OCTOBER 1962

TAC ATTACK

TACTICAL AIR COMMAND

A GLIMPSE OF THE PHANTOM

TAC ATTACK

GENERAL WALTER C. SWEENEY JR. COMMANDER
LT GEN GABRIEL P. DISOSWAY VICE COMMANDER
COL JAMES K. JOHNSON CHIEF OFFICE OF SAFETY

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COVER PHOTO

The F-110, to be redesignated the F-4C, one of TAC's up and coming birds.

EDITOR – MAJOR KARL K. DITTMER

ASSOCIATE EDITORS – MAJOR JAMES G. SWENSEN, CAPT JAMES W. FLOWERS

ART AND PRODUCTION – TSGT HEINZ E. HIRSCH, SSGT RICHARD C. RADER

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THE MORE HASTE, EVER THE WORST SPEED
Churchill

angle of attack

Colonel James K. Johnson
Chief
Office of Safety

At one time or another most *of* us have rushed to get somewhere on *time*. This is when zippers get stuck, buttons *fall* off, and in general, everything goes wrong. I even heard of one young man who hacked himself to a fare-the-well because he was in such a hurry he put a new blade in his safety razor without removing the old one.

We all recognize the fact that the hurrieder you go the behinder you get . . . yet we all yield to the impulse to hurry from time to time. In aviation, we *can ill* afford to. The hasty flight plan is *never* completely accurate... the rushed *maintenance* operation seldom properly completed. Combine one or two errors induced by haste and an inflight emergency generally results. When it does, the pilot may be tempted to speed thru the emergency procedures, or simply get in a hurry to get the damn thing on the ground and the result is another accident.

All should resist this inclination... But *particularly*, a pilot must resist it at all times. *In* an emergency, more than any other *time*, his very life may depend on how well *he* resists it. Too often I've reviewed accident reports featuring pilots who experienced a relatively minor emergency, made a hasty evaluation, or no evaluation, of the difficulty and decided to get their aircraft on the runway at all cost.

Even when the emergency is serious, haste is *ill* advised. An excellent example of this occurred some time back when an F-100 *pilot* was killed when he attempted a landing *with* an ailing engine. He ruined his first approach by making his pattern too close. He was still too close on his final fatal attempt.

Test pilots and others who have had practice with adrenalin producing situations generally have very similar reactions to an apparent inflight emergency. First, they scramble for altitude while heading toward the nearest key position from which they know they can land stick and rudder only. *While* headed there, they confirm the seriousness of the emergency by checking for additional indications. If they decide to make an immediate landing, their pattern is large enough to assure making the field without having to wrack the aircraft around. Speeds are conservative and accurate—this is no time to overshoot or undershoot. Being deliberate helps them to stay reasonably calm and in control of both the situation *and* themselves. It will do the same for you.

the G.G.G. and ME

SOME OF YOU younger lads don't seem to think us Gremlins exist. When we do a successful job, you go around blaming lady luck, the supervisor or someone like that. The old troops know better . . . they've seen us at work. But, even the old troops don't really understand how we operate. For instance, when Orville had his trouble at Fort Myer back in the early days, they blamed one of my great uncles. They said he broke the chain drive to one of the airscrews. That's not exactly correct. The chain was ready to break all along. All Uncle Mort did was keep Mr. Wright from noticing it when he made his preflight.

As I recall, he kept urging Orv to flip the prop and drop the rock. Mr. Wright didn't pay much attention to Mort, but he didn't spot that cracked chain link either, and that's what Uncle Mort was after. Not only did Uncle Mort make history, he got to see a real crazy crash.

Us Gremlins work pretty much the same way today. Of course, todays pilots are a lot harder to trick into trouble. Also, you no longer try to do everything yourself. You have a lot of other people helping you. We reacted to this by organizing the Ground Gremlin Group. The GGG helps us with each job and sometimes they do more than we can. We try for a crazy crash everytime one of you fly. Most of the time we fail. This gets rather exasperating. Quite often we will have an accident all set up only to have someone wise up and spoil all our work.

