

TAC ATTACK

TAC Attack August 1965



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COVER PHOTO:

A flight of TAC F-4Cs return from a mission.

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Change of COMMAND



On 31 July General Walter C. Sweeney, Jr., Commander, Tactical Air Command, retired from the United States Air Force, concluding a distinguished military career that has closely paralleled the growth of present day air power. From his early assignments as a lieutenant with the Third Attack Group at Barksdale Field, Louisiana, and the 5th Bomb Group in Hawaii, General Sweeney contributed an ever increasing part toward the growth of air power.

During World War II he commanded the Army Air Task Group which turned back the Japanese fleet during the Battle of Midway and later served as Chief of Staff and Deputy Commander of the 73d Bomb Wing which brought its B-29s into the war in the Pacific. Later, he participated in the first low-level B-29 attack against the Japanese.

In October 1947, General Sweeney was assigned to the Office of the Secretary of the Air Force and the following year was named Director of Plans for the Strategic Air Command. In April 1953, he was selected to command the 15th Air Force at March AFB, California. While in command of this force, he led a trio of Stratojets on history's first non-stop jet bomber flight across the Pacific.

From August 1955 until September 1961, he commanded the Eighth Air Force at Westover AFB, Massachusetts.

On 30 September 1961, General Sweeney assumed command of the Tactical Air Command to lead this organization into the aerospace era. Under his leadership TAC has grown in stature to become one of the most effective and versatile fighting forces in the free world.

On the first of August 1965, General Gabriel P. Disosway returned to the Tactical Air Command as Commander, having served as vice commander three years before. Originally commissioned a second lieutenant of Field Artillery after graduating from the US Military Academy in June 1933, he completed flight training in October 1934. His first assignment was to the 55th Pursuit Squadron at Barksdale Field, Louisiana. Transferred to the training command, he advanced to command Bryan Army Air Base in January 1943. In April he went to Panama as Commander of the 37th Fighter Group and later served as Deputy Commander of the 26th Fighter Command and trained the First Brazilian Fighter Group.

In January 1945, he transferred to China as operations officer of the 312th Fighter Wing and was missing in action for one month after being forced to abandon his fighter when it was shot down. He returned to command the 311th and 312th Fighter Groups.

After the war, General Disosway studied at the Air War College and served as Chief of the Training Division, Directorate of Requirements, Hq USAF. In 1951 he became Director of Training under the Deputy Chief of Staff for Personnel. After commanding ATC's Flying Training Air Force, for nearly five years, he went to Ramstein, Germany to command 12th and 17th Air Forces.

He was Senior Air Force Member of the Military Studies and Liaison Division, Weapons Systems Evaluation Group, Office of the Secretary of Defense prior to being assigned to TAC in July 1961 as Deputy Commander. In November 1962 General Disosway became Deputy Chief of Staff, Operations, Headquarters USAF and in August 1963 was assigned as Commander-in-Chief of USAFE.

angle of ATTACK

*Trust that man in nothing who has
a conscience in everything*

—St.

Angle of attack



Colonel Gust Askounis
Chief of Safety

A couple of years ago we asked some of the old, bold pilots from the early days of aviation for their views on flying and safety. Their replies are best summed up by General Spaatz, who said, "Overconfidence is what makes actors and kills aviators . . . It can infect the experienced as well as the less proficient. Pilots must be aggressive, but not to the extent that they lose their good judgement." They all gave particular emphasis to the necessity for recognizing the limits of each operation or maneuver.

Two recent fatal accidents vividly brought these words back to mind. In both cases, highly skilled and experienced pilots betrayed the trust which had been placed in them, knowingly violated directives which limited them, and pressed beyond the brink of maximum performance to disaster.

Every operation or procedure depends on the personal responsibility and integrity of the people who do the work. There is no room for the overconfidence and complacency which often follow a lack of self discipline. No competent pilot is going to fly into the ground or get into an unbriefed hassle on airways unless he is deliberately taking advantage of the freedom from constant, direct supervision which is part of our flying trade.

Unfortunately, it is too often the old heads . . . the top guns and the smooth instructors and leaders . . . who are guilty of pressing beyond the established limits, challenging less experienced pilots to follow their example.

Each Commander, Ops Officer and Flight Commander has a moral responsibility for the growth and development of his pilots. Proficiency, pride and fighting spirit can all be developed without throwing out unreasonable challenges. An environment which develops cool-headed, mature pilots fully capable of efficiently completing the mission, is greatly dependent on the impression created by the old heads. We can't use the immature, compulsive performers who can only reach the goal by running out of bounds. We need the real experts who take pride in their ability to complete a task within the framework of limitations that ensure success.

nothing new from



DANANG

By - Captain Robert C. Oaks
416th Tactical Fighter Squadron
England AFB, La.

"**H**awk Lead, bogies seven o'clock and closing!"

"Lead, break left! Break left!"

"Roger Hawk lead, understand ejecting. Stow all loose equipment, check visor down. Get your head back and squeeze the handle . . . and good luck."

Sounds like a grim way to end a good flight on a warm spring day doesn't it? But there are a lot of grim things about guerrilla warfare, and what we have recently seen in North Viet Nam is guerrilla warfare in the air. We have heard a lot about guerrilla tactics recently. How do they operate in the air? Our encounters from here

Danang produced the following observations:

* When hostile air has inferior equipment he will delay his strike until conditions are heavily in his favor.

* When hostile air attacks, he will come in fast and won't stay long.

* When he comes he will be shooting without waiting for the tracking conditions to be ideal.

These may not seem too original and the old combat veterans may ask, "What's new?" But there are getting to be fewer and fewer of the "I've been chased" guys around and I'm writing this to minimize the surprises.

How do you combat these tactics? Let me review a few basics and put forth some ideas

for you tactical fighter pilots to consider.

The primary rule for air-to-air warfare is to see the enemy at the earliest possible moment, visually or electronically. Seems simple enough. But it is not simple when you are beyond your radar limits and can only see two miles in the haze and are under enemy GCI coverage. And these are the conditions the enemy is going to wait for. So train to look. Sounds trite, but I dare say with stateside travel aids like universal radar coverage and assigned altitudes for everything from Pipers to Geminis the average pilot has let his looking habits become less than outstanding. Effective look-

ing is a habit which must be cultivated. If you as a wingman have quit trying to be the first man in your flight to see every bogey, your habits are poor. If you as a leader are not making this difficult for your wingman by looking hard yourself, you're too complacent. When bandits come, it will be quick and you may spend the rest of your life regretting your poor habits.

The "shot at boys" say it is unnerving to see the 37mm winks, whether the MIG is in tracking position or not. The point to be emphasized is that combat is not the time nor the place to perfect your tactics. With as much training time as we are compiling, the right move or counter-move should be instinctive.

Today, in tactical fighters, this is not the case. Those misled prophets who said there would never be another Korea and that air-to-air missiles have made dog fighting a matter of history have done us a disservice from which we haven't quite recovered. Strong talk? Maybe so, but before you protest too loudly answer a few questions for yourself.

Can you readily identify five Communist built fighter aircraft?

Can you readily identify five Communist country aircraft markings?

Can you readily identify five US Navy fighters in the air plus whatever allied aircraft may be in your theater?

Have you ever planned and flown air-to-air missions against fighters other than your own brand?

Do you know the advantages and disadvantages of your aircraft as compared to the enemy aircraft which you may encounter?

Do you plan and fly meaningful air combat tactics missions or do you just "fill the square" by

putting the man on the perch and having at it?

Do you fully understand the capabilities and limits of your armament and weapons system?

If you are uneasy as you answer some of these questions, you are probably ripe for a little retraining. Rapid and accurate identification of both friend and foe is a must in the air. With the multiplicity of our force it is tough to identify the aircraft on the ramp at Danang let alone over the Gulf of Tonkin.

The importance of giving careful thought and study to your own capabilities versus enemy capabilities is obvious since there are few MIG-100s or MIG-105s. To supplement this study, friendly encounters with other type aircraft should be planned and encouraged whenever possible.



What is a meaningful ACT mission? Here's the format we use in the 416th Tactical Fighter Squadron to give some excellent training. One element or flight takes off and anchors over a point in the local ACT area. The other half of the force proceeds to the training area via a different route and attacks the anchored flight. To keep crews thinking of missile limits, on the first pass the attacking flight calls missile away at the point he would launch and then closes for a simulated gun attack. This profile promotes looking, good formation, working for sur-

prises and armament knowledge. And most important, it integrates missile and gun tactics.

It is interesting to note that our first claimed hit on a MIG in South-east Asia came from a 20mm cannon. Air-to-air missiles expand the tactical fighters' lethal envelope but guns are still a necessary part of this envelope. The proper utilization of these weapons demands a high degree of proficiency in air combat maneuvering techniques. Are you confident of your proficiency?

To summarize: If you are in the average tactical fighter squadron you may have an obsolete MIG shooting at you next week. You should be able to identify him, evaluate the situation, and immediately implement the right decision to move into a firing posi-

tion for either missiles or guns. You will not be able to do this if you limit your air tactics training to six 30 minute periods every six months that just fill your squares. Aggressiveness is necessary but not enough. This type of proficiency is built on regular study and review and requires intensive, well planned training in the air. Make your next ACT mission the most meaningful one you have ever flown by incorporating as much realism as possible. Construct problems which will make you LOOK, IDENTIFY and ATTAC





EVERY ONCE IN A WHILE someone steps in the honey bucket while trying to get on top of the old soap box to deliver a safety sermon. Your old dad is included. They usually get trapped by technique. For example, well known test pilots often advise to turn a bird loose and let it recover itself when a feller gets too rattled to unscramble a gyration. This is good advice and works well for pilots who use average trim technique, you know, trim for climb, cruise, descent and final pattern configuration, but not thru maneuvers. I know I don't trim thru maneuvers unless the stick forces get terribly high, then I trim out PART of the force. I like to know just how much pressure I'm holding so I can judge things. Using this technique, when I turn loose, the bird will seek a normal cruise condition.

Ray Krasovich hit on a very pertinent point in his Rocky Road article in the May ATTACK. He told how an F-4 pilot could trim himself into a spot where it should take extra effort to apply proper corrective control. Looks like Ray put a lid on one of the buckets some of us have been stepping in. Checking around, I find quite a few pilots trim out most control pressure. If you are of this breed, and particularly if you are trimming yourself thru most maneuvers, be ad-

TAT

vised that you'll need to use forward pressure - and trim - to correct flight conditions the rest of us can solve by just relaxing.

I UNDERSTAND that MAC is getting an F-4C set up for spin testing . . . it will be some months before the program is completed . . . meanwhile, Commander Joe Mills and other Navy F-4 experts have been taking a good look at the spin situation. Of interest to all fighter types, they questioned the time honored technique for recovering from a nose high, slow airspeed situation . . . that "roll to the nearest horizon" is pro-spin and non-good. This also goes for rolling inverted. Present thinking is to keep rudder and aileron neutral while holding between 5 and 10 units angle of attack.

One wing must be stalled for a bird to spin and any given wing stalls at the same angle of attack regardless of airspeed. Keep the angle of attack less than the angle where the wing stalls and don't aggravate things by yawing the critter with aileron or rudder and you can't help but recover, altitude permitting.

Unfortunately we haven't had smarts enough to equip very many of our birds with angle of attack indicators so a lot of us will have to fumble thru without one. Holding zero G thruout the recovery should keep us within a safe, tho uncomfortable ball park. I might add that prolonged zero G usually brings on a few warning lights and cockpit smoke, but is far less to sweat than a fully developed spin or post stall gyration. Oh yeah, be patient on one of these . . . DON'T RUSH THE RECOVERY.

SHORTLY AFTER COMING off target, an F-105 pilot found he couldn't pull the throttle back below 98 per cent. He broke out of the dive bomb pattern, gave his leader a call, and headed for home.

