilty of taking care of cockpit chores while taxiing - but not to the extent that we let the machine get away from us. The point is, it isn't a good practice and a fellow who does this has no excuses to offer if the machine does go astray while he is so occupied. Of course smoke, and a potential fire is going to get rather prompt attention regardless of one's feelings on this matter. In this case, remember the old sailor and don't put ALL of your attention on fussing with the problem.



I KEEP READING reports about jammed controls and they scare me. How many of these reports must stack up before we either kill someone or do something to stop the nonsense? Take the latest. . . A test pilot rolled his bird and found he couldn't pull the stick back during recovery - until he used both hands to break it free. Almost immediately it jammed again, so he rolled inverted and managed to shake it loose, then brought the machine home.

A hydraulic specialist left a 5/8 inch wrench in

the tail section when he worked on a yaw actuator. Makes you want to tie the wrench to the guy's sleeve with a length of red ribbon, like Ma used to do with mittens.

A careful, proper tool count, plus some professional pride, is the only cure for this problem anyone has discovered to date. If you are a maintenance man, please don't wait for someone to come up with the red ribbon treatment, but get busy and do your best to halt this trend.

By the way, any time one of you pilots runs into resistance as you apply control pressure, take a tip from the Commies . . . give up a little, then try again. Read me?

Speaking of jammed controls, another test pilot discovered he couldn't move the control stick fully aft in an F-100F after he applied negative G. He experimented and found he couldn't achieve a landing attitude below about 250 knots. Reasoning that some object had gotten into the controls, he rolled the bird over and pumped the stick fore and aft and was able to regain partial aft stick travel, but lost some right aileron movement. Since he could maintain a normal landing attitude at 180 knots, he landed from a straight in approach.

The MD-1 survival kit had worked its way out the seat and was blocking the stick. I don't know about you, but I am not about to put negative G on a bird when carrying stuff in the aft office, even if I personally tie it down.

DRIVING BACK toward the sweat shop after spending a pair of hours in the instrument trainer relearning how to make a penetration (who makes a published penetration with the enroute type so easy to get?) I noticed a huge cloud of dust in the middle of the old air patch. For a second or so I thought I was back in Clovis, then one of the local C-130s staggered its way down into the dust for an assault landing. I could almost hear it hit as it disappeared into the brown fog, adding more with all fans churning in reverse.

My old hard hat is off to those troops and their mighty bird. Reminds me, I was reading where some brave souls in the Navy borrowed one from the Marines and proceeded to fly it on and off one of their boats. They made 21 full stop landings and deck launches at gross weights from 85,000 to 120,000 pounds without benefit of a hook! Landing runs averaged under 500 feet, with takeoffs requiring up to 7 feet. To which I say, and you can quote me, "gulp!"



I'M SURE YOU'LL agree that it pays to fly as briefed . . . on the other hand, I'd bet a gnawed off pencil and one large metal desk against a cockpit assignment that most of you troops flying fighters have had a close call or two because you were guilty of improvising, changing the plan, or deviating from accepted practice . . . like the time yours truly put his flight in a diamond instead of the usual fingertip and then popped speed brakes without giving the usual warning call. Hoo boy! Number four could have killed me.

Not long ago, a couple of Navy pilots got together under similar circumstances. They were flying two and three in a three ship flight. When the leader signaled for a left echelon, Three didn't get the signal, but knew they were approaching the field and moved out to make room. Two made his cross-over a little too fast and had to take his bird a little below and to the left of the number three man.

Three observed this, decided Two wanted the outside slot, and started closing on the leader. As he moved in, he felt a burble on his left wing but thought Two had tacked onto it and continued to close without checking to see what was up. A few seconds later he felt another burble followed by a very hard jolt. The aircraft rolled out of control and he ejected without sweat.

Two had gone low and outside of Three, then, after making sure he was clear of Three, had concentrated on the lead as he continued to move into position. This was terminated by a hard jolt that threw him hard against the right side of his cockpit.

He had a hard time getting out of his machine and barely got clear in time. He landed in a tree about 30 feet from his burning machine and was somewhat injured before he was rescued.

One thing I must admit, when this Two character concentrates on his leader he really concentrates.

SOMETIMES YOU GET into trouble trying to be too safe. Someone will go a little further than the handbook procedure . . . and find himself in a corner he didn't anticipate. As usual, I have a for-instance or I wouldn't be bending your ear on the subject.

It seems a well experienced F-101 pilot was making an approach into an overseas field which sported a runway that was just 6000 wet feet long. He was sweating the stopping, and I don't blame him. He knew he needed a good chute to stay out of trouble, and planned his approach so he could divert to a longer airpatch if the chute failed.

He held 170 on final with 5000 pounds of fuel on board, deployed the chute over the overrun, and brought power back to idle. So far, so good. The chute felt good, and the bird touched down in fine shape. He then shut down the left engine as per squadron procedure . . . right then is when the chute fell off and an accident became inevitable.

During the next few moments he managed to blow both main tires, then sheared the gear as he slid off the runway. Primary cause was a maintenance Murphy . . . someone installed the drag chute deployment parabake locking key backwards and this goofed up the locking mechanism. However, the board complained because the squadron procedure for shutting down an engine after landing left this pilot in no position to take a waveoff once the chute failed. Odd, because it looks like a reasonable procedure on the surface.

I know it isn't too fair to sit and snipe from the comfort of a swivel chair . . . however, this troop could stand some max braking practice. The report did not mention anti-skid. He isn't alone. We seldom have the need or desire to make a max performance stop - but we should all know how.

Before every flight you calculate your stopping distance, so I don't need to tell you that it usually comes out ridiculously short. So tell me, do you really think you could get your bird stopped in that distance? If your answer is "no," I suggest you read up on the correct short field landing and max braking procedure, because this is what those figures are predicated on.

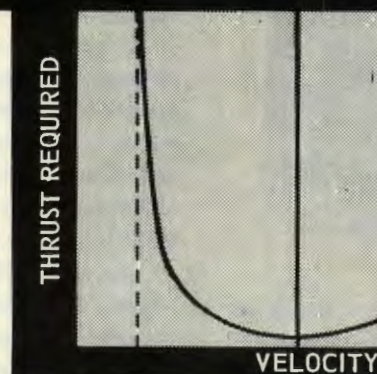
Normally, you never operate that close . . . but hose down the runway with a good rain shower, throw in a pair of bald tires and a crosswind, then add a drag chute failure and the end result may be that your maximum braking distance equals the runway available . . . at this point, you hack it correctly or hit the net.

aero notes

VOLUMES HAVE BEEN written about the back side of the power curve, or, as it has been recently labeled, the region of reverse command. And yet, aircraft accidents are still being attributed to the fact that pilots allowed their aircraft to get so far "back of the power curve" that they couldn't maintain flight. Now, explaining all this has been a favorite sport of hanger aerodynamists for years, and if I had a nickel for every curve and graph I've seen on this subject, I could settle down to a life of ease. But, nickels are hard to come by so I'll take the offensive, cast my bloodshot fighter pilot's eye at the books and try to explain this bucket of worms without pictures.

Talking about aircraft performance requires use of a few terms which everyone must understand. So that we all get started on the same page of the songbook, I want to explain just what I mean by max endurance. Maximum endurance airspeed is that speed at which an aircraft can maintain level flight with the minimum expenditure of fuel. Of course altitude affects fuel consumption, but forget it for now and just think of max endurance speed as minimum fuel flow speed at whatever altitude you happen to be.

Above max endurance speed, everything works out like it ought to . . . an increase in airspeed requires an increase in fuel flow (power) and a decrease in airspeed permits a decrease in power . . . normal command. At any airspeed



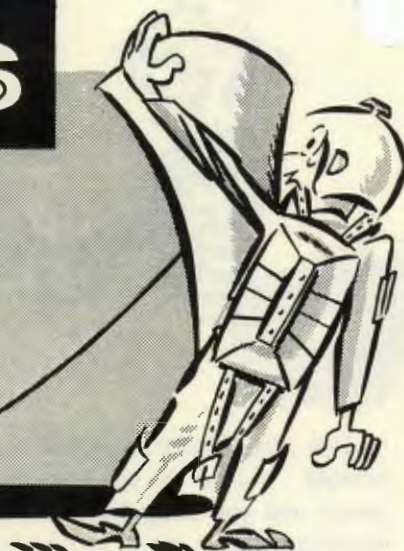
less than max endurance things don't work according to Hoyle. When you are less than max endurance airspeed, a reduction in airspeed requires an increase in power and conversely an increase in airspeed permits a reduction of power . . . reverse command.

Looking for answers in the region of reverse command takes a little digging. Start with a decrease in airspeed. Less airspeed means less lift, so you must increase the angle of attack. The increased angle of attack produces two things . . . more lift and more drag. It's the increased drag that rips it. Let's eyeball that drag for a minute. In the region of normal command, an increase in airspeed results in a small increase in parasite drag. Parasite drag builds up until you don't have enough power to overcome it and that's as fast as the airplane will go. Down in the region of reverse command, parasite drag doesn't amount to much, instead, we run into induced drag. Induced drag increases with angle of attack and here we are again, drag builds up until we don't have enough power to overcome it. But this time, drag

doesn't limit how fast the aircraft can go, it limits how slow it can go and maintain altitude.