We keep trying, because these new fast jobs make such spectacular smashes and just one of them offsets our failures. Take this one, I, ahem, helped set up just the other day. I was told to work on a couple of F-100 pilots who were flying from Raymon Air Base to Stack Air Base. At first, it looked like I'd be wasting my time, but orders are orders.

The GGG at Raymon was completely unsuccessful in their efforts to make the briefing officer ineffective. He gave the pilots an excellent briefing and despite all I could do, both paid attention to him. For a moment I thought I'd found a weak spot. This was when the weather man failed to play up the possibility of thunderstorms.

You see, I knew a thunderstorm would be over Stack about an hour after the flight was scheduled to arrive and already had the GGG doing their best to delay takeoff. However, even tho Stack was forecasting 3000 and 5, the flight leader checked his alternate and put the heading, distance and time

enroute on his flight plan. I kept trying to convince him that 3000 and 5 was practically VFR and that he'd never use an alternate . . . but he didn't listen, he was too savvy.

The GGG was able to delay takeoff by distracting the transient maintenance crew at Raymon. The maintenance crew didn't get around to installing the drag chutes until after the pilots arrived at their birds and started their preflight. The timing was almost perfect.

We got another break, a small one to be sure, when ATC cleared the flight at FL 330 instead of 350. This helped use a little of their fuel reserve. Meanwhile the GGG in flight service pulled a slick one.

I'm not at liberty to tell how they did it, but they managed to delay the flight plan so that it didn't arrive in base ops at Stack until after the fun was all over. The beautiful irony of this bit of work was that center personnel in the Stack area couldn't transmit the flight plan to base ops because an emergency was in progress . . . an emergency that involved this flight!!

I don't need to point out how well this sabotaged the inflight following system at Stack.

But I'm getting ahead of myself. When the flight was about 50 miles from Stack, they were transferred to Folktown Center, which handles the Stack area, and told to descend to 250. As soon as the flight leader contacted Folktown Center he advised them he was near minimum fuel.

The Folktown approach controller contacted the flight and said, "Roger, lead, understand you are minimum fuel . . . What is your fuel?" From this I knew that the Folktown controller would be hard to trap. He was wise enough to realize that minimum fuel is one of those things that vary from pilot to pilot.

The leader answered, "We'll be approaching minimum fuel if we have any delays is what I advised."

"You'll have negative delays," the controller answered, "what is your fuel in hours and minutes?" That was a good come back, and confirmed my fear that the GGG would have a hard time cracking him. However, I must admit we have some clever people in the GGG and they enjoy a challenge.

The flight leader answered, "My wingman is down to 40 minutes. Ah, what's Stack weather?"

The controller had to rely on weather relayed from Stack on the land line since the GGG was able to jimmy the telewriter used to pass weather information from Stack to Center. Real neat set up for us. Now we can easily get them too busy to pass on the info.

Near as I recall, he checked a nearby civil field and looked at his scope, then said, "Roger Lead, they have an area of precipitation over Stack airport at the present time. It puts Birddog Field below circling minimums . . . However, this will be a GCA straight in to zero seven." Birddog is six miles from Stack. "Lead, steer left to zero nine zero. You have an area of precipitation one o'clock four miles."

"Tally-ho on it. I am 20, thousand."

"Understand, 20,000. You have another area at 12 o'clock right over the Stack airport and that is 14 miles."

The lead said, "Roger." I was busy and succeeding!

The controller advised that the Stack weather was now light rain showers from a thunderstorm. I managed to convince the leader that it wasn't much of a thunderstorm, or they'd be reporting heavy rain. So he told his wingman to check his defrost and they pressed on.

The controller vectored the flight around one rain storm and onto a dog leg to final. By now they were steady at 2500 and I was sweating. The thunderstorm hadn't really moved in yet and if I didn't delay them they might sneak in ahead of it.