Enroute, he called the tower and advised them of his emergency. About six minutes later he was almost over the overrun, mobile was warning him not to shut the engine down too early while lead was worrying about his excess speed. Lead reminded him that he had 260 knots and warned him not to rush the drag chute.



The landing was not a complete success. The pilot tried to hold the bird level while speed dissipated, but let the nose gear touch. The bird bounced. Four bounces later it was skidding along minus its nose gear. It sneaked under both barriers, engaging the MA-1A with its vertical stabilizer and the BAK-9 with its wing tips and leading edge flaps.

Altho a design deficiency caused the throttle to bind, the board assessed this one to the pilot because he was unable to recover from a pilot induced porpoise on landing. They also nicked the flight leader, an IP, because he failed to supervise the handling of this emergency . . . and explained that both he and the pilot failed to consider and use all available facilities, agencies, and options.

They were concerned because the pilot came back home and landed ASAP when the bird was fat with fuel. (He had 5000 pounds when he landed and could have gone over to Edwards.)

They observed that he did not elect to try additional patterns to see if he could achieve a slower final approach speed even after speed reached 260 knots . . . that he didn't give the command post time to get into the act . . . that he failed to hold the bird off and was unable to recover from the porpoise and that he did not deploy the drag chute after speed slowed within limits.

Leave us play the flip-side to this record. The pilot landed heavy because he reasoned the extra weight would help hold speed down . . . the IP thinking the same way.

The IP kept radio silence because the pilot was exceptionally well qualified and had more experience with the bird than the IP. Also, the IP was rather disgusted with some of the "helpful" suggestions that were coming in over the airways - like asking the pilot to try the emergency fuel system - and did not wish to add to the confusion. I am inclined to side with him on this point.

The pilot didn't make an additional approach because the first one looked pretty good. He had managed to get his speed down to 230 knots on his base leg. It was a tight base leg and quite frankly he didn't think he could improve on it. He didn't pull the drag chute because he got a little busy and forgot it.

Before I turn this one over to the rest of you armchair experts, I'd like to add some carefully hindsighted comments. Altho I agree that it is easier to keep speed under control with a heavy bird, I am forced to side with the board on this point. The extra two tons can turn a firm landing into a metal bender . . . also 'tis just two more tons to halt. Other pilots have managed to keep speed from building up by S'ing down final, I would prefer using this technique making a heavy landing.

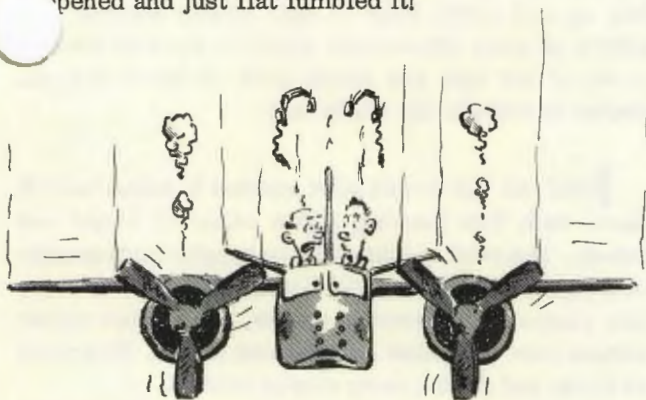
I also side with the board on taking the problem to Edwards. Having all that airport to roll on would eliminate the temptation to spike the bird and get started on the stopping. (A temptation to which this lad may have unconsciously yielded . . . at least this is the usual cause for a landing porpoise.)

I defend the pilot on the drag chute . . . he'd certainly have had both hands full - too full - during the porpoise and would have needed super human poise to remember the chute after the gyrations ceased. Speaking of porpoise . . . most are pilot induced. A nose-low touchdown triggers off a bounce. The pilot tries to correct the bounce, gets out of phase and ends up aggravating it. I know of only one cure . . . get the stick back a little aft of neutral and lock it there.

Better you should resist the temptation to spike a bird under such conditions. Another pilot had a similar emergency in an F-105 and shut down as he crossed the approach end of the runway at 290 knots. He held the bird off, reasoning that he could always drop the hook and ride it out in the BAK-9. He touched down at the 6000 foot point and got stopped in the remaining 4000 feet using the drag chute and emerger braking. He landed light.

I agree with the board that the troop in our accident should have given the command post time to get the act, if for no other reason than there was no big rush to get on the ground and that someone just might come up with a positive suggestion. Along this vein, too many people on the ground key the mike before they give full thought to what they say. Ordinarily, it is more helpful to give information rather than advice. "...Two, at full military the engine will flame out almost immediately after you turn off the fuel." This is information the pilot can use to make a decision, and he is in the best position to make that decision. Ground agencies can only guess at his speed and distance from the runway...he knows what it is. If the pilot is green or a little clanked, then an older head flying chase can help make such decisions. He is in the second best spot. Mobile comes third.

One final point. The throttle quadrant malfunction was predicted following another accident. The board found the cause of the accident - which was from another malfunction - but also found that if a screw in the quadrant was out of adjustment and someone tightened it, that this could jam the throttle. The AMA agreed but took no action. In effect, someone had a perfect opportunity to stop an accident before it happened and just flat fumbled it!



THE B-26 TROOPS recently reported some fuel system problems...such as both engines quitting momentarily when one crew turned off the fuel boost pumps coming off the gunnery range at night. Altho I have no cure for the specific problem, I do have a bit of advice that dates back to when this tiger was flying B-17s. The B-17 had the fuel boost pump switches located on the center pedestal to the right of the throttle just forward of the mixture and supercharge controls. You had to reach over these controls to get at them. About two inches forward of the boost pump switches were four similar switches...fuel shut off switches. We had a low altitude gunnery

range designed to give our gunners some impractical experience. We'd fly down this range at 50 to 100 feet while they blazed away at ground targets and any cows unfortunate enough to stray onto the range. The B-17 flight manual called for fuel boost pumps to be on while flying below 1000 feet and it was only a matter of time before a co-pilot or two didn't remember to turn them on until after they were on the deck. It was also only a matter of time before one such co-pilot got his meat hooks on the fuel shut off switches.

The B-17, despite all propaganda to the contrary, was a far from perfect bird. If you pulled power to idle without retrimming, it took 50 to 60 pounds of back pressure to hold the nose up. The crash was spectacular; only the tail gunner survived. The tail section broke off on impact and flew forward, making a rather gentle landing on beyond the main wreckage.

The CO, an old-timer for that era, called a pilots' meeting and gave us this one bit of advice: Except for throttles, don't ever move all switches or all controls at the same time. Instead, move one, pause to see what effect it has, then move the next. Sound advice that applies to all multi engine birds, fan or jet.

THE REPORT WAS BRIEF and to the point. It said the left main gear failed to retract after takeoff and that all attempts to lower it were unsuccessful. The crew landed on the right main and nose wheel, then retracted the right main after touchdown in order to maintain directional control. Damage was slight.

Good show in any aircraft...but this bird was a C-119 which has a fuselage little stronger than an egg shell. The crew checked in right after the trouble developed and circled the field while the unit called all the experts to see if they had any recommendations. Among others, they called SEG who advised them to follow the dash one explicitly because it gave the best available instructions.

They did and it did. I'm looking forward to reading full details on the aircrew achievement, or pilot of distinction nominations when it arrives.

"TAT, THIS YOUNG lad brought his F-84 smartly around the pattern and put down the alighting gear..."

"That's good."

"No, 'cause the hydraulic pressure went to zero."

"That's bad."

"However, the young man checked the pressure as he turned final..."

"That's good."

"But he let his bird fly into the trees while he was looking at the gage."

"Oh! That's bad."

"Then he managed to stagger clear."

"That's good."

"But he let his airspeed get too low and hit the runway hard."

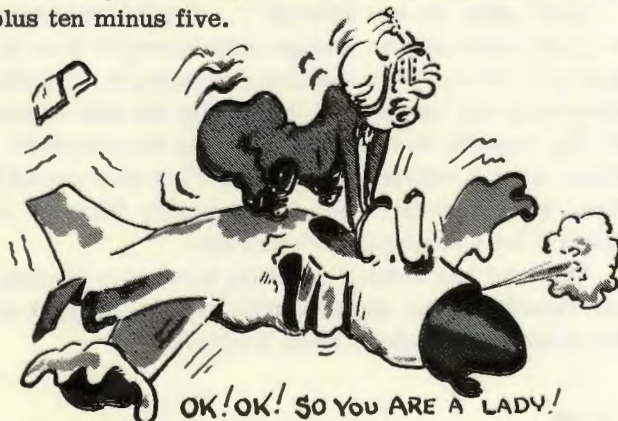
"That's bad."

"No, he lucked out, The hard landing bent up the drag chute compartment and the trees broke his landing taxi lights, ruined one navigation light and did a little skin damage."

"In other words, it was good that this bad show ended happily. If nothing else, it should remind us that it ain't safe to relax or let our attention stray when we're flying airplanes."

"Yes sir, good lesson, bad grammar."

AN OVERSEAS F-4C pilot came within an oscillation of making a goodbye flyby. He was cleared for a high speed pass across the home drome, and chose to make it down the runway at 500 feet and .9 mach. Approaching the field the bird started a series of extreme nose-up, nose-down oscillations while rolling briskly back and forth about 30 degrees. The aft canopy came off and hit about 3000 feet down the runway. About 6000 feet down, the aircraft entered an extreme nose-high attitude and rapidly disappeared into a broken cloud deck. Among other things, the nose gear doors, both main gear and both outer wing panels were damaged. The G-meter read plus ten minus five.



Reckon the experts call that a "pilot induced oscillation"...me, I call it a JC maneuver. When you have a lot of speed on the deck, a bump or going burner can start you off on one of these... particularly when the pitch damper is inoperative. A not so young fool once made a napalm run at .9 mach - of all speeds. In fact, by closing my eyes, I can still


see those individual blades of grass. Take it from me, you can't hope to fight the oscillation, you'll excite it. Once one starts, put in a bit of back s. and hold it. Best course, however, is to stay out of JC producing situations.

THE DASH ONE is rather polite, it doesn't say you CAN'T try an airstart at FL 350, it just says restarts are unlikely above, say, 290. Yet, I'm continually amazed at the number of troops who start making airstart attempts as soon as the fire goes out, regardless of altitude. Some of these attempts are rather warmish, almost all are unsuccessful, and except to keep from inconveniencing ATC, I can't see why the rush.

Holding off until you've glided to a better altitude conserves battery power and gives you time to settle down, check things over and haul out the check list. The delay costs nothing even if you are on an extended flight that pinches fuel and conditions dictate that you'll have to press on after getting your relight. Don't take my word for it, haul out the charts and figure the fuel data yourself. You can go from point A to point B at best cruise altitude, flameout halfway, use flameout glide speed and descend to 20,000 feet, fire up and climb back to best cruise altitude arrive at your destination within a hundred pou. or so of the fuel you would have on board had you stayed at altitude the whole trip.

JUST AS AN F-104 pilot started to raise takeoff flaps, both fire warning lights came on bright and steady. The pilot quickly checked engine instruments in the green and asked his wingman to look him over. His wingman reported no smoke, as the pilot pulled around onto downwind and reduced power. He wasted no time, and landed from closed traffic.

Us armchair experts can't add a thing to this one. The troop played everything precisely right. He didn't over react to the warning lights, but sought confirmation, yet didn't piddle around just because he failed to get this confirmation. Instead, he brought the bird back so the experts could trouble shoot it at their leisure. This trouble shooting, incidentally, located a broken intermediate bellows in the BLC duct which allowed hot 17th stage air to squirt into the engine bay. In short, the lights were for real and the problem would have gotten quite serious had he kept it airborne too long. A tip of TAT's old hard hat to Captain Ronald B. Soltis of the 479th Wing George. A cool bit of flying, Ron.