Let's fall back and regroup and see just how we bust up airplanes. As the aircraft slows up below max endurance airspeed, you need more and more power to take care of the increased drag. That's fine for a while, but sooner or later you are going to run out of power. With the slightest further decrease in airspeed your aircraft will have a tendency to land regardless of the location of the runway.

We operate within the region of reverse command on every flight . . . you can't take off or land without going thru it. But there is no phase of flight that requires us to get so deep into it that more power is required than is available. Why then do we have piles of wreckage to prove that pilots have gotten into that position? A look at the airplanes tells part of the story. The typical TAC fighter has a high wing loading and a low aspect ratio . . . this makes for pretty good looking airplanes but induced drag is fierce at airspeed and high angles of attack.



is makes the margin between endurance and the point where you have insufficient power to maintain flight a narrow one . . . a margin that you can go thru with very little effort. A recent 84 bash was a classic example of this. The bird was floating down the runway at just about minimum flying speed when the pilot decided to go-around. He added power, pulled the gear up and, in order to keep from touching down, raised the nose. This small attitude change increased the angle of attack and the drag to such an extent that there wasn't enough power available to keep the bird in level flight. Since he was only a few feet in the air, the end result was inevitable . . . smash. Take-off can present a similar problem. If the bird is rotated at too low an airspeed or over-rotated at the proper speed, there just isn't enough power available to overcome the drag being produced. If you're lucky it won't even get off the runway. If you're unlucky, the sudden rotation will send the bird to 50 feet or so before drag overtakes thrust.

There aren't many pilots around who have run afoul of the region of reverse command on takeoff. But most of us have at altitude. Since power available is what limits an aircraft's ceiling, you can run into problems trying to top a thunderstorm. You climb and climb at full power . . . rate of climb and airspeed bleed off until you reach a point where you can neither climb nor gain airspeed. It is then taking all available power to maintain level flight and any change . . . a decrease in power or an increase or decrease in angle of attack . . . will cost you altitude. This same thing can happen at low altitude, but since you have more power available on the deck you can overcome more drag.

This means that you will run out of power at a higher angle of attack and a lower airspeed.

As if we didn't have enough troubles with straight and level flight, turns and Gs make things worse. As compared to wings level flight, bank requires an increase in angle of attack. If you are in the region of reverse command and it's taking 90 per cent to maintain a certain condition, wings level, it is going to take more power to maintain that same condition in a bank. So there you are on the base and overshooting a little . . . increase bank and pull it in . . . airspeed bleeds off and oh my, look at it sink . . . better add a little power, what, it's already bent forward? Sometimes the altitude required to gain flying speed exceeds your terrain clearance . . .

The Air Force has lost 12 aircraft in the last year and a half in "back-of-the-power-curve" accidents. If a pilot finds himself in a situation where more power is required than is available, the only cure is to drop the nose . . . to reduce the angle of attack and drag. Obviously this takes altitude and if none is available an accident

occurs. The only real way to prevent these accidents is to avoid such a situation. Some of these twelve accidents involved transition pilots who hadn't been properly briefed or trained for the mission. But most involved pilots that were experienced in high performance aircraft. The conclusion I draw is that these pilots simply weren't flying the airplane with the ability and judgment it takes to be a good pilot. There's nothing subtle about the angle of attack you have to attain before you don't have enough power to fly out of trouble. Takeoff and landing procedures for TAC's aircraft have a reasonable margin for error and they will keep you out of trouble . . . if you follow them. Knowing what your aircraft can and cannot do makes the difference . . . the difference between a good pilot and a dead one. Knowing a little about the region of reverse command can help you know how your aircraft flies in the low speed/high angle of attack regime. But when the chips are down, it's up to you and your piloting ability to keep yourself ahead-of-the-power-curve.



CHANGING TIMES

By - Capt Vincent C. Hughes Jr.
TAC Office of Safety



changing times by Capt Vincent C. Hughes Jr TAC office of safety

MAJOR CASEY had just returned from C-130 school at Sewart AFB, Tennessee, and was feeling pretty good about getting an assignment back to the cockpit after three years in an attache slot. After all, troop carrier was like home. An old head, he'd gone from flying school into C-82s. He'd flown C-119s over in Korea on those napalm missions, and for many years afterwards, on drops at Fort Campbell and Fort Bragg. He'd been an IP in the C-130 shortly after it was first developed, amassing better than a thousand hours while deploying world-wide wherever and whenever an international crisis developed. Those nine flying lessons at the 4442d CCTG had proven he hadn't lost his touch.

Casey secretly figured his Phase II training in tactical procedures would be a breeze and that it would be just a matter of days before he would have his own combat ready crew.

While talking with his new operations officer, he began to wonder. He didn't know this ops officer from the past . . . in fact, there were very few of the old timers around now. They seemed to be spread pretty thin, what with the tremendous increase in troop

carrier wings in TAC. Quite a change from the old days when Casey had known practically everyone in the business.

What was Ops saying? Sounded like he was outlining more lesson plans than Casey had received at Sewart . . . "procedures haven't changed too much, but in the three years you've been out of this racket, they've dreamed up some new methods of aerial delivery. For instance, have you heard of offset in-trail or vertical IFR formation?"

Casey admitted he hadn't.

"Offset in-trail formation is an aerial delivery technique designed to give you maximum fuel efficiency while you are flying enroute to the combat zone. You go in at high altitude then descend to 300 feet absolute as you enter the combat area. This is to provide maximum protection from ground fire. You fly at around 250 knots and succeeding aircraft are offset slightly, to stay out of your wing-wash. About four to six miles short of the computed air release point you slow down and climb to normal drop altitude. All aircraft deliver their loads into the drop zone at 10-second intervals. Vertical IFR formation can replace the old corridor system enroute to a delivery

point. You fly about one-and-a-half miles apart at 500 feet altitude intervals in sections of six and maintain five-minute separation between sections at the same altitudes. We are conducting tests using station keeping devices that should let us use much closer separation. Extending this system, we think we'll be able to make accurate IFR drops in the very near future, using light weight radar transponder beacons."

Casey turned in his chair, spilling a little of his coffee. "Sure sounds like you've changed the way we use these birds."

"You haven't heard anything yet, we've even developed a whole new alphabetical lingo in this business just to keep track of all the new methods for aerial delivery. We've got LAPES . . . that's low altitude parachute extraction system. With it we can deliver up to 25,000 pounds with pinpoint accuracy on a prepared extraction zone from an altitude of five feet. We've got GPES," . . . the ops officer pronounced it "Jeeps" . . . "This does the same job in the same way except we attach a hook to the load, and use it to engage a ground cable, which extracts the load. We're even working on ways to deliver personnel by these

methods. Then we've got PLADS, parachute low altitude delivery systems, which lets us deliver small loads, day or night, from 200 feet into a clearing only 100 feet square. We can hit it over nine out of ten tries. And just to show that we're really diversified, we have HALO which is a high altitude low opening system for delivering paratroopers. We fly in at 30,000 feet or higher. At present, this comes under the category of special training. You think you might need a bit more Phase II training than

when you first sat down here?"

Casey stared at the ceiling, blew a smoke ring, and slowly nodded his head. So much had been changed in such a short time.

But the Ops Officer wasn't through. "You know I almost forgot about our assault landings. We get some of these young fellows only three or four years out of flying school to put this big bird on dirt or sand strips only 2000 feet long and narrow enough to look like a bowling alley. They even do it at night with a couple of flare

pots to mark the beginning of the runway."

Casey was silent, considering this . . . these young fellows were just out of flying school when he left three years ago; now they were way ahead of him on all these new tactics and procedures. He turned and looked the Ops Officer square in the eye. "It's going to take longer than I thought . . . but in six months, I'll be the best you've got."

He probably would, too.



314TH
TROOP CARRIER WING
ACTIVATED
MAR. 9, 1942



THE 314TH FLEW ON ONE OF THE FIRST AIRBORNE MISSIONS IN U.S. AIR FORCE HISTORY DURING THE WWII SICILY CAMPAIGN DROPPING PARATROOPERS NEAR GELA. AFTER VE DAY THE UNIT CONTINUED EVACUATION AND TRANSPORT WORK THROUGH EUROPE.

IN THE FALL OF 1946 THE UNIT WAS TRANSFERRED TO THE PANAMA CANAL ZONE

IN OCT '48, THE 314TH WAS ASSIGNED TO TAC, AND EQUIPPED WITH C-82s AND, LATER, C-119s. A LEADER IN DEVELOPING TROOP CARRIER TACTICS AND TECHNIQUES, THE 314TH AGAIN SAW ACTION DURING THE KOREAN CONFLICT AND EARNED TWO PRESIDENTIAL CITATIONS.



IN MAY '57, THE WING RECEIVED ITS C-130s WHICH INCREASED ITS HIGHER SPEED, RANGE, LARGE PAYLOAD AND ROUGH FIELD CAPABILITY.