But we got a series of real breaks. First was the new discrete GCA frequency system. When center gave the leader the GCA frequency I nudged his arm and he copied it down as 384.0 instead of 284.0. When he read it back, the GGG managed to slur the controller's hearing and he didn't catch the error. Also they managed to get the controller to pass

the flight over to GCA just a little later than usual. At almost the same time the flight hit some rain and the wingman lost sight of the leader.

By the time the leader could unscramble the frequency error and GCA and the controller could unscramble the flight being split in two, the leader was so close he was forced to make a missed approach.

We almost had a setback. The people in Stack base ops found out that the flight was in the pattern. They didn't like the weather outlook and had smarts enough to check on the flight's alternate which was about three minutes from Stack.

The alternate was VFR, so they advised GCA to send the flight to the alternate. Fortunately for us, GCA was practically saturated at the time. They had just handed the leader back to the approach controller for a missed approach and were talking the wingman onto the glide path. The GCA operator asked the wingman if he wanted to divert. The wingman said he'd make a try at Stack first. He just made it as the storm hit. The wind was far enough off the runway heading to force him to jettison his chute in order to stay on the runway. Water covered the runway so he went down it like a gold cup winner. Just before reaching the barrier he punched off the tanks. He hooked the barrier and we had to give him up as saved. But this left all of us free to concentrate on the leader.

With the wingman in the barrier and crash equipment gathered around him the runway would be tied up for awhile. This would also help.

Meanwhile the leader declared minimum fuel for himself, reporting 20 minutes left. Then, when I made it appear that the controller was going to vector him around on a low-level cross country the leader declared an emergency.

The GGG jumped on that like a bunch of hens on a grasshopper and induced the controller into hurrying.

The leader asked, "What is my position?"

The controller answered, "Fourteen miles North West . . . I mean North East. Ah, you are 11 miles NE of Bayfield. We can give you a radar vector for a straight in to there." See what I mean about the GGG?

"I'll take Stack if you can get me in on one pass," the leader advised.

"Roger" the controller said, "Leader, Stack has a thunderstorm right over the field at the present time." The controller was still rattled.

"Give me the nearest airport available."

That's when I could smell success. If we could just keep them from considering the alternate, we'd have him!

The controller replied, "Bayfield is the closest. Turn left one, — correction, 200."

"Understand, 200." The leader must have gotten suspicious because he next asked, "What length runway?"

The controller stalled by asking him to say again. Finally he answered, "Lead, its about 5000 feet."

"Not long enough," the leader replied, "I need eight to 10,000!"

The controller sounded perplexed, "Eight to ten? They don't have one that long. Will you accept an approach to two five at Stack?"

Somehow I was able to convince the leader that the controller had said there were no other runways available that were eight to 10,000 feet long.

When the controller passed him back to GCA, he told GCA that leader was down to 10 min fuel. GCA told the controller that the wingman was in the barrier and asked them if they could get him into Bayfield.

The controller said, "Negative, he can't make Bayfield!"

GCA assumed that this was due to low fuel, and automatically forgot about the alternate! He decided to take him in on runway 35, some 6000 feet of wet concrete with no barrier. Now we had him hooked!

To further help us, runway 35 was crosswise to the GCA runway so all they could give him was a surveillance approach. GCA descended him to 500 feet, since that was the last ceiling that had been reported to them. The GCA controller believed that this would put the leader low enough to get contact. Har! The ceiling had dropped due to the storm and all the leader got was a quick glance at the field when he went by.

You know the rest, he made one more try, and when he was down to 250 pounds asked for a bail out heading and punched out.

The bird sure made a pretty splash! The GGG got a commendation and I'm in for the Distinguished Crash Cross.

A TAC CENTURY birdman was making a RAPCON-GCA to a west coast air patch one evening with weather holding about 800 feet broken, 1800 overcast, one mile in light rain and fog. For want of a better name, we'll call his destination Black Rock.

Ten miles out on GCA final, approach control broke in to advise him that Black Rock was "closed due to a power failure." With 2600 pounds on board, the pilot asked for a hand off to another nearby air patch.