Refueling

Hooking two airplanes together with a refueling boom is one of the toughest phases of present-day fighter flying. It takes a whole lot of understanding on the part of all concerned. Strict radio discipline and thorough systems knowledge are the keys to success in refueling as in any other area of flying, but when we physically hook two dissimilar aircraft together, it isn't enough for each pilot to know his own particular airplane and its refueling system. He must understand, at least basically, the systems on the other end of the boom.

Recently a flight of F-4Cs was refueling on a KC-135. After the flight leader positioned his birds on the right wing he received clearance and moved in to take fuel. After hook-up, he started discussing the tanker's receiver director lights with the tanker crew. He was a rather verbose fellow, and his transmissions became longer and longer. As he

talked, his aircraft began to move rapidly toward an inner and lower boom limit. Because the UHF was blocked by the receiver pilot, the boom operator was unable to transmit corrections to him. As the fighter continued to come in, the boomer went on interphone and called a breakaway to the tanker pilot. Before the breakaway was made, however, the F-4 exceeded inner limit, bending the boom nozzle fairing and breaking the nozzle light and signal coil.

Had this pilot been less concerned with his observations about the director lights, he probably would have seen that he was moving in too close. The incident report didn't say what the lights were doing, whether they were malfunctioning or not...were they telling him to move back?

An F-84F had completed refueling and attempted a disconnect, but was still hanging on the boom. The boom operator keyed his microphone and commented that

he had tried both normal and manual disconnects. Then without unkeying his mike, he suddenly called for a breakaway! The fighter pilot never had a chance to try his override system, or discuss the situation. As the boom lunged forward, it ripped the entire refueling receptacle out of the fighter's wing.

Had the boom operator been familiar with the two refueling systems, he would have known that there are other courses of action to take before a breakaway. By placing the tanker system in manual and leaving the fighter system in normal, the tanker can trigger the normal disconnect signal in both airplanes. If this fails, the receiver can go to manual, or override. This places both aircraft systems in manual. Now the receiver must initiate all disconnects. If none of the automatic disconnects (normal, manual, override) will do the job, a "brute force" disconnect can be

used. While this may sound like a breakaway, it seldom does as much damage. The receiver backs out to max boom extension gently, then chops power to idle and extends speed brakes...it usually works with no damage to either aircraft.

In this case, with the receiver holding steady, there was no immediate requirement to shake the fighter off the end of the boom. By not giving the receiver a chance to discuss the problem...hardly giving him time to evaluate it...the boomer caused serious damage to the fighter which might have been averted.

Practically every report of refueling problems contains some degree of misunderstanding or lack of understanding between the tanker and receiver crews. Much of this used to come from the fact that the two crews seldom, if ever saw each other on the ground. The new joint SAC-TAC program of weekly KC-135 visits to fighter bases is working wonders, here. In addition to briefings, discus-

ing missions while some of the fighter types got a chance to observe from the tanker boom pod.

Participation in this kind of cross training might have helped the fighter pilot who, not long ago, complained that the boom operator was erratic. When the tanker crew returned to home base and checked their systems, they found that the receiver director lights under their aircraft were not working properly...the lights were not following boom movement. Now, what was erratic, the boomer or the lights?

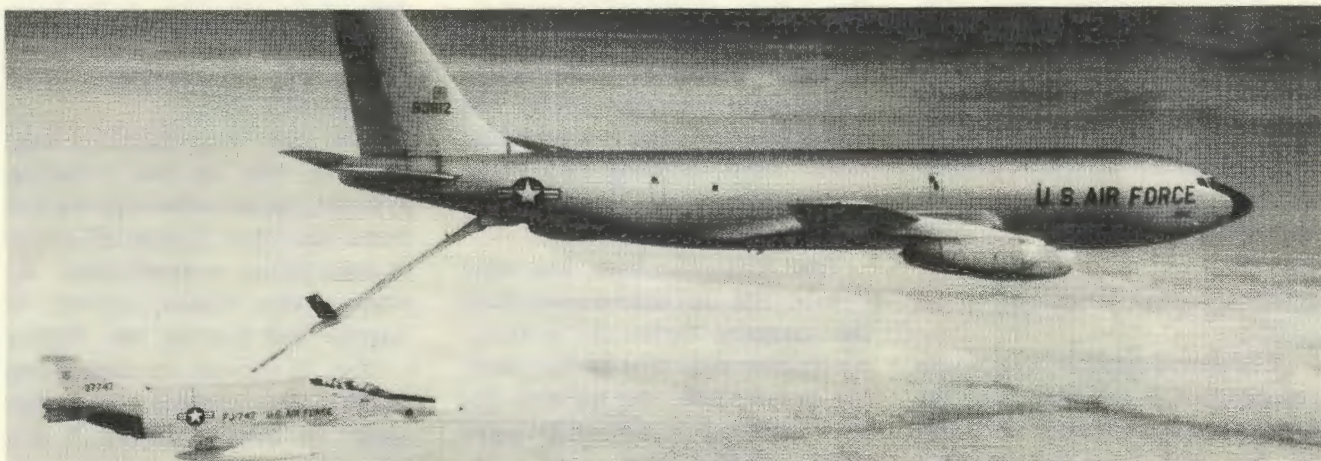
Every pilot should have the new air refueling manual, TO 1-1C-1, by now. Normally, most of you will start by studying the appendix for your own airplane, because it supplements the Dash One. Next in importance is the appendix for the tanker with procedures for refueling both bombers and fighters. Here is where understanding must start. By reviewing the entire chapter on fighters...all the way from take-off and cell tactics to the actual

manual to slight. "I've read the procedures for my airplane, should I read this part with pictures of B-52's?"

Admittedly, the layout and titles are confusing. Chapter One, General Air Refueling Procedures, is followed by Fighter Air Refueling Procedures in Chapter Two. A fast riffle through chapter one reveals several illustrations of bombers on the end of refueling booms and no fighters...why not skip it and go on to the important part? Slow down and read thru the general procedures and you'll find goodies that are mentioned nowhere else...boom limits, for instance, and terminology. You'll find descriptions of the boom markings and the receiver director light profile.

One gem of information, buried in Chapter One, might have saved the confusion which led to a damaged F-4C refueling receptacle and an incident report.

The fighter was in position on a KC-135 with a confirmed con-



sions, and demonstrations, fighter pilots and boom operators are getting a chance to look down (or up) the boom from the other end. During one tanker visit to an F-4C unit, the two boomers rode the back seat of Phantoms on refuel-

air refueling checklists for tanker crewmembers, you will gain a basic understanding of the other guy's job, his problems and procedures, and how they affect you.

The basic document itself is the easiest part of the refueling

tact, when the boomer said he did not have a ready light. Immediately after the transmission, the Phantom crew felt several tugs on their aircraft and found themselves moving rapidly forward. Both F4 engines were retarded,

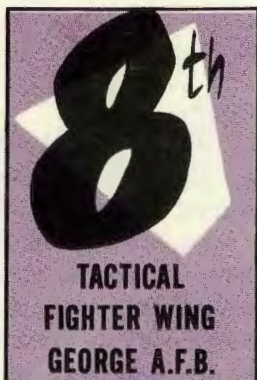
but they continued to be pulled in and under the tanker until a forced disconnect occurred. Damage to the fighter receptacle and IFR door required replacement of several parts. The boom operator apparently started retracting his boom after calling that he had no ready light, assuming that the fighter pilot would initiate a disconnect. The general section of the basic manual says, in a paragraph describing the contact phase, that a disconnect will be initiated if

either tanker or receiver does not indicate ready. We don't know if the boomer attempted to disconnect, can only assume that he did, but his sense of urgency in retracting the boom didn't help the situation.

Each of these incidents was precipitated by a lack of understanding or consideration for the other end of the refueling operation...the other end of the boom. Two of them were aggravated by premature, and needlessly abrupt, attempts to separate the receiver

from the boom.

Air refueling is essentially formation flying, and rapid or abrupt movements are dangerous. It demands smooth, steady control by the three major participants. It demands the thorough knowledge that makes correct procedures instinctive...the kind of knowledge that makes coping with unusual situations an automatic reaction. Planned, purposeful reaction... instead of the abrupt near-panic that too often bends the hardware.



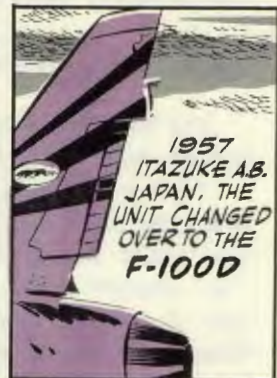
THE WING'S HISTORY DATES BACK TO APRIL 1, 1931, WHEN IT WAS ACTIVATED AS THE 8TH PURSUIT GROUP AT LANGLEY FIELD, VA.



UNDER THE 5TH A.F., THE GROUP FOUGHT ITS WAY UP FROM AUSTRALIA TO JAPAN, - RECEIVING CREDIT FOR NINE CAMPAIGNS, AND WAS AWARDED TWO DISTINGUISHED UNIT CITATIONS.

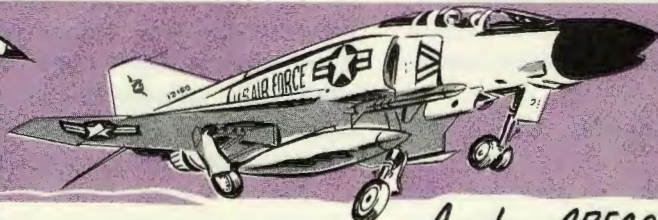


JUNE, 1950. AGAIN IT WAS ONE OF THE FIRST TO ENTER COMBAT IN THE KOREAN CONFLICT - IN THREE YEARS THE UNIT FLEW OVER 60,000 SORTIES, PARTICIPATED IN 10 CAMPAIGNS AND RECEIVED 3 UNIT CITATIONS.



... AND F-105'S IN 1963

THE 8TH TACTICAL FIGHTER WING RETURNED FROM THE FAR EAST IN JULY 1964, AND WILL BE FULFILLING NATIONAL AND INTERNATIONAL COMMITMENTS WITH TAC'S NEW F-4C "PHANTOM II".



THE PRESENT COMMANDER IS Col. JOHN GREGORY, Jr.



TAC TIPS

SAFETY THRU EXAMPLE

Fly Safely!

Be professional!!

Be careful!!!

The first is inane.

The second is insufficient.

The third is insufferable.

The soft, impotent, "be careful" attitude characterizes much of our human error prevention efforts.

Telling the vain, self-centered razza-matazz, twang-the-wire-and-kick-the-tire-type (that's ME!), who would dearly love to be thought of as hot, to "be careful" isn't going to get you any marbles. But if we had the wisdom to talk to him about values and the ill effect of vanity and false pride, we might at least get into the game. Maybe we'd succeed in touching the tender nerve of conscience that all of us have. But here's the rub. Before we can ever hope to speak with wisdom we must first fight the razza-matazz battle within ourselves. To the degree that we're willing to make the effort there will be progress in the push to reduce human error.

The alternative is to continue to preach "be careful."

The lectures you deliver may be wise and true but I'd rather get my lesson by observing what you do.

— LCDR Jim Dennis, USN

NEW BOAT

New lightweight fabrics have been introduced into a one man life raft currently being evaluated by the Air Force and Navy. The new raft packs to the same size, but has a double layer inflatable canopy big enough to accommodate a pilot wearing a pressure suit. The survivor has to blow the canopy up orally, but is rewarded for his effort with insulation provided by the trapped air. The new raft is seven inches longer and seven inches wider than present rafts, and has a lower floor to give it better stability. It is also equipped with an inflatable seat.

CONDITIONAL CLEARANCE

Tower cleared the U-3 for "immediate" takeoff, the crew hustled out to the centerline and pressed on about their business of getting into the blue before the big many-motor on final could overrun them. Just as the little bird's nose wheel broke ground, Tower told them to "hold your position," and the startled canoers saw a firechief's pickup dash across the runway, red light flashing. Happily, there was enough room on the runway for both of them and the collision didn't occur. Seems the Tower operators on this busy little flying field can claim all the roses for this one. The Data Controller (whoever he may be) asked the Local Controller if the pickup might cross after the departing aircraft. The Ground Controller heard "Cleared to cross" . . . he had missed the bit about after the departing aircraft . . . and cleared the Fire Chief.