WITH TAC'S COMPOSITE AIR STRIKE FORCE, THE 314TH PLAYED AN IMPORTANT PART IN THE LEBANON CRISIS IN 1958. BEFORE THIS MISSION WAS COMPLETED, THE 314TH WAS CALLED INTO THE TENSE SITUATION THAT DEVELOPED IN FORMOSA.



OTHER PROJECTS INCLUDED "DEEP FREEZE" IN 1960, EXERCISE "SWIFT STRIKE" OPERATION "CLOSE LOOK" IN 1962, AND THE MASSIVE OPERATION "BIG LIFT." NOW COMMANDED BY COL. RUSH, THE 314TH CONTINUES TO LIVE UP TO ITS MOTTO, "CAN DO"



Birthday Blues



Come on, Clyde, let's head over to the club for dinner."

"No thanks, Ellrod. I'm going to stay here and study some more for that check ride."

The squadron was TDY for weapons training and nearly everyone's spirits were high. The schedule called for two short missions a day for each pilot and morale had been increasing right along with proficiency. Lt. Clyde Youngfellow was the only exception. He had the check ride blues.

"I forgot you had a birthday coming up, Clyde. Do you have all the squares filled?"

"Yes sir . . . I got my physical back home and took all the written tests. All that's left is the flight check and I sure want to do everything right. There is so much to remember, I'm checking and rechecking. You know what happened last time."

"That was great, wasn't it! You got all cranked up and then realized your helmet was still back in ops. Well, everyone gets check-itis to some extent, you're not alone. What's bothering you this time?"

Clyde opened the refrigerator and pulled out a carton of milk. After a sip he sat at the desk and looked at the books and papers that covered it. "Ellrod, you have flown with me enough to know that I can fly the bird. I've been hitting the target real well and I'm confident I can fly a good mission. What worries me is all the flight planning and briefing that comes before the mission. I'm not sure that I can do it all in a suitably professional manner."

"How about building me a salami sandwich and I'll take a look at what you've done so far."

"Fine, sir. All the stuff is here

on the desk." Clyde put a slice of meat on the two-day old bread, covered it with hot mustard, put it gently on an old 21a and handed it to Ellrod. "Want a glass of milk?"

"Please Clyde, don't talk like that while I'm eating. We have any beer left?"

"Not a one."

"You sure would make a sub-standard aide," Ellrod mumbled through a mouthful of sandwich. "All the paperwork looks good a the flight plan swings. You ought to hack the check without any problems."

"We brief by the book, Ellrod, and I think we have a real good flight. But I don't know if I'm professional enough to make a check pilot happy."

Ellrod tossed his TDY coat over the back of a nearby chair and stretched out on his bed. "For years people have tried to come up with a tangible definition for that intangible thing we call professionalism. We have been able to strike all around it, but still haven't hit the nail on the head. Sometimes we get all tangled up in the definitions and lose sight of what we're after. You know what I mean . . . you've seen people that believe they are professionals just because they follow a checklist devoutly. Really they have it backwards. A pro uses a checklist

because he knows it can help him accomplish his mission, not because it looks good."

"I sure know what you mean about getting tangled up in the definition of professionalism. I looked it up in a dictionary and didn't get an answer."

"It is a lot easier to say what isn't professional than what is. For example, the old bit about 'first man on the runway is the leader and we'll brief on guard' was a classic of non-professionalism. To get away from that kind of operation we developed organized briefing procedures . . . so far so good. But you run into problems here. If briefing is good, is more briefing better? If you can cover all pertinent information in 30 minutes, would the briefing be better and would the flight be safer if you covered more information and took an hour and a half? I don't think so. In fact it might be less effective because the people getting briefed have to filter the important items from the superfluous."

"I sure agree with you there. I sat in on a briefing the other day and the briefer covered everything

under the sun . . . one of those 'You will note that as the control stick is moved aft, the nose of the aircraft has a tendency to come up' type briefings. I got so bored that I missed start-engine time . . . in fact I don't think he gave it until I asked. But how can you get away from this sort of stuff?"

Ellrod sat up and stretched and then settled back again. "Clyde, a few years ago a man pinned on his wings and was more or less accepted as a qualified pilot. But that wasn't right . . . there was an awful lot more for him to learn before he could do more than just make it from point A to B. He was a pilot, but not a pro. Pilots really didn't know each other's capabilities until they had flown together for a while. But today we complete our internship in combat crew training and then pass two bar examinations a year. We no longer deal with unknown quantities. Because of this, because all our combat ready pilots have demonstrated their professional competence, we can make briefings a concise summary of the mission."

"But, Ellrod, can you give a concise briefing and still meet all

the requirements laid on in the briefing guide?"

"Sure, briefing guides were developed to give you an outline to follow. They are designed to cover all possibilities in a reasonable sequence. As a briefer, you are required to refer to the briefing guide to make sure you haven't forgotten anything, but as a professional you are expected to tailor your briefing to the professional competence of the people you brief. If you have to brief a real beginner you may want to check and see if his shoes are tied and that his name is spelled right on his dog tags. If he is a combat ready pro, it ought to be enough to tell him to be sure he has adequate PE for the mission."

"I see your point, Ellrod, but I still think I ought to play it safe and throw everything into the briefing that I can think of . . . dazzle them with footwork so to speak."

"Look, Clyde, if the Air Force wanted robots, they would buy them. This goes a lot further than just briefing . . . it covers every phase of our operation. A check pilot checks your professional judgment just as he checks the details of your flight plan. Like the dash-one says, procedures are to augment your judgment, not replace it."

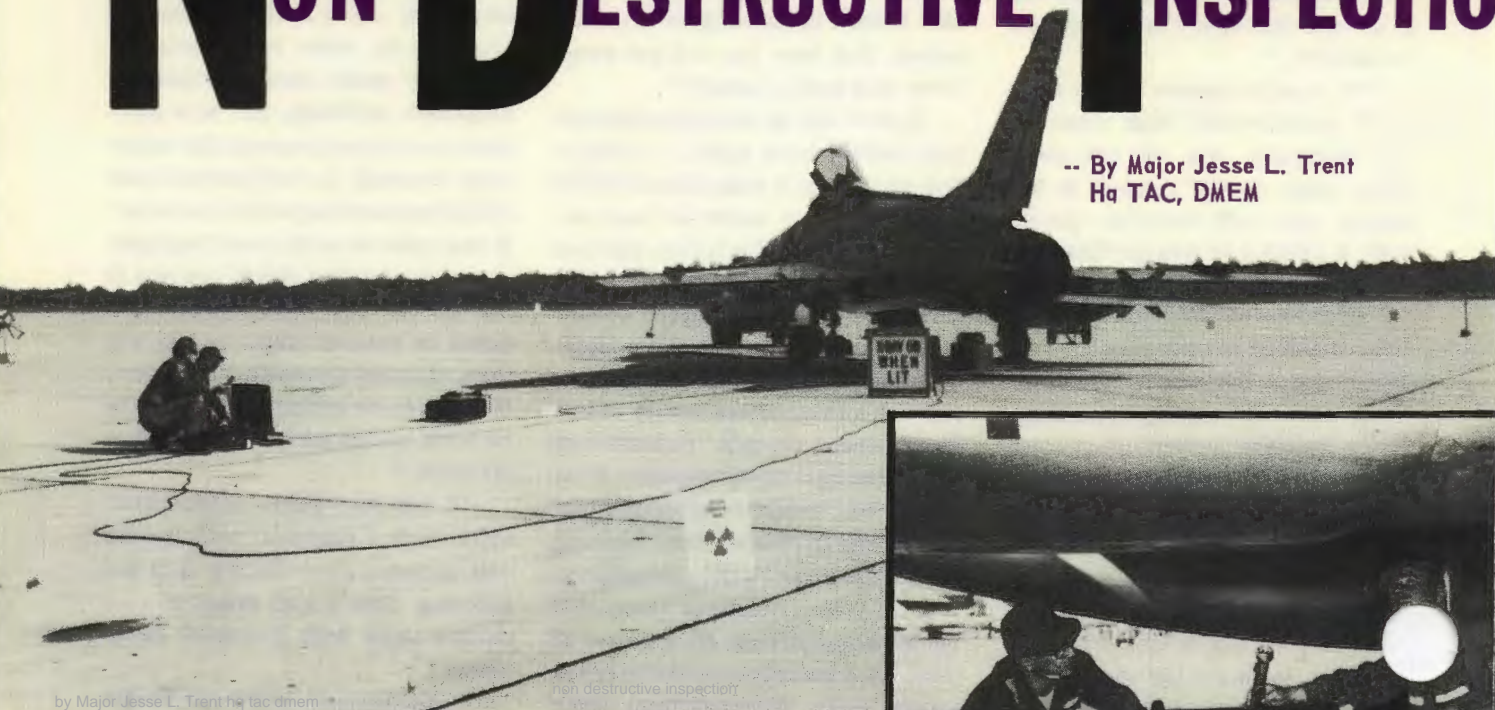
"OK. I guess you're right. I shouldn't get clanked up, but it's hard not to."