Approach control vectored him toward this field and directed a climb to 3000. The pilot declared minimum fuel at 2000 pounds just before approach control instructed him to go to 335.8mc for GCA.

The ARC 34 failed during the channel change. Getting desperate, the pilot tried several GCA channels and Guard but to no avail. He then turned to a heading that put him on downwind for an ADF to Black Rock and climbed to 8000 feet, squawking emergency. This put him above the soup where he could give more attention to the radio. He turned it off, waited, turned it back on . . . then, hoping the transmitter was working (it wasn't) he called in the blind that he intended to try an ADF approach to Black Rock. He decided on this course of action because he had been told to make an ADF to Black Rock in the event of radio failure during the original RAPCON approach. When fuel reached 1500 pounds, he jettisoned his empty external stores and turned back toward the Black Rock beacon located about 4 miles north of Black Rock. Minimum altitude over the beacon is 1200 feet with 570 feet being minimum for the approach.

The report we have indicates that this pilot descended to 500 feet while still inbound to the beacon. He broke out at that altitude and stayed under the stuff, by dropping still lower.

Since it was getting dark with the runway lights inoperative and only one mile vis, he did not see the field until he was quite close in... Regardless, he made a successful and, sweat, uneventful landing, gasp!

Holy hot cakes! This one had us hanging onto both sides of our swivel chair! The pilot involved was dumped into a pretty tight corner and was lucky to get himself out of it. The fact that he did would, at first glance, appear to credit his skill, cunning and ability. However... after a second and third glance old TAT has a comment or two. First... let's admit some facts. It is one thing to sit at a desk flipping thru the letdown book, checking altitudes, alternatives and such while trying to decide on courses of action. It's an entirely different fish fry to try making these decisions while attempting to stay ahead of a somewhat less than completely stable chunk of aluminum moving along at 250 knots. With this in mind, leave us trace back thru this maze and critique the flight... not just to be criticizing, but to see what we can learn.

First, we're on our GCA and this loud mouth tells us Black Rock is "closed" due to power failure.

We are the obstinate type and would have been prone to ask why a power failure induced them to close shop. Troops at Black Rock erred here, not the pilot. We'd bet that if they had sent him word that the runway

lights would be inop, he would have continued the approach. Some things look worse to the guy on the ground than to the boy in the blue. But they didn't and he didn't and from the info he had available decision number one was sound. His procedure for carrying out this decision was good and, offhand, he seemed to have a pretty good working knowledge of the immediate area—Something that helps to pull off a deal like this. This knowledge must be with you before you take off.

After the radio went, phutt! he did what any normal red blooded American lad would do. He tried his best to find a good channel. Again, no sweat.

Next he elected to return to Black Rock for an ADF. Once again we have no argument. Under the circumstances it was about as good a decision as was available. Chances are he already had the letdown plate out for Black Rock and the ADF tuned to it. If so, this would make for less fumbling than an attempt to run an ADF or TACAN approach to the other air patch. Our first criticism of his performance is the climb to 8000 feet. We can understand his wanting to get up where he could see and concentrate on things other than instruments . . . but, looking back, he took a chance when he climbed above his last assigned altitude. The area is fairly well saturated with airfields and altho he undoubtedly was quite familiar with jet procedures and jet traffic within this complex we'd bet he had few ideas about the goings on of the

reciprocating set. When the weather gets soggy, those lads are apt to be holding in stacks on obscure intersections all over the surrounding area. The potential hazard of an unrestricted climb thru their favorite altitudes is obvious. Ditto the subsequent descent.

Another descent comes under scrutiny for our next bit of hind sighting. The trip to 500 feet while inbound to the fix. With all the hustle and bustle, we can hardly see how this troop could have known how far he was from the fix. Darned if we'd descend below 1200 feet—the published minimum—while at an undetermined point inbound, even tho we were dead certain no radio towers or TV antennas stood between our estimated position and the fix. We would do our cheating on the other side!