The U-3 pilot found it extremely difficult to "hold" at that particular point in his flight, pressed on and submitted the OHR later.

HOOT PHOOT

The left inboard pylon jettisoned from an F-4C some time after takeoff while the pilot was too busy joining on the lead ship to notice anything amiss. About a half hour later the F-4C pilot set switches to fire a Sparrow, but couldn't get a missile ready indication. Checking the office, he noticed utility pressure was erratic and that pneumatic pressure was zero. Several circuit breakers were popped and refused to reset, so he declared an emergency and headed for home. Enroute, utility pressure dropped to 500 psi. He lowered the gear using the normal system which brought utility pressure to zero.

Flaps wouldn't budge normally since the flap circuit breaker was popped. So the pilot used the emergency flap extension system. The flaps did not extend. Actually, one may have extended part way, then retracted. The no flap landing was successful and the pilot used emergency brakes to bring the aircraft to a halt.

The BLC duct failed just ahead of the left leading edge BLC valve. This let hot BLC air squirt into the wing, doing major metal damage and shorting electrical circuits. The failure gave no cockpit indications, other than the series of malfunctions that accompanied it.



FOR THE BIRDS

Several months back USAF required that all bird strikes be reported as aircraft incidents. Since then, a great deal of data on the bird hazard has been recorded and (hopefully) the big thinkers have been thinking up solutions to this particularly knotty problem.

As a sidelight, an occasional bashed bird report reveals some of the frustration beneath the surface. Witness the report that went: "While flying in a small cloud at 2100 feet, the aircraft was struck by a pelican." It went on to describe the four-foot long gash in the wing and the broken radio antenna. What caused the incident? "Pelicans flying in small clouds." Corrective action? "None."

Think faster, thinkers!

TAC ATTACK

RECOGNITION

Safety officers have traditionally spent a great deal of their time and effort in getting and holding the confidence, trust, and respect of the troops in their unit. This is the first step to insuring the easy communication we feel is essential to identify problems before they become accidents. One of our sterling FSOs recently came close to losing the whole shooting match . . . here's how it went.

An aircrew in his unit tangled with a series of unusually severe problems in flight, calmly and professionally surmounted them, and safely landed their bird. The crew was nominated, and later selected, for the TAC Aircrew Achievement Award. In the process of routine coordination on the award, it developed that their experience was never reported by the unit as an aircraft incident, although it qualified as such under two separate paragraphs of the directive AFR.

The initial reaction to this was to kill the award . . . but cooler heads prevailed, reasoning that the crew involved certainly deserved recognition for their display of calm, disciplined airmanship. It was the unit, or more specifically the unit safety office, that should be slapped about the head and shoulders. The severity of the problem, of course, is evident when the front office asks how many other incidents or accidents in this unit went unreported. . .

CARBURETOR ICE

Carburetor ice can be a serious problem in humid areas almost the year around. Recently a pilot from another command found his A-1 back-firing with a high cylinder head temperature. He selected alternate air and the carburetor temp rose from five to 32 degrees. It dropped back to five degrees when he selected direct air. The pilot headed for the nearest airfield and declared a precautionary emergency. (It wouldn't have cost him one cent more to have just declared an emergency.)

The tower cleared him number two behind another aircraft on a three mile final. While turning a wide base, the engine quit. He decided he couldn't make the airdrome and turned toward a small field. He hit some trees while trying for this field. Fortunately, the engine started running again at about this point and he limped in to the airfield. Investigators criticized him for leaving the engine on direct air when carburetor temperature was near freezing and for not declaring an emergency to gain priority over the other traffic altho the engine no longer seemed to be giving difficulty at the time he entered traffic.



A converted hangar stores the thousands of bits and pieces used daily to keep a base running.

Who's minding the STORE ?

- a fighter pilot looks at the machinery that keeps his base alive.

I had to look up the building number and get a base map to find his office, but finally found it and arrived at 0930 on the dot. Imagine, all this time on base with no idea where the Base Supply Officer hangs his hat! When shown into his office, I admitted with chagrin to almost being late for our appointment and he pressed his advantage, asking if I had ever seen the workings of a Base Supply before. I had to answer no, and he shook his head, his glance pausing long enough to register the three clusters on my Longevity Ribbon.

"It's a rare pleasure to come across a fighter pilot, who wants to see what makes supply tick," he went on, "so I've lined up a tour that should give you a pretty good idea of our operation. You won't find the tired old sergeant in a dimly-lit room passing out any size flying jacket as long as it's

extra-large. His days are long gone. What I want you to see is the complex of machines and people that provide the materials to keep this base active."

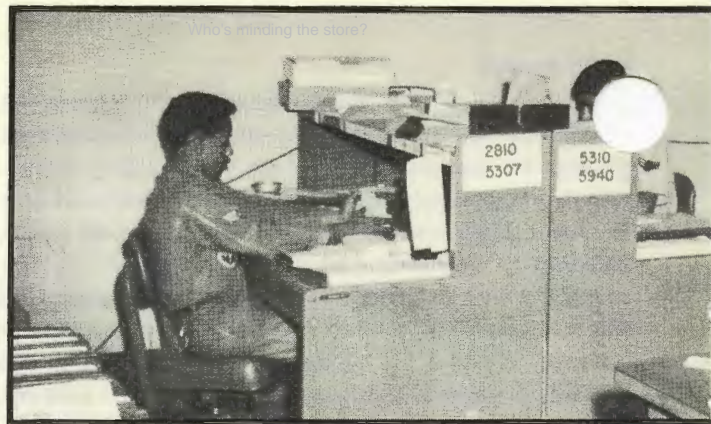
I had some idea of the complexity of supplying a base, but when he started reeling off figures, it staggered my imagination.

"Think of a city of 15,000, we're the only wholesaler in town. We provide every piece of material . . . from aircraft engines and bulldozers to lawn seed and paper napkins. It's a 150 million dollar a year business, handling fifty to sixty thousand different items thru 80 retail outlets . . . supply accounts."

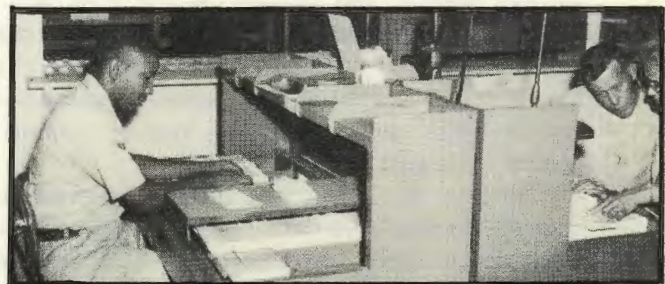
"But you're probably the most interested in aircraft parts supply and the expedite delivery system. On this base, we're supporting 18 different types of aircraft. We used to have a supply outlet in

each operating unit . . . called Tech Supply . . . this is where you'd find the replacement parts most often needed for routine maintenance and repair. Things like tires, tubing, pumps, and switch assemblies . . . anything bigger than the nuts, bolts, tubes and resistors that each shop keeps as bench stock. In those days we had to operate from branch outlets close to the work area to reduce delay. But in recent years, we've managed to streamline and automate our accounting. Now we centralize the aircraft parts right with the central supply inventory. By using a computer, we can receive a telephone order for a part, check the catalog for a stock number, locate the part in the warehouse, dispatch a driver to pick it up, and deliver it to the customer.. all in less than 20 minutes."

I could see that he was warm-



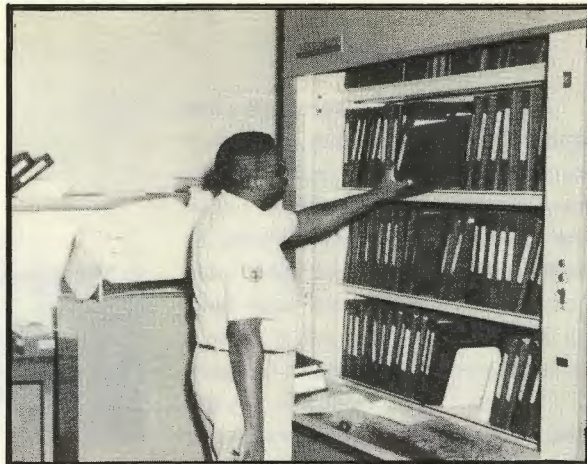
Orders are translated onto punch cards, tabulated by item class.



With one card for every item in the warehouse, the locator file gives the exact spot where a part is stored.



ss codes.



The Lekrafile makes hundreds of tech orders and catalogs available at the push of a button.

ing up, "The computer doesn't stop there, tho," he smiled. "It has a memory of the stock level of each item we carry. As each item is issued, it is subtracted and when a re-order level is reached, the computer spits out a card telling us to order some more. It actually prints out the order addressed to the correct depot."

"That's tremendous . . ." I started, but he was still going.

"Not only does it monitor our stock on hand, it monitors the consumption rate and automatically adjusts our levels as demand goes up or down. If we start to use more of a particular item, the computer adjusts to the increased rate and reorders to maintain a higher reserve level. If use, or turnover declines, it allows our stock level to decrease, reordering when we have fewer on hand."

"You can practically do away

with people here with a machine like that," I said.

"No . . . not exactly," he stopped me. "Even with this sophisticated system, we get orders for items we don't have on hand. When this happens the computer is stumped and people come into the act. If it's a routine order, we send to the depot for it, using a transceiver system that works something like a teletype. But if an airplane is grounded for this part, we get on the telephone. If the depot is out of this particular item . . . and this happens . . . we start calling other bases. When we locate it, we negotiate for immediate transportation. The whole idea being to unground the bird as soon as possible."

"Well, it looks like something's wrong if you can't find the part at the depot," I offered.

"Aren't they supposed to have

acres and acres of warehouses filled and overflowing with the goodies we need?"

"You're back to the sarge and his bins full of extra-large jackets again," the Colonel grinned. "Because we have rapid communications between bases and the ultra-fast computer to search our stock list, we don't need acres and acres of parts. Take an item like the prop synchronizer for a C-130, instead of carrying a large backlog of them at every C-130 base, the whole Air Force can order spares in small quantities . . . say 50 or 60."

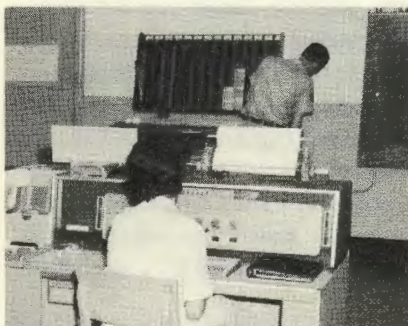
I frowned at this, but he pressed on. "Now the depot acts as a clearing house . . . keeping track of the spares, but not necessarily keeping them. They'll send three or four out to each base and then keep track of them. Say we receive four and use one . . . we immediately notify the depot, they reduce their balance of usable spares. They also insure that the parts we remove from airplanes get into the right channels for repair. The computer at the depot must always come up with the same balance . . . so many available for use plus so many being repaired or re-built. When this balance drops thru normal attrition . . . the ones that are broken too badly to repair . . . it will order more from the manufacturer."

I must have looked impressed. He slowed his pace for me. "You'd practically have to be a graduate public accountant to understand the entire buying and selling operation . . . I'm not sure I do myself. And without going into detail, let me acknowledge the part that the purchasing people play. About ten per cent of the orders we fill are purchased direct from manufacturers or dealers in this area. It doesn't all come thru the depot.



Automatic machinery sorts the cards before they are inserted into the computer.