"No problem. The first thing to do is relax and get off this milk and mustard routine. The human body is a delicate piece of precision machinery and you have to take care of it. They have free clam pizza at the club tonight and you need something to balance that chili dog you had for breakfast. Let's get on with it!"



NON DESTRUCTIVE INSPECTION

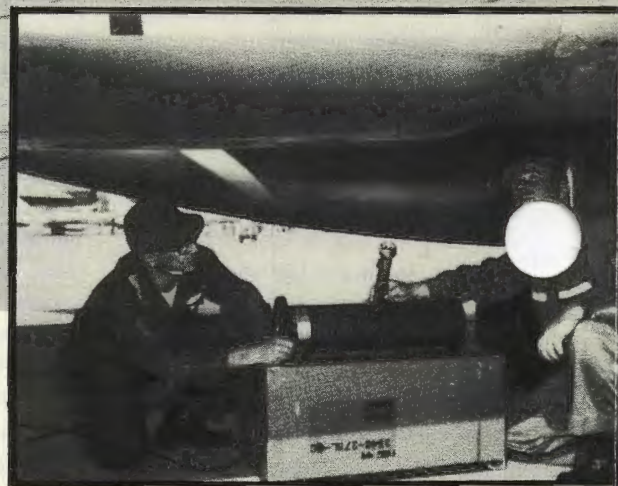
-- By Major Jesse L. Trent
Hq TAC, DMEM



by Major Jesse L. Trent Hq TAC DMEM

non destructive inspection

X-ray equipment as set up to inspect the accessory drive lock ring installation of a J-57 installed in an F-100.



Several months ago, we advertised aerospace nondestructive inspection as a coming attraction. This article is to bring you up to date on this production and to advise you of some benefits TAC has already realized from NDI.

Here are some NDI milestones we have already reached, or will reach in the immediate future.

- * TACR 66-9 and TACM 66-1 have been distributed to outline Aerospace Nondestructive Inspections and procedures.

- * Three sets of equipment were delivered the 15th of December 1964.

- * Three NDI Teams will be

manned by 15 January 1965.

- * Emergency NDI Service should be available on 15 January 1965.

"What will NDI do for me?" is a question in many of your minds. In answer, let me relate several examples of NDI benefits that have already been realized by TAC on a limited basis and a few potential uses. First, I refer you to the article, "F-100 Sensitive Seating," in the October 1964 USAF Aerospace Maintenance Review. This article tells about an improperly installed lock ring on the accessory drive of a J-57 engine installed in an F-100. In addition,

another F-100 accident was attributed to this lock ring ... someone failed to install it! Since this lock ring was the number one suspect in two F-100 accidents, TAC decided to accomplish a sampling inspection. Man-hour costs and aircraft downtime as a result of this inspection were reviewed. Forty-five installed J-57 engines and 26 spare J-57 engines were involved and it was estimated that it would take 720 man-hours to manually inspect the 45 installed engines with a downtime of 360 clock hours. After reviewing the job, TAC decided to accomplish the inspection by ra-

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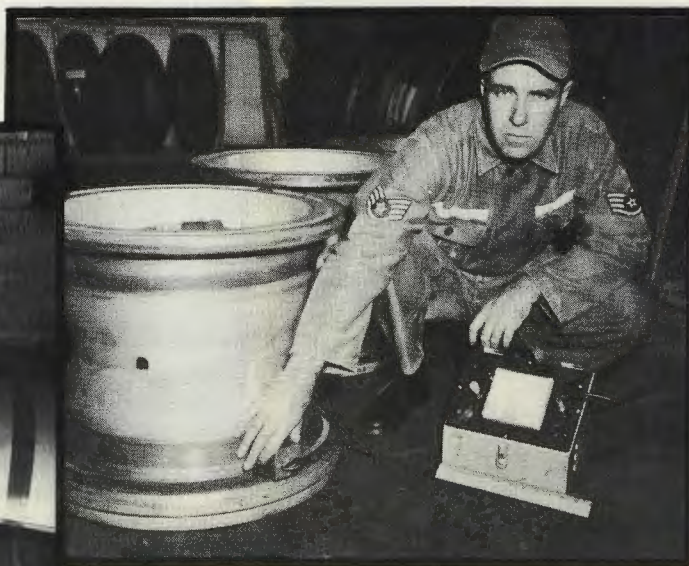


A conductivity meter probes a T-39 nacelle for cracks.

Technicians focus X-ray equipment on the accessory drive lock ring.

diography. Two radiographers, Technical Sergeant Claude L. Brown, 4500 Air Base Wing and Technical Sergeant Andrew J. Smith, 464 Troop Carrier Wing were dispatched to the 354 Tactical Fighter Wing with low power X-ray equipment and they proceeded to X-ray all 71 engines, taking 113 man-hours. Total downtime averaged one hour per aircraft. Man-hours and clock hours included removing and replacing the arresting hook and one access plate, towing the aircraft, setting up the equipment, exposing the film, then processing and interpreting it. All X-ray films

TAC ATTACK



Technician and eddy current instrument to search for corrosion, cracks and damage in a C-130 wheel.

clearly showed that the suspect lock ring was installed. This month, the team will go to Luke AFB to examine all J-57 engines of the 4510th Combat Crew Training Wing.

Ultrasonic leak detecting is another nondestructive inspection method TAC is using to reduce man-hours and aircraft downtime, as well as enhancing flight safety. For years we have had to depend on the hearing of technicians, or on the soap suds procedure to detect gaseous leaks. Neither system is completely satisfactory. The ultrasonic leak detector, properly used, has made the old methods obsolete.

This ingenious instrument detects ultrasound in the 36,000 to 44,000 cps range, which is inaudible to the human ear. Internal and external leaks under pressure create a molecular disturbance which results in ultrasound. A technician uses a small probe to pick up this ultrasound, and the leak detector unit converts it to audible sound. The technician

monitors it with a loudspeaker or earphones. Hand-ear coordination allows him to rapidly detect and locate external or internal gaseous or liquid leaks.

The 23 TFW are keeping the pressure drop in their F-105 hot air manifolds well below that required by the tech order. The 463 Troop Carrier Wing, has been doing an equally effective job of detecting oxygen and hot air systems leaks in their C-130 aircraft. In both cases, flight safety is enhanced and man-hours expenditures and aircraft downtime reduced.

Eddy Current and Conductivity Meters are being used to detect defective wheels on both C-130s and F-105s. These small instruments detect corrosion, cracks, casting defects and heat or fire damage in non-ferrous metals, and their use is certainly not limited to wheels.

But this report on our NDI techniques is limited because we are just getting the program started. However, by the middle of



Ultrasonic leak detector can pinpoint liquid and gaseous leaks in a hurry. An F-105 oxygen system and a C-130's maze of plumbing get a close going over.

the year, TAC Commanders will have equipment to help them:

- * Determine structural integrity of parts.

- * Detect internal defects in suspect material.

- * Assess damage to non-ferrous metals that have been subjected to excessive heat or fire.

- * Detect gaseous, liquid and electrical leaks from both accessible and inaccessible components.

- * Detect corrosion in inaccessible areas without major disassembly.

- * Determine erosion of metal without major disassembly and manual measurement.

- * Replace manual inspections in dash six inspection handbooks with non destructive inspection methods . . . all at reduced man-hour cost and less aircraft downtime since disassembly and reassembly actions will be greatly reduced or eliminated.

TAC's first major application of nondestructive inspection will be accomplished on F-105 aircraft of the 23 Tactical Fighter Wing during periodic inspections. This

is a joint TAC/MOAMA program from which many benefits are expected. Forty-five separate areas of the F-105 aircraft have been selected for inspection by nondestructive methods. Techniques developed and approved by TAC/MOAMA will be included in future F-105 technical orders. A similar program has been started on C-130 aircraft of the 463d Troop Carrier Wing at Langley AFB, Virginia . . . and the ATTACK will keep you posted on the progress of both programs.



On 1 December, members of the TAC Office of Safety bid farewell to Colonel Eugene S. Williams. Now assigned as Chief of the Plans Division under the Director of Operational Plans, Colonel Williams' experience in safety spanned from squadron FSO to the Chief of Safety, TAC. We will all miss his energetic and practical leadership and wish him the best of everything.



Colonel Eugene S. Williams

Colonel Eugene S. Williams

Letters to the Editor



Dear TAT

You people publish an excellent magazine which is carefully read by all the pilots in our headquarters.

In the November CHOCK TALK the Hot Foot article on page 12 started a controversy among our bird drivers.

Specifically, in describing where the ground crew should park the starting unit in order not to blow the exhaust gas into the cockpit, this article states: "Play it safe. Park upwind when possible, or at least point it where the fumes will blow clear."

We think you should have said: "Park downwind, because if you are upwind from an object, the wind is blowing from you to the object and conversely. As the Navy would say, "Park it aft."

We also feel the Chaplain, in the next article, had "harrowing experience" instead of a "horrowing experience."

Perhaps you can tell me who is correct.