True, the weather may have permitted this descent in relative safety . . . but the risk was still not necessary. Instead, we'd have slowed to final approach speed with rollers down. On hitting the fix we would have initiated a rate of descent calculated to hit the end of the runway at zero feet.

The fix was about one minute out and the minimum altitude about 1100 feet above the runway. We'd have set-up 1000 feet per . . . and held it until we either broke out or were afraid to go lower. Just how low we'd go is a personal problem and would depend on how much faith we had in our altimeter, our ability and our guardian angel. We would like to think that we would consider our fellow mortals residing along the approach path, remembering that the aircraft alone is not capable of nudging itself away from them at the last split second.

Speaking of the people below . . . we have a final comment concerning the empty external tanks. He was only 1500 pounds away from flame out. The race is pretty well over at this stage and it was too late to gain much range from dumping tanks.

THE BIRD WAS FRESH off the wash rack and as clean as it was apt to get. The two first John's and their flight engineer checked it over and were soon off into the field grade blue sky. The mission was a test hop for an aileron change and they planned to make little more than a quick trip around the pattern of the fighter base where they were TDY.

Altho they'd filed a clearance indicating two hours fuel, the bird was serviced with somewhat less fuel than that.

We ask you, do you think they got to complete their orbit no sweat? Of course not – we wouldn't be writing about it if they had! But back to the flight.

The aileron checked O.K. and the two Lts headed back into the pattern about ten or fifteen minutes after lift off.

They dropped the gear and . . . the nose gear indicated up. They recycled the gear but the nose gear still stayed up. They repeated this again and again as they worked their way around onto final. They had no success even tho the engineer pulled the emergency uplock lanyard, the pilot pulled it and both the pilot and engineer pulled it together.

After the accident, a member of the board pulled the lanyard and it worked . . . but on with our story. On final, they took it around and told the tower that they were having gear trouble.

About five minutes later, with petrol down to 1000 pounds, they declared an emergency and advised the tower that they were down to minimum fuel. The tower cleared them to land and advised all aircraft in the area to stay clear, that an emergency was in progress.

It took about five minutes more to complete their pattern and to make additional attempts to lower the stubborn gear. The landing was a reasonable success. Damage was minor and only affected some rivets and sheet metal on the underside of the nose section.

Shortly after the dust settled, the board squared away on these troops and made some well directed remarks. To begin with, they criticized them for declaring minimum fuel with 1000 pounds on board. After the accident they dipsticked the fuel and found that there was enough on board to fly at max endurance for forty minutes, make an approach, closed pattern and additional approach and still have some fuel left. They reasoned that this forty minutes could have been used to make additional tries at lowering the gear, to enlist some expert help from people on the ground, and to permit foaming the runway.

It would also have permitted several fighter pilots to recover prior to the crash landing. As it was, these troops had to divert and some landed with what a fighter pilot considers minimum fuel . . . enough to make three or four fast approaches to the airpatch. Emergency fuel means one careful approach. This varies from outfit to outfit and from cockpit to cockpit, but serves as a rough guide.

Altho we agree with the board on staying up for more attempts, getting expert help and recovering the fighters that are airborne, we wonder if they'd have actually recovered these people or would have tied up the runway spreading foam.

Given a choice between the two, we'd elect to recover the fighters since foam does more to prevent fire than it does to prevent damage and this particular aircraft has no fuel tanks in its belly.

The board also raised an eyebrow on the relative merit of leaping off on a test hop with less than an hour of fuel on board. TAT agrees. We admit that most pilots are inclined to go to the other extreme and carry several hours supply on a short hop. This can be just as bad. But, one hour goes right fast when you are trying to unpickle yourself from a pickle, and a test hop is generally considered a search for possible trouble.

Now that we're thru looking beady eyed at the aircrew, lets glare at the people who really caused this mishap . . . the hard working maintenance men. They didn't grease landing gear fittings after washing the bird – even tho the T.O. tells 'em to.