Suffice to say that with these computers we're now able to handle a tremendous volume of business, rapidly and accurately . . . and actually reduce our buying while we increase service to the customer."



The RAMAC 305 computer types out answers seconds after it is asked questions by punch card.

He went on to describe the RAMAC 305 computer which literally is the center of his operation. The machine itself fills a large, almost sterile-looking room in the middle of the building, its clicking typewriter and winking lights commanding the full attention of the trim young ladies attending it. As we watched, they assembled punch cards that were passed thru windows from adjoining rooms. Some came from the call-in section where incoming orders are received. When the correct stock number came with the order, it only required quick verification before the order was given to the machine. Others required more detailed checking and went to the research room where the order was checked for correctness. Was the stock number taken from the latest revision to the stock list? Was it a component that could be ordered alone, or must we order the entire assembly? Each order was translated from a handwritten telephone call-in form to a punch card, verified and coded before it came to the computer.

Short seconds after each card was fed to the machine, the reply came out the other end: Yes, we have the part; or no, we don't have the exact part, but stock number such-and-so is a suitable substitute; or, the one we want isn't on hand, but we can get it from a larger assembly which is on hand.

We went thru a door to the file maintenance section where five or six people stay busy keeping the computer up to date. "This is a vitally important part of the computer operation," the Colonel explained. "We must keep current information in the computer, or we're spinning our wheels. Frequent changes to the Federal Stock List, new items, new requirements, or changes in stock categories must be promptly inserted if we are to get useful information from it. If we have garbage in the machine, we get garbage out."

From there we went out to the shipping and receiving section. "You know where the storage warehouses are," he said as I gazed about the busy room. "We'll walk thru them later."

"This looks more like what I expected to see," I turned to him. "Boxes and crates and fork lifts."

"Yes, it's easy to forget all this in the computer environment inside," the Colonel smiled, "but this is the end result. Here we receive most of the stock we handle. It comes in on our left, here . . . it's checked against the bill of lading and some is unpacked. The direct order items are sent to the customer. Others go to the warehouse to replenish our stock level."

As we stepped out into the bright sunshine, the Colonel pointed to the four pick-up trucks parked near the door. "These are the guys who make possible our 20 minute service on priority items. We call it our Expedite Delivery.



Twenty minutes after a part is ordered, Expedite Delivery hands it over.

When we get a call for an aircraft part, the computer tells us if we have it and the locator tells us where it is. One of these drivers gets a slip of paper telling him to pick up the part at a certain warehouse, by row and bin number, and where to deliver it. When he gets the part, he zips right over to the airplane and mechanic who need it."

"Sounds awful smooth and effortless," I mused.

"Not always," he shook his head. "If we get ahead of the computer, it may send us after an item that's not there anymore. This sometimes occurs when we receive a shipment of an item and issue some before the computer knows they're here. When the computer gets the incoming stock information, it is incorrect. But the computer doesn't know it, so it issues against the total it thinks is on hand. We have several checks and safeguards to protect ourselves from this sort of thing . . . it doesn't happen very often."

We walked into the big hangar-like warehouse in silence. It was an impressive sight. Row after row of circular bins on the ground level, holding literally thousands of small items. A steel-grating mezzanine doubled the storage space. "How in the world can you ever find a particular size bolt or

nut in here?" I wondered aloud. "It's all a matter of organized planning and meticulous record keeping," the colonel came back. "Without the voluminous files and cross references we have in the office, we wouldn't know what we have or how to find it... in short, we wouldn't be able to do our job of providing the material that keeps this base going."

"Pretty much the central cog for the whole machinery of a base, isn't it?"

"I like the clock analogy... you know, take out any one of the

wheels, big ones or small ones, and the thing quits running."

"Well, we can't do it all by ourselves. We need support from every customer we serve." He paused as we came out into the sunlight again, indicating the entire base with a sweep of his arm. "We do our utmost to fill the orders that come to us... but we don't control the ordering. That's the responsibility of the customers. They can help us by using realistic time values to establish priorities and anticipating needs whenever possible to avoid last-

minute panic ordering. I guess my pet peeve is what I call block ordering... the guy that orders five wrenches because he's not sure which is the one he wants. When he turns in the other four, it unnecessarily loads down the system. It boils down to the fact that you get more efficient service from supply when you state your known requirements as accurately and timely as possible... then we are better able to handle the unexpected, last minute orders."



GROUND SAFETY

EXPERT OPINION

The Chief of the California Highway Patrol said, "We couldn't take safety belts out of our patrol cars now; the officers simply would not let us." This statement pretty well sums up the professional driver's attitude toward safety belts... an attitude developed from first hand experience with accidents.

Have seat belts for your car? Do you use 'em even for a short trip?

FLASH

"Yes, sir, it happened while I was working around the house. I forgot that the wife wanted me to light the charcoal. When I went to the patio, I saw that she had already started it. You see, my barbeque is like a 55 gallon drum split in half, and she had put the charcoal in the lid and the electric fire starter was on."

"No, I didn't pour the gas on it then..."

"Well, if you'll let me continue, sir... I put some briquettes in the other half and poured this gasoline and water solution over it."

"No... I've been using it for years, can't understand how..."

"Well, the whole bottle burst into flame, and well... I yanked it back and threw it over my shoulder."

"Yes sir, that's when I got the burns on my back."

"Yea... Yes sir, it's kinda hard to talk on the phone while lying on my belly."

"OK, sir... the Doc says I should be back to work in about a week."

SPLASH

"Honest, Major, the doggone boat just headed straight at me and ran me down. I couldn't get away from it!"

"Well, I did reach for it when it came around the second time. I thought maybe I could grab it and get back in... or at least hold onto the side instead of having to dodge it every time it made a circle. I didn't think about the prop. As a matter of fact, I was real surprised when my sweater got tangled in it... these cuts on my arms'll heal in a couple weeks."

"No, I wasn't dressed for swimming, I was going fishing! I fell overboard when the motor caught and the boat took off."

"Yes sir, I was standing up while I pulled the starter."

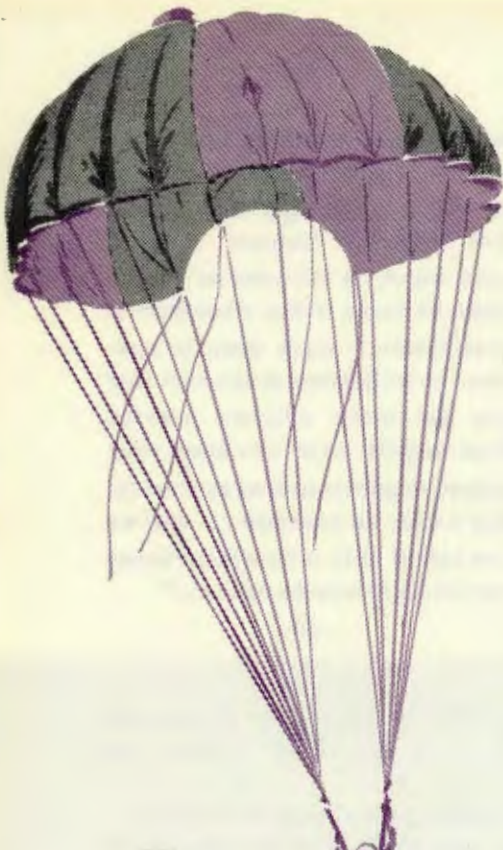
"No sir, I had left it in gear."

"Well... I hadn't thought about that, but starting it with the motor turned probably did have a lot to do with throwing me off balance."

"That's right, sir... and I'll not leave the life jacket lying on the floorboards from now on either. I'll wear it."

"OK, sir... the Doc says I should be back to work in about a week."

Mid-Air Mod



The fighter pilot's parachute is practically uncontrollable compared to the fancy ones used by sky divers and smoke jumpers. The old C-9, albeit trustworthy, loyal, helpful and friendly, does not have a parabolic canopy. Neither does it have the slots or vents that make the pros' chutes maneuverable. Consequently, fighter pilots can not select their landing spot (they seldom even get to select their ejection spot!)

One third of all major injuries experienced during ejection occur upon parachute landing.

A recent T O change, identifying the four rear suspension lines, now gives the bailed-out aircrew the option of modifying his chute in mid-air to give it some maneuverability. The procedure leaves it to the man in the chute to cut four lines to form a lobe or scallop at the rear of the canopy skirt. Air escaping thru this opening gives the descending parachute a forward airspeed of three to five knots. This forward

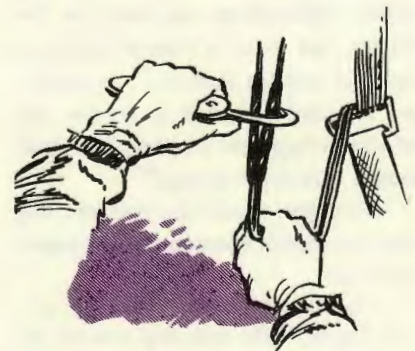
speed is the secret. It significantly reduces oscillations and makes turning and steering easier.

Tests with the mid-air mod showed that overall parachute performance is not compromised. Moreover, considerable improvement in control results. Rate of descent was 2.8 per cent less. All this without affecting canopy strength or opening characteristics because the mod is made after parachute opening.

Now, a word of caution for the novice jumper . . . and the majority of us are. This mid-air modification procedure is not intended to be used close to the ground. Once the lines are cut, it will take a bit of experimentation to get turning and steering under positive control. If you're at very low altitude, stunned, or confused, don't try it! Concentrate your attention on basic preparations for landing.

When you've had an easy ejection and are at sufficient altitude to look around and assess wind and terrain, then go ahead . . .

Unstow the MC-1 knife. (The PE folks here say that notwithstanding all the confusion, nothing prohibits putting the MC-1 on the



riser regardless of the dual releases, J-1 mod, or anything else). If you carry one in your pocket, the string should be long enough to reach up over your head.

Look up and grab the two lines on either side that are wrapped in four inch tape. Pull them down and slice them with the hook blade . . . or any other blade. Then do the same on the other side.

Now you have the lobe behind you and forward speed. To turn the canopy, grasp the riser on the side you want to turn to and pull down. You'll turn at about 30 degrees per second. As you approach the direction you want to face (travel), release the riser.

You're gliding at three to five knots in the direction you're pointed. Play this glide against your drift over the ground, maneuvering for a soft spot. But be sure you're facing INTO the wind by the time you're down to 200 feet. Although it may feel uncomfortable to be drifting backwards, your glide into the wind is reducing your ground speed . . . therefore easing the gymnastics when your feet hit the ground.

Now, roll with a PLF, grab the canopy releases and then sit down to assess your situation.





SEG NEWS

SEG News: Know your Stdn Evaluators

4450th Standardization Evaluation Gp.

Know your Stdn Evaluators



CAPTAIN WILLIAM K. TRACY
F-4C FLIGHT EXAMINER

Captain Tracy graduated from the United States Naval Academy in 1953. He was commissioned in the Air Force and was rated a navigator in 1954. He entered pilot training and received his pilot wings at Bryan AFB, Tex, in 1957. After gunnery training in the F-86 and F-100, he was assigned to an F-100 unit at Clark AB. When he returned to the United States, he served as flight commander in the 614th TFS. Following check-out in the F-4 in 1963, he was assigned to the F-4C Joint Task Force which specialized in aircraft and procedure testing at Edwards AFB. In February 1965, Captain Tracy was assigned to 4450 SEG.

STDN/EVAL FLIGHT EXAMINERS COURSE

Swinging into the last half of calendar year 1965, SEG has scheduled six classes of the Stdn/Eval Flight Examiners course to be conducted at Langley AFB, Va. All stdn/eval flight examiners must attend the course within three months of their assignment and every two years thereafter. The SEFE course schedule for the remainder of 1965 is:

CONVENTIONAL CLASSES

21-23 Sep 65
24-28 Oct 65
29 Nov -2 Dec 65

JET CLASSES

12-14 Oct 65
16-18 Nov 65
7-9 Dec 65

Active duty units should request class spaces directly from TAC (DPCM-T); Reserve units should obtain quotas from CONAC, while ANG units should get their spaces through the National Guard Bureau. Spaces for air advisors will be requested through normal channels.