Lt Col Earle W. Kelly
1st AF Reserve Region (CONAC)
Stewart AFB, NY

Dear Sir

Me thinks we gave ourself the hotfoot this time and have included a correction in this month's Chock Talk...and...the chief proofreader is duly horrified at being found human...indeed 'twas a harrowing experience.

Many thanks for helping to keep us on the runway - pointed into the wind of course.

Dear TAT

After reading "Instant Experience" in your November issue of the TAC ATTACK, I have come to the conclusion that Capt Ellrod T. Sockroller is really Capt Ellrod T. Clod.

The extra information that he included on his 21A such as forecast altimeter, airway designators, center frequencies and alternate airfield information are handy items, especially in the weather over the initial approach fix. Captain Clod should be reminded, however, that a flight plan prepared in haste will

surely net him a parcel of trouble with a capital "T." You see, he has the Myrtle Beach identifier listed as MYR, but it happens to be MTL and has been so since 1960. This leads me to believe that Clod did not refer to an old outdated FLIP but rather, he found the wrong page and copied down the VOR identifier instead of the TACAN. This could certainly cause a pilot leading a flight of two fighter aircraft a headache at the wrong moment. Maybe Clod doesn't leave his TACAN volume up loud enough to monitor the identifier as he should. Perhaps he doesn't even identify a TACAN station! Heaven forbid! At any rate, I might suggest that Clod take a refresher course on Morse code or at least write down the code in long hand on the 21A in addition to the other extra information he has included.

Now let us take another look at Clod's flight plan. He should have included in block one of the 21A the start engine, taxi and takeoff cruise data. In block two, there should have been an entry showing climb information to level-off and the SID to be flown if it was so planned. It would appear that Clod has spent a great deal of time on extra details and ignored the main problem of accurate flight planning.

It appears that Major Hardnose ought to re-evaluate Ellrod's capabilities to advise and instruct other pilots on navigation.

Capt Normal C. Battaglia
355TFS, Myrtle Beach AFB, S.C.

Dear Norm

Looks like you caught Ellrod the clod with his identifiers down . . . I'd beat him about the head and shoulders except my computer slipped the last time we flew together and I hate to be reminded of having to ask the center to pass a corrected ETA on to Flight Service.

I agree with you about computing fuel used during the preliminaries, but personally add it as a constant to my climb fuel. The level-off point is good on a no-radio-aid trip . . . but due to such things as 270 degree turns at the start of climbout and similar unpredictables, I do as Clodroller and crank all my climb info into my computations for the first check point, planning to obtain my first accurate data at this point and my first accurate how-goes-it at the second check point. If I could be assured that my on-the-ground time and climb route would be consistent I'm sure I'd adopt your system . . . however, to each his own.

I do include the SID in the space I use for route, if planning to make one. The current trend is toward on-course climbs, and I'm not fighting it.

The roller claims he remembers most of his dots and dashes, which is more than I can say. Thanks for your comments.

TAT

CHOCK TALK

inspect, schedule and repair

In early 1962 we needed more OR time to meet an ever expanding flying mission and took a long hard look at both scheduled and unscheduled maintenance to see where we could improve our efficiency without losing effectiveness. Periodic inspection was one function which seemed to need streamlining and the current Inspect, Schedule and Repair (ISR) concept was soon established on a test basis at Cannon AFB, New Mexico, using the 474th Tactical Fighter Wing's F-100s.

The test program was so successful it was expanded to include all F-100 aircraft in January 1963. As of June 1964, this program saved an average of 82 man-hours on each of the last 500 F-100 inspections! To put it another way, this is an average of 5.6 aircraft days per inspection.

Just how did ISR save so many man-hours? Very simply, it is an improved management technique... it insures that periodic inspections are managed by the most qualified men in the Chief of Maintenance complex. The look-phase is by the best men available... men carefully screened by quality control and placed on orders that indicate their special qualifications.

The look-phase is compressed and intensive, so PE managers are able to plan the work-phase much further in advance than with the old system.

Inspectors use a PE work-deck, identical to a standard work-deck except that it is rearranged to let them proceed from point to point and system to

system in their assigned work area in a logical route with minimum lost time and motion. In essence, this is ISR.

The result of the F-100 program was so gratifying, the ISR program was extended to the F-105, C-130, F-101, F-104 and F-84. Soon, all our primary tactical and support aircraft will have inspections performed using the ISR technique.

The aircraft days saved by this program have saved us over ten million dollars, half of which has already been validated by USAF for the cost reduction program.

The ISR program was studied at a recent meeting between TAC, USAFE, PACAF and AFLC, and the principles will soon be employed by other commands.

Inspect, Schedule and Repair has met our original goals by improving quality and reducing down-time and man-hours. Everything considered, ISR has had a very productive year.

hydraulic lock

The 434th Safety Brief warns ground crews of conventional aircraft to find out what's wrong any time an engine refuses to budge when the starter is engaged.

It might be a broken starter.

It might be a hydraulic lock.

One or two men can gain a lot of leverage over the engine while pulling the prop thru. This can develop tremendous pressure against a hydraulic lock actually ruin an engine. The safe thing to do is re-

ve the spark plugs from the lower cylinders as the TO, and turn the engine thru by hand.

old story

The assistant crew chief inadvertently touched the external tank jettison button while checking . . . wonder if anybody warned him that the panic button is always hot and is guaranteed to remove all that stuff hanging under each wing?

loaded

A work crew was trouble shooting a gooney bird fuel system malfunction. The crew chief, who was in the cockpit, signaled for the APU. A civilian mechanic started it and walked over near the left engine to relay messages to another mechanic in the wheel well.

About this time, the crew chief accidentally hit the starter as he reached for the fuel boost pumps. The prop swung thru part of a turn and hit the civilian mechanic in the face.

Years ago, a good friend of mine stood under the prop of a T-6 as his instructor started to debrief him on his shortcomings in aerial gunnery. The in-

structor pushed him out from under the prop, and caused his hat to fall off. "Never stand near a propeller," he cautioned.

My friend leaned over to pick up his hat just as a lone round cooked off from the .30 caliber wing gun. If he hadn't leaned over it would have hit him dead center.

The two hazards are very similar. Treat the prop arc the same way you should treat a gun . . . just as if it was loaded and had a hair trigger.

landlubber's lament

Ol' TAT has been alternately keelhaunched and dangled from a yardarm ever since the November ATTACK reached our seagoing compatriots and they read "Hot foot" in the Chock Talk section. He had been threatened with being set adrift in mid Atlantic in a life boat (pardon, life ship) and with that most inhuman tortures of all, a night weather CCA. Somehow we got our upwind tangled with our downwind . . . what we meant was, "Come on fellas, please park the power unit so the exhaust blows away from the cockpit."



The Old Sarge strolled thru the BX, studying each counter with just the trace of a frown. Rounding a corner he stopped short just as an attractive young woman ran into him. "Pardon me," he stammered, "I better get my brakes fixed."

She grinned, "My fault, I was speeding and didn't signal for the corner." She flashed another smile and hurried on.

The Old Sarge brightened, "Toothpaste!" he murmured, "I remember, we're completely out of toothpaste . . ."

"Hey! Where've you been hiding?"

The Old Sarge turned toward the familiar voice. "Frank, you

old . . ., what are you doing on base?"

"I'm PCS here."

"Good. You still in quality control?"

Frank nodded. "Still in the racket and I sure hope we have a better setup here than we did at Buckpass airpatch."

"Oh? What was the problem?"

"We were the fall guy. Anytime something slipped thru and caused an inflight abort or accident, they always put all the blame onto quality control for not catching it. In self-defense we had to practically redo each maintenance job to make sure it was done right."

The Old Sarge nodded sympathetically. "That gets pretty nasty

. . . and usually ends with the maintenance people getting sloppier and sloppier . . . why bother to do the job right when someone else is going to completely rehash it anyway."

"That's just about what was happening. I had some real good people, but under that setup we looked like a bunch of bums."

"You'll enjoy working here. This outfit believes quality is built into the job by the men doing the work and that you can not inspect quality into it. The boss uses quality control to monitor things and make sure everyone is doing the best possible job."

The two discussed old times and finally went separate ways, the Old Sarge returning to his shopping, once again with a frown. Absently he reached for his tobacco pouch. It was nearly empty. "Oh yeah," he muttered, "I better pick up some tobacco."



SEG NEWS

4450th Standardization Evaluation Gp.

Know your Stdn Evaluators



MAJOR ROBERT J. MASSONI
CHIEF, FIGHTER EVALUATION BRANCH

Major Massoni began his flying career at Tulare, California, in 1943. Upon graduation, he

flew B-26s in France and Belgium while serving with the 391st Bomb Group. He was released from active duty in December 1945, but remained with the active Air Force reserve until August 1950. From 1951 to 1955, he flew F-86s and F-84s in United Kingdom. During 1958 to 1961, Major Massoni was again stationed in England, where he flew F-101s with the 3rd Air Force. Returning to the United States in October 1961, he was assigned to an F-104 unit at George AFB, California, and flew those aircraft until his assignment to SEG in September 1963. Since, Major Massoni has functioned as the SEG F-104 examiner/evaluator and was recently promoted to Chief of the Fighter Evaluation Branch. During his flying career, Major Massoni has accumulated over 5,000 hours of flying time including over 3,700 hours jet time. He attended the University of Nevada, Stanford University and is a graduate of the University of Maryland. His wife, Janie, hails from Norwich, England and they are blessed with three little ones -- daughters Diane and Dawn and son Brett.