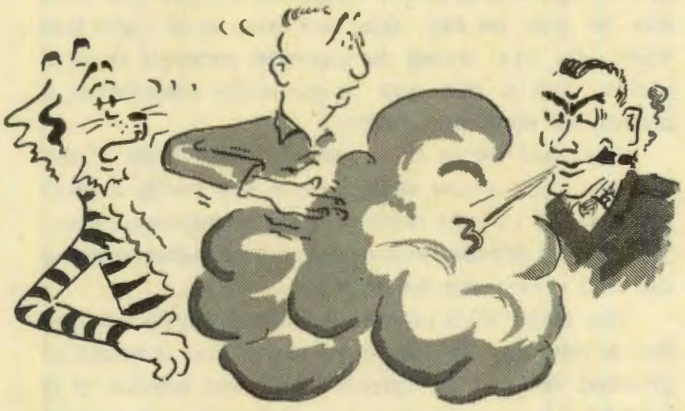
The crew chief pointed out that the bird was due for a periodic in ten more hours and it would be greased then. TAT couldn't help but wonder if it would have been greased even then, since the board found all fittings to be bone dry. To us, that looks like someone had skipped more than just the post washing greasing . . . regardless, we'd bet they spent ten times more time fixin' the damage than they would have spent keeping the bird properly greased.

THE BLOOMING FIRE went out at 33M and all attempts to get a relight were about as successful as trying to extract the first can from a six-pack, one handed. Four thousand feet above the dirt, the troop in the aft seat punched out, then his buddy up front made his try. The seat didn't fire. An IP on the ground talked him thru the ejection sequence, including checking to see that the pins were out, but

it still didn't fire. Before he could say more, he lost radio contact.

The front seat pilot was killed in the crash landing. Not many years ago we didn't have ejection seats . . . yet, many a pilot crawled over the side and watched his crippled machine splatter while he floated safely to earth.

Sure, the new system is better—when it works. When it don't work, the old way is far better than risking a crash landing in rough terrain. Remember to use it!



TWO TROOPS here in the office were cheated out of three fourths a local transition flight when a bucket cut loose from their T-bird just as they reached altitude on climbout. They pulled power off until the rumbling and grumbling subsided and found themselves holding about 70%. This was enough to get them onto a high base where they dropped gear and flaps.

The landing was no sweat. Half an hour later, weather moved in and the field was soon five or six hundred and a few. Being bird watchers, we got to discussing possible courses of action for recovering the sick bird had the weather beat 'em to the field. This made for an exciting bull session until the boss suggested we get busy trying to stop some of the more pressing accidents already plaguing us.

We've noticed quite a few T-bird bucket failures recently. The engines are getting pretty old and some of us troops don't always treat it too kindly. We get particularly incensed with troops who are too vigorous with the throttle when they leave the parking area or make a ground checkout. You don't have to move the critter very fast when the bird is sitting to overtemp the engine . . . but you have plenty of time and there is no need to overtemp a bird on the ground. Normally there isn't much need for it in the air either.

Incidently, the T-bird troops we've flown with fall into three groups when it comes to throttle bending on a touch and go or low go. Group one - the minority - move the throttle very, very slowly at first, gradually speeding up until by the time the engine has reached 80% they are moving throttle reasonably fast. Temperature will stay below 700 degrees.

This group we classify as the experts. Group two - the vast majority - move the throttle to about the 60% range, wait for the temp to come back down from 750 to 700 or so, then move it to about the 80-85% range and repeat, then go full forward.

They would be better off if they would do as the third group does . . . move it from idle to full in one smooth push. The initial temperature surge is generally not as bad as when the throttle is only moved half forward, and there is only the one surge.

We call this group the GADGET TRUSTERS for obvious reasons.

A TAC CREW badly wrinkled their C-123 when they hit a bump on takeoff after having landed on the wrong field. Seems they thought a 1100 foot dirt strip was their 3900 foot dirt strip destination.

There were other factors. Neither field had a control tower, navigation facilities in the area were limited, and the aircrew had some reasonably good excuses for expediting their departure from the 1100 foot strip.