The Commanders Orientation Course, a special two hour presentation for supervisors and staff personnel, is presented on a request basis as time permits. Paragraph 3-2e., TACM 60-2 lists attendance requirements. Commanders desiring this presentation are encouraged to submit their request at least 30 days in advance to 4450 SEG (SEG-OI).

WHEN THE CHIPS ARE DOWN

Flying troops, like all other troops, tell war stories. At the bar or around squadron operations, just sidle up to any group of aviators and odds are the hangar doors will be open. Sooner than not, you'll hear, "Now during War Two, I....." or, "When I was in Korea, we....." Frequently comparisons will be drawn between peacetime and wartime flight operations. The usual consensus is that peacetime operations are conducted on a "chicken" basis and that in wartime all that "chicken" stuff will disappear. You can get the feeling that many troops would like to set the Air Force back twenty or thirty years and start kicking the tire and lighting the fire. You know how that one goes - the first one to taxi gets the lead and we'll brief on guard.

Now, we flying troops have lots of smarts and do much thinking about this whole business of aviatin', but it seems that we are not all on the same frequency when it comes to several cornerstones of Air Force philosophy. There are still those who feel that flight safety, normal procedures and tactics, and standardization will be pitched out the window in combat or, as they say, "when the chips are down."

I propose we get this discussion off the bar stool and into an open forum. For openers, try these question, answer, discussion thoughts which follow and, if you disagree, cut loose with both barrels. Put your thoughts on a piece of paper, and let's see if we can't thresh this one out right here.

Question: When is an aircraft accident most unacceptable?

Answer: In combat.

Discussion: The goal of a unit in combat must be maximum effectiveness with minimum losses; for in the long haul of sustained combat operations the value of a unit will ultimately hinge upon its ability to strike effectively and survive - to strike, strike, strike, and still survive. Therefore, combat losses must be minimized and aircraft accidents virtually eliminated if a unit is to long remain an effective force. During WW II, a Commander could expend forces and expect replacements because he was watering the grass of combat with a hose attached to the reservoir. Is your aircraft still in production? What is your source for replacement aircrews? You see, that pipeline to the reservoir has been replaced by one sprinkling can - less than full.

Question: What tactics and procedures should be used in combat?

Answer: The best.

Discussion: There is no place for second best of anything in combat - be it leadership, guts, tactics or procedures. Each unit trains with the best procedures and tactics for its mission and weapons system. These tactics and procedures are the best because they are a distillation of more than fifty years of Air Force experience, and they are constantly changing with new experience in order to remain the best. When in combat, the capabilities of the enemy and environmental peculiarities of the theatre of operations may dictate minor adjustments or dramatic and revolutionary changes. But, there will always be one best set of methods to employ any weapons system. Would you be satisfied to enter combat with the tactics and procedures now in use within your unit? Do you have some better procedure or tactic than is published? Don't hoard it! Give all of us the benefit of it via Air Force Form 847. Only the best is good enough - for all of us.

Question: How may a unit achieve combat effectiveness with minimum losses?

Answer: Standardization.

Discussion: Only when aircrews know and use the best tactics and procedures, can maximum effectiveness be achieved with minimum losses. The one assumption here is that the tactics and procedures prescribed are the best. If this assumption is less than true, the guilt rests squarely upon those aircrew members who have failed to submit AF Form 847.

Let's face it, the time to do it my way today, your way tomorrow, and dealer's choice on Wednesday has gone the way of the buffalo and the nickel beer. We may be sure that each aircrew will not invent new methods, standards and procedures while enroute to the combat zone. Neither will combat operations provide an unlimited license for field testing every left-field scheme which comes along. These birds will be operated in basic consonance with the technical orders and procedures manuals. The only reliability factors for aircrews and systems rest solidly upon this premise.

Now, let's hear from you dissenters out there. How do you think it will be when the chips are down? When the chips are down! There are blue suiters

combat right now! No combat-ready unit is less than a telephone call and a few flying hours from combat - at now!

How's that for chips?

*Maj L. W. Shinnick, Jr.
Bakalar AFB, Ind.*



RECOVERY IS A SNAP

For more than 50 years, maneuverability has been the prime criteria for fighters and the pride of fighter pilots. While the glamour and glory have been skillfully carried forward by pilots, maneuverability of TAC fighters has been subordinated in favor of the nuclear weapons delivery, conventional weapons delivery and the directed attack. Now with the F-4C added to the inventory, the scene has changed to include the air-to-air missile attack. Ground based radar and the F-4C radar position the interceptor to keep maneuvering to a minimum, allowing the F-4C to run out to its own advantage. Arriving at attack range, there is ample speed to support any kind of attack, including a snap-up delivery to 70,000 feet.

To the TAC pilot, nuclear weapons delivery, conventional weapons delivery and directed attack are old terms, but snap-up delivery is a new term and a new technique to the average TAC fighter pilot. Snap-up delivery is a resultant of aircraft acceleration plus aircraft pitch change. This description is

purely a layman's view, but good enough for the purpose of this discussion. Target altitude and airspeed will vary the interceptor's snap-up point and climb angle. All this is basically simple; however, the recovery from the snap-up delivery is another subject entirely. Depending on snap-up angle and airspeed, the problem is to maintain positive aircraft control throughout the recovery to level flight. A recovery from a 70 degree climb is going to take some presence of mind and more than a little judgment.

Don't let overspeeds shake you. The faster you go, the faster your climb. The faster your climb, the faster you can run out of thrust. The attitude gyro is your primary reference in a burner climb. Avoid any abrupt changes in attitude while in a steep climb for this is a sure invitation to an over-rotation which can turn that climb into a stall. Stall is prevented thru an understanding of the angle of attack/IAS/G relationship. The critical angle of attack is the factor that limits the aircraft. If you exceed critical angle of attack, you will experience a stall. During climbs, turns, breakaway maneuvers, and even in the landing pattern, it is possible to encounter a stall.

C-Birds are capable of longitudinally stable flight throughout a wide airspeed range, and there is no magic airspeed figure for a stall. There is, however, an early indication of the approach to a stall - airframe buffet or wing drop. I repeat, stall is prevented through an understanding of the angle of attack/IAS/"G" relationship. To maintain a constant safe angle of attack, you must decrease G as the airspeed decreases. Remember, low airspeed plus high G equals stall or buffet (now that you're an aerodynamics expert).

You are passing through 40,000 feet in a 60 degree climb. Having just completed a sparrow launch, you get the recovery signal. Look at your airspeed - it's creeping downward to 180 knots. DON'T SWEAT IT! Simply unload toward zero G, neutralize aileron and rudder, and fly the angle of attack between 5 and 10 units. The aircraft will recover nicely, the nose falls through, and airspeed builds up quickly. You should not start your dive recovery until you are in the 200 knots plus region.

Follow these procedures and you will never get into any difficulty in the F-4. It does not have any adverse flight characteristics, at least none where you don't receive plenty of warning to initiate recovery and in all cases the rule of thumb is 5 to 10 units. Remember, 5 to 10 units is the key. Keep this in mind at all times during maneuvering flight and don't sweat it!!



chock talk. Pow! Biff! Bam! Amateur hour

CHOCK TALK

pow! biff! bam!

Three times in two weeks something went off accidentally. First, a B-26 pilot turned on the battery switch as he went thru his pre-start check list. His bird was loaded with 50 cal ammo, 100 pound bombs and four LAU3/A launchers. All seven rockets in one of the launchers fired! The rocket relay for that station had apparently failed to return open, allowing DC bus power to fire the rockets.

Next came three airmen working as an armament load crew on an F-100D which was parked on the flight line. With all of four months experience, they felt they didn't need a check list and failed to disconnect the cannon plugs to the M-39s. They thought about it when a round of 20 MM fired.

An O1-E aircrew was warming up their bird - loaded with two 3.5 inch smoke heads on 2.75 inch motors. Yes, the rockets were armed. The pilot, an IP, pulled the stick back as he started his engine run up, depressing the trigger. He fired one of the rockets. A quick check showed the arming switch was on altho it had previously been checked off. The switch is located near the radio and apparently the other pilot inadvertently turned it on by flipping his headset cord against the switch while making himself comfortable.

Fortunately, in each of these mishaps the aircraft was pointed toward an area reasonably free of men and equipment. No one was hurt and no equipment was damaged. The seven rockets started a brush fire. The 20 MM plowed up dirt over by a harmonization range and altho the smoke rocket traveled about three

miles, it did no appreciable harm. This should re-emphasize the importance of keeping loaded aircraft pointed toward uninhabited areas. By the way, supervisors, are you following this practice? Don't take it for granted. Check over your parking areas, arming and de-arming areas to make sure they meet the minimum requirements of TO 11A-1-33 and the TAF letter on ground handling of explosive loaded aircraft we sent out 25 June. If your present facilities cannot meet these requirements, get busy and devise a workable, waiver-free parking plan.

Also, don't forget to check taxi routes to make sure loaded birds don't sweep the base with hot guns or rockets.

cracked gun barrel

The 450 gallon drop tank fell off as the pilot pulled up from his fourth strafing pass in an F-105. As it went, it ripped off the outer five feet of the leading edge flaps and dented up the wing tip. The pilot only pulled about three Gs on the recovery. The pylon jettison gun barrel had cracked some time earlier and failed on this pass. This is a known weak spot and calls for added care. The unit is magna-fluxing all jettison gun barrels during each 120 day inspection.

amateur hour

The pilot rechecked his armament switches... all set for rockets... lined up on the target, and pressed the pickle button. Neither the pilot nor the range officer saw a rocket fire. After a bit of checking, the rocket was found in the MA-2A launcher.

on the ground, too far from the target to score.

Back in December, maintenance men had completed...well, almost completed...a mod on the armament selector to prevent someone from inadvertently jettisoning the rocket launcher. When the inspector signed off the work, he didn't notice that two small holes had not been drilled, and the selector still worked as originally designed.

wrongway went thataway

When the order came out to inspect all aircraft for chaffed fuel lines, it specified that crew chiefs would remove the engine bay doors so the inspectors could move thru the fleet as fast as possible. When they got to Airman Wrongway's bird, they found the access doors to the intake duct removed instead. It only took a few minutes to replace the outer access door and open up the engine bay. Nobody noticed that the inner access door was not secured...or that the quick release pins were lying loose in the duct. The engine troops found what was left of the pins in the engine...after the compressor stalls and emergency landing.

battery tips

Many troops condemn the nickle-cadmium battery because they do not understand its characteristics and try to treat it like a lead-acid battery. Generally, ni-cad battery trouble is caused by improper electrolyte level. Someone overfills a battery, the electrolyte boils out and causes damage or an explosion.

Never add electrolyte to a ni-cad unless the battery is fully charged. Unlike lead-acid types, the plates in a ni-cad absorb electrolyte as the battery discharges. You may not be able to see the electrolyte in a properly serviced ni-cad battery if it is only partially charged. As the battery charges, the electrolyte seeps out of the plates and its level returns to normal.

To determine the charge state of a ni-cad, you must discharge it according to the manufacturer's instructions to a max level of .5 volts per cell, then charge it as recommended by the manufacturer. You can't tell by checking the specific gravity of the electrolyte since it changes very little with changes in charge in a ni-cad cell.

After the battery is fully charged, let it sit at least two hours before you bring the electrolyte up to the recommended level. Electrolyte for ni-cads is 30 per cent potassium hydroxide and 70 per cent distilled water by volume.