AN OPEN LETTER TO FLIGHT EXAMINERS

While I have this opportunity, I want to discuss one important topic . . . one with which you will be working constantly while you are flight examiners . . . and, that is standardization.

What does it mean?

And, is it worth all this effort?

To clarify both questions, I will give you my views from over 21 years of flying and being subjected to some form of stdn/eval.

I won't bore you with some of the old stories . . . such as checking out in the P-40 "captive-air" . . . but will pick up the threads around 1958. As com-

mander of an F-100 squadron, I was well acquainted with how operational procedures were published and followed . . . the operations officer wrote them, I signed them and between the both of us, we darn well enforced them! This was before USAF started their program and the vast improvement all of us have seen the past four years.

I have been in Germany, Turkey, Italy, and the PACAF area, where I watched well qualified F-100 pilots arrive from the States and immediately be placed in a local training program to spend indefinite periods of time learning the local method of flying the F-100. The same "new boy" treatment was given.

pilots returning from overseas areas when they reached their new home in the States.

The stdn/eval program, has, for the most part, stopped this wasteful practice.

I have watched and reviewed all too many accidents which happened because someone had been lying down on the job! Poor documents, lax supervision, faulty maintenance and lousy weather all combine to make our work a bit risky. But the worst accidents are the ones that were caused by the ten per cent who never got the word!

Experience is the most wonderful teacher in the world because if you are still alive, you will remember your lesson well! Only a fool will fail to profit from the experience of others! This experience is published in our flight manuals and operational procedures manuals, and is the best information that can be gleaned from thousands of sorties and years of operation.

To a great extent, we have been able to sort out and choose the procedures which have proven the best available for every crew position. They were developed by people like you and me and have allowed us to complete any mission effectively.

This is really standardization! - the process of normalizing accepted procedures and directing their use.

To maintain the quality of these standards and procedures, we must continually evaluate them so they can be updated, or eliminate them when they no longer serve their purpose. To do this, we must have the best aircrews available as flight examiners. These people must, in turn, have the backing of their commanders and cooperation from the other aircrews to have a first class program.

Personal evaluation is a most difficult task! It takes a good man to point out shortcomings of others, and have them change their ways. We trust that your commanders considered this when they selected you . . . because . . . this job of flight examiner requires an outstanding individual . . . both in the air and on the ground. As flight examiners, you must be as fair and impartial as humanly possible since you live and work with all of the aircrews on a daily basis. You must know your airplane and procedures better than anyone else, or you will soon have the reputation of being the easiest touch in the SEF. You must know the hows and whys of the stdn/eval program and be able to explain it to others, or you will be just another paper-shuffler with wings. Finally, the data you record and send to SEG on the TAC Form 110 must be factual and administratively correct so

it CAN be used to justify changes.

The standards for flight examiners are high, and high they must be! You must make every personal and professional effort to insure that your qualifications meet these high standards at all times! Because, you ARE important people . . . not only to SEG, but to your unit, the command and to the Air Force.

- By Lt Colonel Charles E. Francis
Chief Opns Div, 4450 SEG

AT THE GUN GALLERY

The sweat was burning his eyes but he hardly noticed, for the tension of the hunter was in him. Forcing himself to ease his grip on the stick, he intently scanned the rushing pine carpet for the promised triangular clearing. Off to the left, his



flight leader banked his heavy fighter, exposing the ugly mossy-green bombs clinging like parasites to its belly.

"Ah, Chico Blue," it was his leader, "Barb 14 has the clearing at 11 o'clock. Give me a heading to the target area. Set 'em up hot for dive, Barb."

For the fifth time, he glanced over the several necessary switch positions and the mil setting. Now, the FAC was on the radio again, his voice high with excitement - "Barb flight, your target is a column of APCs behind two medium tanks, located two point four miles at 041 degrees . . ."

Two point four miles indeed! That meant the damned things were already under their noses! He wished Chico Blue, the FAC, had spent less time briefing the mil specs of the target and more time setting up the flight. He was sure he wouldn't be able to tell the difference until he was well inside max firing range anyway.

On the morning sortie he had shouted his frustration into his mask as he had wheeled around to swoop past three times before spotting the missile van clearly, just off his right wing. There it had been,

just at the edge of a small clearing. He hadn't dared take his eyes off it as he hauled back into a whiffer-dill. Damnation!! He was going to prang if he didn't watch it! The unaccustomed high maneuvering weight had ruined his pass. By the time he had corrected the shuddering slide that should have been his final turn, he had lost the van in the trees again. Furiously, he had wedged the throttle into 'burner and had banked the humpbacked brute up into a soaring chandelle. Now quick, where? - there!! I got it!! I'll get him this time! Leave it in burner, man, this hog is gonna need all the help it can get to hack this bend. Unnnh, mmmade it. Now here she comes; don't like this 10 degree incendi-jel delivery, but in these trees . . . punch! He was long a country mile. This was a hell of a time to be trying a new delivery . . .

Grimly, he remembered having straffed at the first truck still using incendi-jel sight settings, having powdering a tree shadow; the two near misses, with Barb 3 and the final blow, being sent off the range for fouling.

This earnest young man was not, fortunately, getting his lumps in a shooting action. He was giving his all for points in Matchpoint competition. As you can guess, his score was not superior, but his lethal potential had quadrupled after that sweating, cussing, ego bruising day.

"I couldn't believe I had lost that van again."

"I must have fired 2000 feet out of range."

"Your rockets were short, so were yours, Four."

"Why did you have us strafing a tank, Pete?"

"You guys all hit the same damned APC."

"It was the only one I could see."

"I saw every target, just as I pulled out."

"Man, if I had another chance at this complex."

At this last outburst in the debriefing, a grin wrinkled the senior judge's whiskery face. The colonel hitched his muddy fatigue pants to a more comfortable position. "Son, that's the point of this whole shooting match. If and when you do have this kind of job for real, we're betting you'll remember today. We've seen everything out there in the boonies, including the wrong end of a rocket, but you guys are getting better, and that's what makes eleven hours in the swamp a little easier."

Operation Matchpoint, or TAC OPLAN 2 is TAC's floating gun gallery, alternating between Luke and Hurlburt. Here Joe Fighter Pilot puts his combat readiness state on display to win, lose or draw. The most critical eyes in the business, other fighter pilots, watch every meet; the communication nets hum with anxious inquires. It's serious business.

Deadly serious. And the winners are truly honored. For the losers, there is hardly any consolation that, after all, it was merely a game.

Tomorrow, and tomorrow, the challenge will be flung to you, 23rd wing, or you, Charlie Flight, or you, captain. It may be another Matchpoint; it may be the ultimate challenge. Have you done your homework? Are you prepared?

—By Capt Laurence A. Duaine
F-105 Evaluator, 4450th SEG

UDMH! UNSYMETRICAL - DIMETHYL - HYDRAZINE

Sure is a mouthful, isn't it? It's not fatal when you say it, but just breathe in a gulp or two. Zot! You are probably asking, "So what? Never heard of it before." Well, for the education of you AGM-12/B launchers (Bull-pup to most of us), UDMH is with you every-time you launch. Here is an extract from the Aerospace Medicine Report on Military Public Health prepared by the Preventive and Missile Medicine Departments of the USAF School of Aerospace Medicine located at Brooks Air Force Base, Texas.

If you say you have never heard of it, join the club. But therein lies the story.

"An analysis of the cabin air in the F-4C aircraft



was made prior to, and after, firing the GAM83 missile to determine possible hazard to the pilots from exhaust products of the GAM83. The GAM83 utilizes fuming nitric acid as the oxidizer and 50 per cent diethylene triamine, 40.5 per cent UDMN, and nine per cent acetonitrile as the propellant; therefore, analysis was made for oxides of nitrogen and UDMN. Several air samples were taken at various intervals after the firing. Concentrations of UDMN varied from below detectable limits to 60 PPM. Concentrations of nitrogen oxide were below detectable limits in all cases. Recommend the pilot and co-pilot use 100 per cent oxygen after each firing until the is a complete change of air in the cabin."

For those who do not understand the significance

that statement, try this from AFM 160-39. "Unsymmetrical-Dimethyl-Hydrazine (UDMH) - on short exposure, systemic effects involve the central nervous system. Resultant symptoms include tremors. On exposure to higher concentrations, convulsions and possible death follow. Repeated exposures may cause toxic damage to the liver and kidney, as well as anemia. Threshold limit value for Hydrazine is 1/2 part per million."

In short, a good whiff of UDMH and you will be in sad shape.

This choice bit of information wasn't common knowledge to us fighter types and ignorance was bliss until a flight surgeon at MacDill AFB, Florida,

spotted this short paragraph in the Medical Journal, realized Bull-Pup firing was to take place shortly and brought it to the attention of the 836 Air Division Tactical Weapons School. Due to the importance of this info, a critical safety hazard report was initiated in accordance with AFR 60-9. This required SEG to take action within 48 hours.