Regardless, there is no legit excuse for this boner...we just expect a more professional performance than that from TAC crews even when it's their first flight into the particular air pasture.

On the other hand, the ink was hardly dry on the accident report when TAT spotted a newspaper report telling of a senior airline Captain who landed his big jet transport at, you guessed it, the wrong air patch. He managed to get stopped on a 5000 foot chunk of concrete he mistook for his 8800 foot destination some ten miles away. No damage other than strained customer relations, a red face or two, and such.

TAT couldn't help compare the two types of operation. One with a regular scheduled run flown many, many times, the other with a new and different destination for most hops.

There do be a moral to all this, but we haven't decided for sure just what it is. Perhaps 'tis that no matter how experienced you are, you can't afford to let down your guard with an aircraft.

—TAT—

SHORT STOPPED

AN F-100 PILOT completed a test hop and entered traffic setting up what he thought was a perfect pattern. The bird was in the groove down final approach . . . airspeed was 150 KIAS as he crossed the overrun. The pilot planned to touch down 700 feet from the end of the runway opposite mobile, at 140 KIAS. He applied back pressure to bring the nose a little higher as he crossed the end of the runway 3-4 feet in the air.

Then, HOLY COW! The aircraft seemed to stop right there! It slammed onto the runway, pitched up violently to an extremely nose high attitude and yawed hard right. The pilot was just along for the ride. He did push forward on the stick with both hands and jammed in full left rudder, but couldn't maintain control and the bird went sailing off the right side of the runway. It hit the ground right wing first followed shortly by the right wheel and then the left. The whole aircraft came sadly to rest approximately 1640 feet from the approach end of the runway.

The pictures will give you a good idea of what happened. The pilot didn't know it, but the tail hook was extended. It snatched the barrier as the aircraft crossed above it. The barrier was an MA-1 modified for tail hook equipped aircraft. Approximately 20,000 pounds of aircraft traveling at 150 KIAS was suddenly tied to approximately 50,000 pounds of static chain . . . UGH!

Apparently it takes an accident such as this to point out the hazard of an inadvertent tail hook extension. At least that's what it took for the unit charged with this accident. They had experienced several previous inadvertent extensions without showing too much concern and had not done much to determine the cause of the extensions.

You can see in the photo that the hook hangs down a considerable distance when the bird is airborne, consequently, if you come over the end of the runway anywhere near the normal altitude with the tail hook extended, something's going to happen.

Most TAC bases have this type barrier installed and they do create a definite hazard to tail hook equipped aircraft. Until we get warning lights in the cockpit to show whether the hook is in the proper place, we must be extremely careful if we are to prevent inadvertent engagements. We can begin by insuring that the tail hook system is properly maintained, by insisting that both pilots and maintenance personnel check the system closely during preflight, by having all mobile controllers check each aircraft carefully, by requiring each member of a flight to check the other members, and finally, if there is any doubt, by planning an approach and touch down that would let an extended tail hook clear the barrier.

Keep the PRESSURE on!

keep the pressure on!

BY RUDOLPH SIGNORETTI, CURTIS-WRIGHT CORP

. . . WELL, AT LEAST some of it! This seems a little ironic, considering contemporary philosophy dictates slow down, relax, relieve the pressure. Of course, this is perfectly straight dope when related to the human machine, but not at all true when applied to your aircraft's reciprocating powerplant.

Your aircraft engine has been designed and built as precise and rugged as modern engineering know-how will allow. Powerplants, such as the R3350 turbo compound, not only deliver high power with low engine weight, but continue to do so, reliably, for many hundreds of hours.

To achieve good reliability requires a few rules of the road, particularly sound operating practices and techniques. One of these rules is to avoid underboosting. Technically, underboosting occurs when the combustion pressures do not equal or exceed the centrifugal and inertial forces generated by crankshaft speed. It has been said a number of times that one picture is worth many, many words. So, in the interest of better understanding, let us picture a series of pistons and rods attached to a crankshaft revolving at high speed (2000 plus RPM). To balance the terrific centrifugal and inertial forces, the expanding combustion gases in the cylinder push on the piston in the opposite direction.