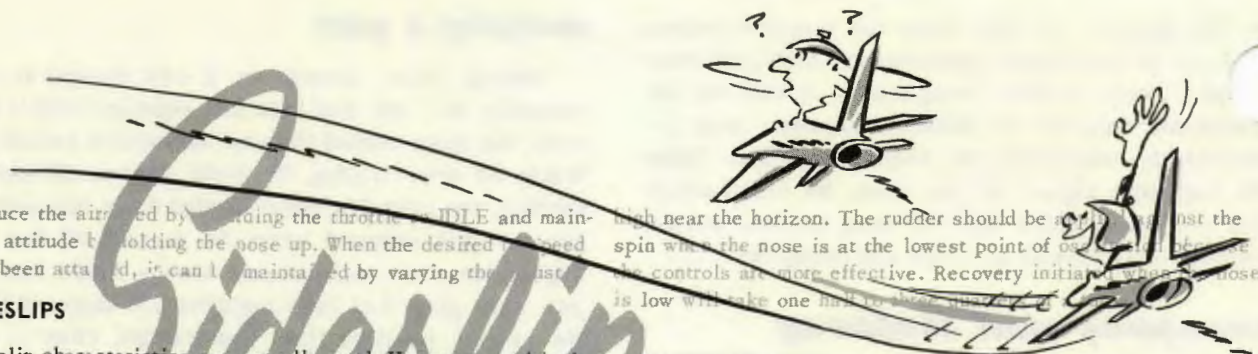
murphy's yaw

Shortly after takeoff an F-104 started to yaw violently full left and then full right and didn't stop until the pilot turned the yaw augmentor switch off. While he was circling the field to burn off fuel for landing, the pilot felt the stick kick to the left several times. This stopped when he turned off the roll augmentor. The maintenance troops found that the yaw rate gyro had been installed 180 degrees from its proper position (like backwards), after it was removed for maintenance on the stick shaker. The incident report called it maintenance error, but went on to explain that the yaw gyro is mounted on top of a fuel cell amidst a tangle of fuel plumbing, wires and connectors. There is a small guide key, 1/32 of an inch high, to align the gyro unit, but it is buried in a rubber mat. It is so easy to miss the guide key, troubleshooters overlooked this Murphy the first time around. When they discovered the problem after another flight, the maintenance people made sure that all hands working on the gyro components understood the possibility and consequences of the incorrect installation and imposed special inspection requirements.

The report said nothing about blowing the whistle on the design deficiency itself. How about a UR, recommending that the guide key be made more effective? Other 104 outfits would benefit from it. And while we're waiting for that to come thru, how about painting a big arrow on the top of the box? Like, "This End Forward."

button it up

This seems to be the season for leaving fasteners unfastened and dropping aircraft panels about the countryside. The most frequent cause is that somebody failed to fasten all the Air Locs or Dzus buttons...and the aircrew, crew chief or transient alert crewmen didn't notice the oversight. Without going into a lengthy discussion about looking for the unexpected instead of the routine on a preflight, we'll pass on the corrective action taken in a couple of units after a panel came off in flight. They simply established a policy that anytime a panel is replaced on an aircraft, ALL the fasteners will be secured, not just the one or two needed to hold it in place until the removed part or the pilot's clothing is put back in. This may cost you an extra minute or two when you have to remove the panel again, but that's nothing compared to the damage that can result.



Reduce the airspeed by pulling the throttle to IDLE and maintain attitude by holding the nose up. When the desired altitude has been attained, it can be maintained by varying the rudder.

SIDESLIPS

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

STALLS

1G Stalls.

At 1G and gear and flaps up the airplane stalls normally, with plenty of warning. It just noticeably and begins to shake and buffet about 10 knots

high near the horizon. The rudder should be used to hold the spin while the nose is at the lowest point of oscillation. At this point the controls are more effective. Recovery initial rudder deflection is low will take one half to three quarters of a turn.

INVERTED SPINS.

Note

An inverted spin is easily recognized because negative-G forces exerted on the pilot will force him against the lap belt.

Inverted spins are usually caused by too much forward stick during slow speed in inverted flight or by pushing the stick forward too quickly when rotation stops during recovery from an erect spin. In

THE

G FACTOR

Continued From The G Factor

Sideslip watched the pipper ease steadily and smoothly toward the target

"Squeeze it over to the right a bit more," he said to himself, "... right cross wind..."

A slight right bank... a little rudder, and... THERE! The sight picture looked perfect. Thumb on the pickle button... there it goes!

The smoke trail of the rocket stretched out from under his wing toward the center of the target circle. Sideslip resisted the temptation to watch and pulled back on the stick, feeling his G-suit press in as he brought the nose up to the horizon and leaned into a left turn.

"Four turning final for rockets... hot!"

"Sideslip, your rocket's a bullseye," the range officer called, "Four, you're clear."

Sideslip felt a glow of satisfaction as he zoomed up to downwind. He swung his head back to

watch his wingman rolling in toward the target.

"Four's breaking out..." His wings leveled suddenly and he headed away from the pattern. "I've got control problems, Lead... the stick's pulsing back and forth! And it feels like the kicker's nibbling at me."

Sideslip broke toward his wingman and nudged the throttle to catch him. "I'll join him, Lead... this is Sideslip."

"OK, Slipper," Lead sounded worried. "Four... keep your nose up, better get some altitude. Check your auto-pilot and APC off... how's it feel now?"

"It seems OK now... somethin' bumped forward on the stick in the turn... and I didn't have four G's on it." Four's voice was calm as Sideslip moved in on him.

"I'll look you over, Four..." The Slip was all business, "be with you in a second."

The bird looked intact. damage anywhere... drop tanks, rocket rails, bomb rack, all OK. They climbed toward home while Sideslip checked... "Pitch damper and pitch control system off, Four?"

"Yeah, Slip, and no more problem since I released the Gs... I'm going to try a couple of turns here and see if it comes back."

"OK Dad, but nothing fancy. We can leave the trouble shooting to the guys in the hangar."

Sideslip dropped back to watch as Four rolled into a turn. "That-aboy, Four," he breathed into his mask without pressing the mike button, "ease into it... two Gs, two-and-a-half... three..." He saw the nose tuck under, recover and tuck again.

"Same thing," Four said seriously, "just like before... almost as if I was overpowering the autopilot... but it hasn't been turned

on the whole flight. As soon as I
ase the Gs it quits ... got any
s, Slipper?"

"Yeah, I do ... get it on the
ground!" Sideslip moved up on
Four's wing and nodded his head
toward the base. "Ask for a
straight-in and we'll let the
trouble shooters play with it where
it won't hurt anybody."

They told the command post
about the problem and called the
tower. Sideslip pulled up to initial
as he watched Four on final, and
made his break as Four touched
down. When they taxied to the
ramp, the debriefing truck was
waiting for them. Sideslip shut
down, unstrapped and hurried over
to Four's aircraft.

"Looks like the same trouble
we've had with this one before,
Frank," the crew chief was scowl-
ing as he briefed the many-striper
in the truck.

"Say, did I hear you say this
happened before?" Sideslip
was leaning thru the other window.

"Yes, sir," there was no doubt
in the crew chief's voice, "two or
three times recently ... and we
never did really duplicate the mal-
function."

"I'm getting interested in this
one," Sideslip nodded at Sgt
Frank, the Line Chief. "Can I
have a look at the other write-
ups ... see how similar they were
to this one?"

"You sure can ... hop in."
Sgt Frank started the truck,
"That's where I'm headed my-
self."

Sideslip waved down a passing
line taxi and tossed his chute and
helmet on it. "Hey, be a good guy
and hang this stuff up for me,"
he called to his wingman. "And
tell the major I'm looking into this
incident ... may be a couple of
rs."

In the records section, a few

minutes later, they sat down to go
over the Form 781a's for the last
month. It didn't take long to find
three write-ups which were al-
most identical to what Four had
written ... each one reported fore
and aft stick oscillations and ap-
parent kicker actuation when posi-
tive Gs were placed on the air-
craft. They also said, in each
case, that the malfunction con-
tinued under positive G even with
the auto pitch control system, auto
pilot and pitch damper turned off.

"OK, sir," Sgt Frank pushed
the rest of the forms aside, "let's
take a look at the corrective
action. If we don't get enough here,
we can pull out the 210's for each
job and see if they contain more
detail."

Sideslip scanned the brief
statements to the right of each dis-
crepancy. "You're the expert in
this maintenance biz, Sarge, not
me ... but from the looks of this
I get the idea that the trouble
shooting has been a bit routine.
Like, if you have trouble with a
hydraulic system, bleed the air out
of it ... that's what they did on the
20th to clear the first write-up.
If there was air in the actuators it
should cause erratic operation any
time ... not just when you start to
pull Gs."

"You're right there," Sgt
Frank nodded, "that one looks
pretty fishy to me."

"OK, when it happened again on
the 28th, they checked the damper
in accordance with this long-han-
dled TO, and replaced the pitch
rate gyro."

"Yes sir, I'm not sure what all
they did on that damper check, but
since they didn't have to service
the damper or replace it, I'd say
they found nothing wrong with it."
Sgt Frank paused to light his pipe
and went on, "Now, on this pitch
rate gyro, we're coming closer to

the G-pulling you're talking about,
but I kinda feel like if it was bad,
it'd give erroneous signals on any
elevator movement ... again, it
wouldn't be limited to pulling Gs."

"That sounds good to me,
Sarge," Sideslip frowned, "spe-
cially when this is the second time
it happened under a G-load ... And
look here, on the 5th they replaced
a cannon plug."

"Well, sir," the Chief's face
brightened, "I've been thinking
back while we talked, and I can
remember a couple of times in the
past that loose connections in a
cannon plug caused trouble under
G loads, but acted perfectly nor-
mal the rest of the time."

"You may have a lead there,"
Sideslip agreed, "but since the
same trouble has happened again,
I'd say either that wasn't the prob-
lem or there's more than one plug
that's bad. What do we do now,
change them all?"

Sgt Frank picked up his hat,
"Let's go out to the bird. They
should have it in the hangar by
now."

When they got to the hangar, the
hydraulic shop had just finished
bleeding the number one flight
control system. Sideslip and the
Line Chief exchanged well-what-
did-you-expect glances, and
moved around the airplane to talk
to the sergeant in charge of the
crew.

"Well, Tom, what d'you think
this time?" Sgt Frank asked.

"Frank," Tom replied, "I hate
to say it, but this one's just about
got me stumped. Bleedin' the sys-
tem got us a coupla bubbles, but
that didn't fix it before ... unless
you have some ideas, I'm about
ready to run a complete control
system check ... pitch control
computer, damper ... the whole
nine yards, but I'm afraid we're
going to come up with a zero like

we did last week."

Sideslip stepped forward, "Look, Frank and I have been mulling this over ... looks like all the checks that've been pulled and the parts replaced would take care of malfunctions that could occur any time ... not just under a G-load. And yet, each of the four times this trouble occurred, it was when the pilot was pulling back on the stick ... pulling Gs."

"That's been bothering me too, sir," Tom was perplexed. "But howinell do we put Gs on the bird here in the hangar?"

"That's what I'm getting to," Sideslip was warming up, "we don't have to put Gs on the whole machine ... just the parts that connect the stick to the elevator."

"I don't getcha, sir."

"Well, positive G is really no more than a force acting from the top of the airplane to the bottom ...

we can simulate it by placing weight on the components in the airplane. What I'm trying to say ... can't we ..."

"Why, sure," Frank interrupted, "We can get at all the disconnect points for the electrical circuits by removing a couple of panels ... take continuity checks on each autopilot and pitch damper circuit while we're pushing or pulling on the connectors."

They started in the cockpit and worked back. There were plenty of strange looks and quiet comments from passers-by as the line chief, pilot and tech sergeant crawled around the airplane ... pushing, pulling and prodding.

The afternoon wore on ... none of them had stopped for lunch ... the bird didn't have many more points they could check. Sideslip kept doggedly at it, altho he was beginning to doubt the value of his

impromptu trouble-shooting technique.