The heroes of our story are 1st Lt Kenneth Keller, Assistant OIC of the 836 Air Division Tactical Weapons School and Captain Louis H. Cargill of the 836 Tactical Hospital (Flight Surgeon).

A deserved well done to both Captain Cargill and Lieutenant Keller.

- By Capt Walter Burkett
839AD, MacDill AFB, Fla

No one is completely useless...
they can always serve as a

BAD EXAMPLE

By LtCol Paul L. Smith
839th Air Division
Sewart AFB, Tenn

I'M GETTING sick and tired of this attitude some people have around this joint! Now I know you gotta have some discipline, but listen to what these safety guys are doing. Don't get me wrong - I've got an open mind about safety - but let's take Sam.

Sam works on the line under me. Yeah, I'm a supervisor. Now Sam's an airman one class, and he's really one of the boys. So a couple of months ago, Sam and me drop by the Club for a couple, three cool ones after work. Now I know Sam don't drink more than six beers and two little shots of booze before we leave. He couldn'ta, we only been there an hour. Anyway, Sam gets jammed up behind this farmer goin' home on the back highway. The guy's only doing about 45 and Sam is in a rush to get home for supper, so he goes around - not doing more than 65 - 70. There's a little hill there and some jerk comes up over the

top and slams into Sam before he can get back in his lane. They almost miss each other and only tear off a fender apiece. Sam goes into the hospital for about a week with a few cuts and boy what a stink! You'd think he was driving Government property. Some hick cop says Sam was drunk and tries to throw the book at him. Me, I tell the Old Man that Sam's okay, so he gives him a verbal and lets him go - which ain't bad at all.

Now the whole base has it in for Sam. Him and me get into a little drag race on the main gate road - only going about 55, and Sam is sticking right on my tail, so the APs slap a ticket on him for tailgating. Me they let off with a warning, but they really give it to him. The Old Man calls us both in, but we're doing a good job for him and I give him the bit about just lettin' off steam, so he says, "Boys will be boys," slaps us on the back and lets us go. Whatta guy!

Well, the other day Sam and me stop by the Club again and have our usual, so Sam says, "Let's go up the road for a night cap."

Now I know Sam, and he's a good driver so I crawl in with him. Man, that wagon of his can really move! We're doing almost a hundred when Sam hits this little patch of ice which could happen to anyone. All of a sudden we're going backward in the other lane and there's this stupid truck. Well, I don't remember much else till I come to in the hospital with a bunch of tubes in me and my legs in a cast and sling. Somebody tells me Sam bought the farm. Boy, that stinkin' truck had to be right there, didn't it? They also tell me I may not walk again.

Now they come around askin' me about giving counselling and supervision. What was I supposed to do? Sam was a darn good driver and it makes me sick - them talking about him like that and him dead. And me - what else do I have to put up with? Here I am all banged up and they stand there puttin' the poor mouth on me. Said I could have kept Sam alive if I'd done my job - I hear they even blasted the Old Man. What a bunch!

TAC TIPS

SNOW BOUND

This is a non-TAC accident, but considering the season and past experience, we can ill afford to ignore the warning. Speeds, power settings, use of flap . . . everything . . . was perfect except for one small item. The aircraft touched down 75 feet short of the runway in 18 inches of granulated snow. The left gear sheared and the aircraft skipped onto the runway and slid off after the aircraft settled onto its left wing. The pilot said he did not make a hard landing and that the first clue he had of the damage was when the aircraft started to settle on its left wing.

Investigators believe damage was more from sudden drag induced by the loose snow rather than from the aircraft dropping in. Had the aircraft been over the runway instead of the overrun it would have been a normal landing.

Snow destroys visual clues and makes it harder for a pilot to judge his height. A few evergreens or frangible markers poked into the snow around the approach end of the runway can do much to give a pilot the necessary clues. Pilots will do well to use ILS, GCA or a visual glide slope indicator when any of these aids are available . . . but most important, snow should be removed from the overrun. Eighteen inches of snow leading up to the runway threshold is an invitation to this type of accident.

TOPPLED GYRO

Enroute to the bomb range, a tactical fighter pilot became disoriented. Flight instruments didn't help, so he aborted the mission and had his wingman escort him back to base. He was dizzy and nauseous, but managed to complete a safe straight-in approach and landing.

The fly doc took a blood sample, checked the oxygen system, made other tests and came up with the verdict that the disorientation, dizziness and nausea were all caused by an ear infection.

The sneezing season is with us and despite TV ads

to the contrary, there are no known cures for the common cold. Colds and other similar infections add nothing to this business of flying aircraft. Play it safe, stay on the ground until you're over the miseries.

PHANTOM FLIP

A Navy F-4 crew ejected following a stall and spin . . . the pilot executed a tight combat thrust wingover after a simulated Sparrow firing at 6000 feet. After turning about 90 degrees, the aircraft stalled and entered an inverted spin. The crew ejected at about 3000 feet.

THREE FOR ONE

In case you have had trouble finding the Airman's Guide recently, try looking for the Airman's Information Manual. FAA has combined the Airman's Guide with the Directory of Airports and Seaplane Bases and the Flight Information Manual to make one single streamlined volume.

The new manual provides all the info needed to plan and conduct a safe flight . . . but will not contain legal and administrative notices or other non-operational information.

NO MARK

Weapons delivery to a fighter pilot is good flying and a real challenge. So naturally we give it our all, and good scores mean a lot.

Coming off target after a good run or a good pull, no one likes to hear the range officer call, "NO MARK." Usually, the first reaction is to crank your head around a little more and look a little longer for a mark. If that doesn't produce results, a quick look out to pick up the man ahead, then check the switches. This is when the bank gets too steep, the nose gets too low, and we scare ourselves by getting too close to the ground or becoming momentarily disoriented.

A normal splash only takes a fraction of a second to spot because we know where to look . . . at the bull.

marks tend to divert our attention a little longer. As to the ground, this isn't good and has been the price of a few farms.

The switches will be in the same position back on downwind and the range officer . . . in most cases . . . won't give you a score even if you do spot the splash.

TOUCH-AND-GO

A C-124 attempted a night formation join-up after some practice single ship drops. The other two aircraft were orbiting at 1000 feet AGL, as the pilot headed the big bird out over Delaware Bay and circled back to join from below. During this turn, the left wing, and number one prop and engine executed a forceful touch-and-go with the salt water, causing substantial damage to the aircraft, but Old Shaky limped home successfully. There were four pilots, two navigators and two engineers aboard. No one paid close enough attention to their altimeter to notice the bird was in a descent. If you think it couldn't happen to you, rumor has it a C-130 crew came within a very few feet of doing the same thing on another recent night formation join-up over water.

OUCH!

An F-100 pilot halted his machine in the de-arming, opened the canopy and put both hands outside the cockpit as per local SOP. Shortly afterward, the brace that holds the canopy actuator mechanism broke and the canopy came tumbling down. It bounced off the pilot's upper arms and he hauled them into the cockpit before it hit on the rebound! His arms were badly bruised, but still attached. The unit now thinks pilots should place their hands on the instrument shroud or on top of their helmet while the bird is being armed or de-armed. They also suggest we keep our hands and arms inside the cockpit when taxiing.

KNOBBY PROBLEM

A recent urgent action interim TO on the F-5 warns of a possible altimeter malfunction affecting AAU-7/A and A/A altimeters. If someone inadvertently pulls on the barometric setting knob when they crank in an altimeter setting, the setting mechanism can disengage. The barometric scale in the Kollsman window will move, but the 100 foot pointer will remain stationary.

This is caused by a defective knob shaft pin in the altimeter . . . however, it isn't necessary to pull on this knob to set your altimeter and a little care may keep you from having to abort a mission or from getting a scare if you goof it up in the air.

TAC ATTACK

IN-FLIGHT ICING

Altho ice and its effect on flying machinery is still much the same, the terms used to describe it have changed. Basically, the terms describe worse conditions than before, so you'll have to adjust your thinking and actions to match. Here's a comparison:

OLD	NEW	YOUR RESPONSE
Light	Trace	No real problem.
Moderate	Light	Watch it.
Severe	Moderate	Act fast!
Extreme	Heavy	You're in trouble!

SPEAK UP

Not so long ago an old head was leading a flight of two on a TACAN penetration and GCA approach into an airfield that is located near some high mountains. Shortly, after leaving the initial approach fix, and well into the weather, approach control requested the heading being held. Lead responded with a heading 20 degrees greater than published. None too soon, approach control gave level-off and turn instructions to provide clearance from ski slopes.

Sure enough, lead was using an outdated letdown book that had a 20 degree error in the letdown heading. A notam gave a correction to the high altitude terminal letdown book but was withdrawn with release of new books.

The scarey part is that the wingman realized lead's heading error and said nothing. Figured the old head knew what he was doing.

SAFETY CONFERENCE

A TAC Safety Conference is tentatively scheduled to be held at Langley AFB in February 1965. Detailed information will be forthcoming, but all areas of safety interest will be covered. Now is the time for all Directors of Safety to start planning to present their views.

TOE TIPS

Our Navy cousins are now issuing boots with steel safety toes to all pilots flying aircraft equipped with ejection seats. Sounds like a sound solution to a potential hazard.

UNDERSHOOTS

The Hercules can stand a lot of strain, but it folds up a little under the pain of a landing undershoot. Uncle Sam is paying to unbend four of them that have met this fate in the past six months. Three were attempting to land on hard surface runways. The only one assessed to TAC was an off runway, minor accident. Two of the other three were major accidents. Even if the runway is only 4000 feet long, you don't have to land on the first 100 feet. Your charts will tell you it takes a lot less than 3900 feet to stop this forgiving bird. So aim for a point which will give you a little margin for error on the front end, as well as a little extra stopping room for the wife and kids at the far end.



ALAMO SLING SHOT

You can teach an old dog new tricks, thanks to the efforts of the 433d Troop Carrier Wing, Kelly AFB, Texas. Faced with the problem of improving A-22 container delivery accuracy from their C-119s, the 433d devised the Alamo Sling Shot System.

The idea was to find a way to accurately control the opening delay of cargo parachutes. For years the variation in the time it takes a load to get out of the aircraft using gravity ejection has ruined navigator's circular error averages. The electrically driven monorail system, which was designed to drop parabundles through the paratainer doors located in the forward end of the cargo compartment, was never used because it proved unsatisfactory. The 433d combined the monorail system with David's weapon for his battle with Goliath and evolved an entirely new technique.

The system incorporates a continuous cable and sling which is attached to Number 20 Trolley of the monorail system. It extends back to a cable pulley located near the aft end of the load to be ejected,

around in front of the load, to another pulley on opposite side which is near the aft end of the and back to the monorail Number 20 Trolley. All items used are available thru Air Force supply channels, or can be purchased locally. Loads up to the full cargo capacity of the C-119 can be positively and safely ejected in a single shot out the rear of the aircraft. The opening delay times are reliable to within tenths of a second and delivery accuracy is averaging inside 100 yards.

This system has very recently been approved and is now under consideration as a replacement method for delivering all heavy equipment from the C-119.

Congratulations 433rd on a job well done.

HOT TIP

A headquarters troop, highly qualified F-100 type, had difficulty writing with a ball-point pen and heated the tip to 'prime' it. The pen melted and he tossed it into a wastebasket filled with paper. Some moments later the basket was on fire. LESSONS LEARNED: If you write fast, make sure your pen isn't hot when you discard it.

LEASHED

Currently, many TAC C-119 wings are training new loadmasters. In a search for ways to make training safer, one wing remembered using dog-leashes to keep the safety-men, pole handlers and winch operators from falling out during their trapeze capsule recovery operation. These leashes are high strength fabric lines about six to ten feet long, equipped with snap fasteners. One end is snapped to the individual's chute harness and the other to the aircraft. The unit has revived this system and issued the straps to every loadmaster and trainer loadmaster.

A word of caution . . . there are several snap fasteners in the equipment catalogue and not all of them are strong enough or sure enough for this type operation.

IT'S IN THE BOOK

A T-bird from another command ended up in the barrier after the pilot aborted his takeoff because of a partial power loss. The partial power loss was traced to insufficient throttle friction. The throttle came back when the pilot reached for the gear handle. This is not new, and is THE reason step number one in the power-loss-on-takeoff procedure is to check the throttle full forward. Dash one anyone?



Major William J. Martin, Jr., of the 452d Troop Carrier Wing, March Air Force Base, California, has been selected as a Tactical Air Command Pilot of Distinction.

While flying over arctic waters Major Martin's heavily loaded C-119G developed an engine fire. The fire was extinguished but all attempts to feather the propeller were futile. Vibrations from the unfeathered prop were so severe that navigation radios were unreliable, the crew had difficulty reading flight instruments and altitude could not be maintained. The crew and passengers were alerted for bailout, because lack of a suitable area and poor aircraft control made a landing improbable. By reducing airspeed to a minimum, Major Martin was able to lessen vibration during the 20 minute IFR flight to the nearest island; however, the aircraft still could not maintain altitude. A final attempt to feather the prop proved successful and Major Martin made a safe single engine landing at an emergency field 30 miles away.

Major Martin's accurate analysis of the problem, and his determined application of the proper procedures qualify him as a Tactical Air Command Pilot of Distinction.

PILOT OF DISTINCTION



1st Lt Jack N. Sanders, Jr; Capt Stephen C. Cucci; Capt Leigh M. Holt, Flight Leader; 1st Lt John P. Browning, and 1st Lt Jerald D. Saunders

MATCH POINT IV

A flight from the 356th Tactical Fighter Squadron, 354th TFW, Myrtle Beach AFB, South Carolina can rightfully claim to be the best in TAC. In winning Match Point IV, the team scored 21430 of a possible 35000 points. Well Done.

MAINTENANCE MAN of the MONTH



Staff Sergeant Leon Tollett of the 1st Air Commando Wing, Hurlburt Field, Florida, has been selected as the Tactical Air Command Maintenance Man of the Month.

Sergeant Tollett was responsible for finding solutions to many of the problems that the 1st Air Commando Wing encountered while adapting aircraft to suit their mission requirements. His diligence and resourcefulness saved many man-hours and dollars during the preparation of the A-1E and B-26 as a weapons system for TAC.

The sound judgment and positive attitude displayed by Sergeant Tollett have been a credit to himself as well as an inspiring example to his unit and make him a qualified and deserving Maintenance Man of the Month.

CREW CHIEF of the MONTH

Staff Sergeant Roger K. Crossman of the 4512th Organizational Maintenance Squadron, Luke Air Force Base, Arizona, has been selected as the Tactical Air Command Crew Chief of the Month.

As an F-100F crew chief, Sergeant Crossman has displayed both technical knowledge and self determination. His aircraft has remained in-commission for approximately seven weeks since it returned from depot overhaul. While maintaining this high standard, Sergeant Crossman provided guidance for younger crew chiefs, served as a very efficient night flight chief, was a trouble shooter on the drag chute system, assistant flight chief, and monitored man-hour accounting for the workcenter.

In addition to Sergeant Crossman's versatility, technical knowledge and positive attitude, he is a resourceful leader and certainly qualifies as one of TAC's top crew chiefs.



STRAIGHT

Thanks to superb maintenance and a philosophy of always deciding on the safe side, the 434th Troop Carrier Wing at Bakalar AFB, Indiana, has added another year to their accident-free record. Eight years . . . 90,400 hours, or about 36,154 sorties . . . 15,365,671 air miles . . . ALL WITHOUT an accident. Colonel John W. Hoff, who commands the 434th, and Lt Colonel Ray J. West Jr., Wing Flying Safety Officer, are rightfully proud of this record and of the hard working men who set it. So are we.

TAC TALLY

A COMPARISON OF TACTICAL AIR COMMAND ORGANIZATIONS

NOV TALLY

UNIT	MAJOR	MINOR
3TFW	1	
27TFW	2	
1ACW	1	
23TFW	1	1
355TFW	1	

ACCIDENT FREE

MAJOR & MINOR

JET

ACTIVE	MONTHS		ANG
12TFW	18	19	107TFW
363TRW	6	19	140TFW

CONVENTIONAL

ACTIVE			RESERVE
4500 ABW	41	96	434 TCW
464TCW	19	57	435TCW

MAJOR ACDNT RATE

TYPE	1964*	1963
ALL	10.1	10.3
F-4	5.5	0
F-105	27.7	23.5
F-104	13.2	33.2
F-101	21.7	13.9
F-100	16.9	12.8
F-86	0	0
F-84	22.4	22.9
B-66	0	0
B-26	46.8	8.6
T-39	0	0
T-33	0	1.6
T-29	0	0
KB-50	11.9	4.1
C-130	1.3	1.0
C-123	4.7	4.6
A-1E	12.0	0
U-10	30.0	11.6
T-28	0	37.2

Aircraft accidents in November totaled six majors and one minor. An F-105 pilot ejected during a weapons delivery mission after experiencing a severe explosion, fire warning lights and loss of flight controls. He received minor injury on landing due to high, gusty surface winds. Another F-105 pilot had to manually open his seat belt and deploy his parachute after ejecting from a burning aircraft that had lost most of its throttle response. Minor damage was caused when a 450 gallon tank separated from an F-105 during a 3 G turn and hit the horizontal stabilizer.

An F-100 pilot successfully ejected after a gradual power loss interrupted his initial approach for landing. An airstart on the emergency fuel system was unsuccessful. One pilot was killed in an F-100 accident which occurred during an IFR departure. Possible causes are MM3 failure, pilot distraction, or vertigo. Two pilots received minor injuries when they ejected shortly after take-off from an F-100F that was on fire. The cause of the fire has yet to be determined.

An A-1E pilot and observer were killed when their aircraft hit some trees on a night ordnance delivery mission.

* 1 JAN - 30 NOV 1964