"OK ... I'm going to try a plug here on the pitch damper servo." Sgt Frank's finger traced across the schematic on the hangar floor, "You got the pin numbers?"

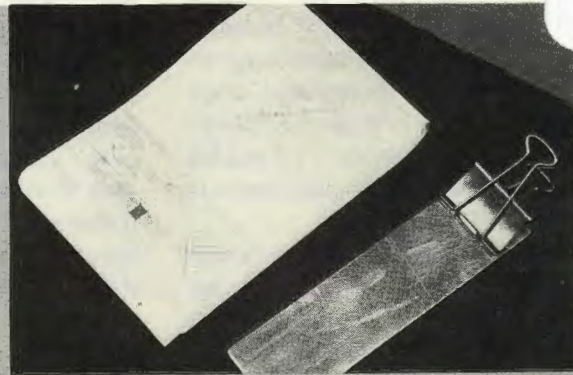
The others nodded silently, discouragement showing on their faces. Tom reached in and started moving the connector gently up and down.

"I think this one's ..." Frank started to say when the entire connection came apart in Tom's hand.

It took no more than a minute for them to see that all but two of the six wires had broken some time in the past. They had been making intermittent contact every time the connector was pulled down.



Better Mousetrap Department



Thumbing through the July issue of the APPROACH I came across a better mouse trap submitted by Major George J. Welken, USMC. And being that TAC fighter types are often looking for a place to put weapons setting cards, strip maps, and Terminal Letdown Books that end up cluttering the cockpit floor, I'll pass it on.

This knee pad was designed specifically for pilots wearing the chap type G-suit and works nicely as a supplement for a regular clip board, or in place of it. Construction is very simple. Take a large binder clip, the type available in any admin sergeant's supply cabinet or ops officer's desk drawer. Have this clip riveted to a 2" x 8" piece of sheet aluminum.

Smooth the edges off a little and you're in business.

You can slide the piece of aluminum between your flight suit and G-suit when you need a holder. When not in use just fold back the ears on the clip and the whole unit fits in your G-suit pocket among the candy wrappers, broken LABs mirrors, and cigarette butts.

I wandered down to the sheet metal shop and conned one of the NCOs into putting the one in the pictures together for me. I guess he thought I was a ground safety hazard with the rivet gun. Anyhow, it only took him about ten minutes and works just great.



PILOT OF *Distinction*



Captain William E. Linihan III of the 479th Tactical Fighter Wing, George Air Force Base, California, has been selected as a Tactical Air Command Pilot of Distinction.

Shortly after takeoff as Captain Linihan advanced the throttle of his F-104C, climbing thru 23,000 feet, the engine compressor stalled. He immediately executed stall clearing procedures and turned toward the nearest suitable airfield. The stall cleared. Anticipating an engine failure, Captain Linihan started a reduced power climb to insure adequate altitude for a flameout approach at Edwards. The engine stalled again two more times. He cleared it each time while completing a successful precautionary landing. Examination of the engine revealed failure of a first stage turbine rotor blade had damaged the turbine section.

Captain Linihan's knowledge of his aircraft and his timely decision to land at a base that required the minimum from his crippled engine most likely averted complete engine failure. His performance under emergency conditions reflects the high degree of professional skill and calm analytical approach that makes him an outstanding fighter pilot and a TAC Pilot of Distinction.

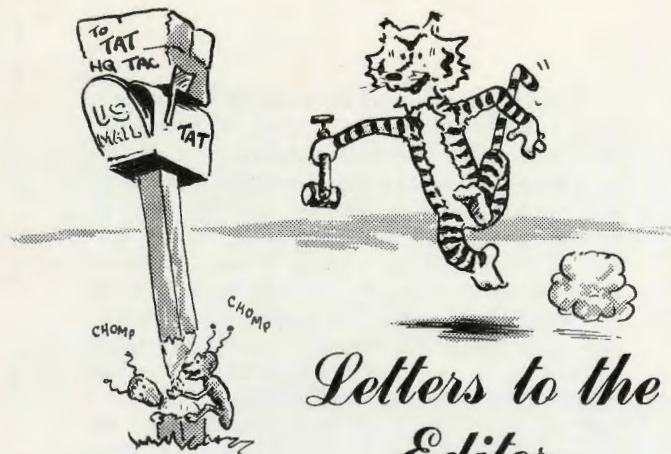
MAINTENANCE MAN of the MONTH

Staff Sergeant Gary L. Knecht of the 4511th Organizational Maintenance Squadron, Luke Air Force Base, Arizona, has been selected as the Tactical Air Command Maintenance Man of the Month.



CREW CHIEF of the MONTH

Staff Sergeant Andrew J. Colbert of the 8th Organizational Maintenance Squadron, George Air Force Base, California, has been selected as the Tactical Air Command Crew Chief of the Month.



Dear TAT

Have done some thinking on the TAC TIP in the January ATTACK that told about the F-100 pilot who had the misfortune of having the canopy bounce off his arms...

The immediate corrective action was to keep the hands and arms inside the cockpit, especially while taxiing. A very understandable and practical procedure.

Haven't we all forgotten something? During the aircraft preflight we check circuit breakers, switch settings, publications, etc., putting our heads in the cockpit. Should we not do this because the canopy once fell down on a jock's arms? How about just climbing in the cockpit? We could get a broken back if the canopy should fall.

Often a new procedure is developed on the spot after an unfortunate incident, which does not really correct the situation. It is only an ounce of corrective action when a ton is needed, or when none at all is needed, as in this instance. I am sure we all agree that the most probable time of inadvertent canopy lowering is during taxi and when raising or lowering the plexiglass.

The bit about arming and de-arming doesn't make sense because we certainly have more dangerous circumstances which require our getting between the canopy and aircraft. It is a good idea but does not solve anything. What would solve the problem would be to have a fail-safe canopy, or have a T-6 canopy installed.

I say, keep arms in during taxiing and actuating the canopy. So does everyone else. Remind jocks of the possibility of inadvertent lowering at other times and let it go at that.

Finally, a corrective action should encompass and correct the problem. If it doesn't, either forget it or get a new one.

Capt Wayne R. Lehr
F-100 SEFE, 4500CCTW
Luke AFB, Arizona

Dear Wayne

I get your point and agree that the proper course of action is to correct the problem at its source . . . remembering that hardware fixes do take time. Meanwhile, back at the bird farm you can't avoid all risk, so take a practical approach. I side with you . . . this unit overreacted on the ops side. Wonder if they UR'd the failure and set up a system to regularly look for defective braces?

TAT

Dear TAT

I am an ardent reader of your safety magazine. My father is with the 314th Combat Support Group at Sewart AFB, Tennessee.

I have some questions to ask. Where is the C-47 on the TAC TALLY rate? Doesn't TAC have a VC-47s? Do the Air Commando Units have some 47s? And, where are the 'copters in the same column? They, also, should be on the safety list.

Tommy Berkes
Smyrna, Tennessee

Dear Tommy

Some years ago I reluctantly responded to a plea from the tower to take it around. I say reluctantly, because I had plenty of spacing and everything looked good to me. However, after adding power and retracting speed brakes I reached for the gear handle. It was already up. I got a similar feeling when checking our flying time records after reading your letter.

TAC flew at least thirty different types of aircraft during 1964. It would take an awful lot of space to list each of these in the TAC TALLY. However, while some were flying over 15,000 hours a month (C-119, C-130, F-100), others were flying less than 500 (F-5, O-1E, H-3, and H-21).

As of this issue, we will list on our TALLY page all aircraft types in TAC regular and reserve forces that log over 500 hours per month. This will change as the birds come and go, but we'll try to keep up with it.

Thanx, Tommy, for sending us around.

TAT

TAC TALLY

A COMPARISON OF TACTICAL AIR COMMAND ORGANIZATIONS

JUN TALLY

UNIT	MAJOR	MINOR
1ACW	1	1
4485TW	1	
314TCW	1	
401TFW	1	
479TFW	1	
366TFW	1	
4520CCTW	1	
355TFW	1	
474TFW	1	
12TFW	1	
363TRW	1	
ANG UNITS	3	2
A R UNITS	2	1

ACCIDENT FREE MAJOR & MINOR

JET			
ACTIVE	MONTHS		ANG
15TFW	9	16	108TFW
354TFW	4	6	126ARW
CONVENTIONAL			
ACTIVE			RESERVE
4500ABW	48	103	434TCW
4442CCTG	31	64	435TCW

MAJOR ACDNT RATE

TYPE	1965*	1964
TAC	9.7	10.5
A-1	34.4	10.7
F-4	15.0	4.9
F-84	13.3	16.1
F-86	54.0	13.4
F-100	14.6	17.8
F-101	0	20.1
F-104	26.7	12.1
F-105	20.7	26.7
B-26	0	76.0
B-57	22.7	0
T-29/C-131	0	0
T-33	0	0
T-39	0	0
C-47	0	0
C-54	0	0
C/KC-97	14.0	15.3
C-119	2.3	1.9
C-123	5.8	5.6
C-130	2.6	1.2
U-3	0	0
U-10	0	17.2
O-1	0	0

* 1 JAN - 30 JUN 1965

In June, we failed to prevent an appalling total of four minors and 16 majors with 11 crew fatalities. An F-5A flight leader saw his wingman descend into the ground after breaking off an ACM engagement at 10,000 feet. Both engines flamed out on an F-4C driver when he made a right turn to enter the landing pattern. Airstarts weren't successful, but both ejections were. Another F-4C pilot didn't get a missile light when he set up the switches for launch. Instead, the pneumatic and utility hydraulic pressure went to zero. The BLC duct assembly forward of the leading edge valve had failed causing major heat damage. After a prebriefed change of lead on a nav/photo mission, the new RF-4C lead pilot noticed his wingman was missing. Radio contact couldn't be established. A ground witness called in the crash.

Low oil pressure followed by both fire lights and loss of pitch control caused an F-105D pilot to eject. He was uninjured. An F-104C pilot was having trouble getting his gear down. He got a visual check from his playmate, then set up a straight in, flamed out, and crashed 2000 feet short of the runway with 1700 pounds on the gage.

The pilot of an F-86F heard and felt a thump, saw the rpm drop to 80 per cent and the aft overhead light. He retarded the throttle to idle during his pull up, then successfully ejected.

Returning from a mission in Vietnam an F-100D pilot found homeplate below minimums in thunderstorms and tried to divert but flamed out enroute and safely ejected. Another F-100D pilot ejected after an airstart failed to restore power lost during join-up after takeoff. At touchdown, the left tire of an RF-84F started skidding, blew, and the aircraft's nose gear sheared after leaving the runway . . . minor damage. Another RF-84F pilot touched down, deployed the chute, hit a puddle of water, swerved right, and went off the runway. The nose and right main gear collapsed . . . major damage.

All four pilots were killed when two A-1Es had a mid-air on a formation training flight.

The pilot of a C-130 landed 150 feet short of a SEA runway, struck a bank, and did major damage to the aft fuselage and ramp. Two RB-57As ran together during a formation instrument training mission. One pilot ejected successfully, the other was too low.

Last contact with a C-119G that departed on a 3 plus 27 minute overwater flight was 2 plus 17 after takeoff, about 175 NM from destination. Another C-119G crew bailed out of their bird after they became preoccupied with icing and lost both engines because they forgot to switch fuel tanks. A top limit switch failure kept the right main gear from extending, so a C-119C crew landed on a foamed runway, main gear up, nose gear down, with minor damage to the aircraft. A KC-97G pilot inadvertently reversed one and two during his landing roll. The big bird received major damage when it went off the runway, hit the left barrier stanchion and a truck. A B-26K on a cross country hop lost its hydraulic system when the gear was lowered. All three gear collapsed on landing, resulting in minor damage.

Princess ANN

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P.E. EXPERTS ARE CONSTANTLY CHANGING OUR PERSONAL EQUIPMENT IN AN ATTEMPT TO IMPROVE ITS EFFECTIVENESS!!