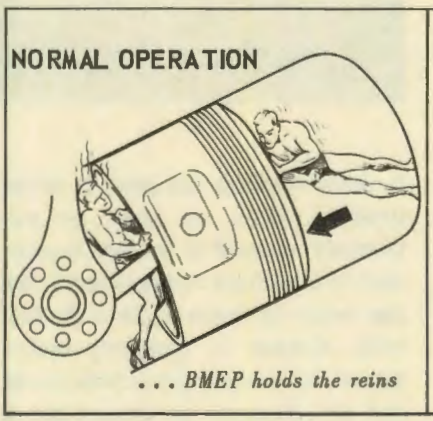


Figure 1.

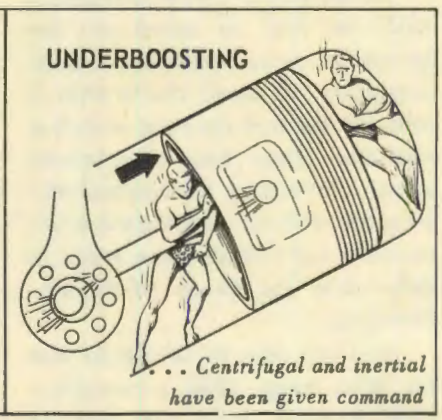


Figure 2.

Normally, the gaseous pressure on the piston equals or exceeds the outward forces. Consequently, this creates torque, power and the prop thrust needed to propel the aircraft (See Figure 1). Under some conditions of flight, particularly during descent, the exact opposite can occur. With the propeller governor maintaining a constant RPM, it is possible to throttle back to the point where the gaseous pressure on the piston will fall below the centrifugal and inertial forces of the rod and piston mass. This results in a condition of engine operation known as underboosting (See Figure 2). Underboosting results in reverse forces being applied to piston pins and bosses, master rod bearings and knuckle pins. Consistent underboost operation may result in some of these parts failing (See Figure 3). In addition, piston ring flutter may be induced (See Figure 4). Any of these conditions can induce an engine failure.

How do we know when underboosting occurs, and better still, what do we do to prevent it?

We have the answer to the first question as soon as we can determine when the combustion gas pressure falls below a certain value at a given RPM. With a constant mass (piston and rod), centrifugal and inertial forces are a direct function of RPM. Now, since combustion gas pressure and BMEP are directly related, all of the variables that affect BMEP would have to be considered in order to make a theoretical evaluation. Engine operating variables such as manifold pressure, altitude, carburetor air temperature, fuel-air ratio and

spark advance would all have to be accounted for.

Obviously, to arrive at the exact BMEP value, the man behind the throttle would have to be a mathematician equipped with a slide rule, graph paper and at least a dozen sharp pencils. Well, breathe easy, because the problem has been greatly simplified. After much analysis and compromise, all variables but one have been eliminated, . . . that's manifold absolute pressure.

Constant relationship between MAP and RPM has been established. From this relationship evolves the answer to the second question: to preclude underboosting...maintain approximately one inch of manifold pressure for each 100 RPM.

Piston pin boss cracking due to underboosting.

Figure 3.

Piston ring groove wear resulting from ring flutter.

Figure 4.

So, the next time you start your letdown for home base after that long mission, remember the equipment that delivered you there. Ease the throttle back, but keep some pressure on .

TAC TIPS

GOOD GRIEF

The pilot of a century bird started take-off on a 10,000-foot runway. He heard an explosion of some type with about 7000 feet of runway remaining, but elected to continue the take-off. Why? Before reaching 500 feet he experienced heavy compressor stalls and mobile called that the aircraft was on fire. He elected to fly a rectangular pattern under a 600-foot ceiling rather than to eject. Why? On the downwind he lost power, bled off his airspeed and was unable to maintain altitude. He continued to descend trying to get an AB light. Why? God alone gave him a light on the eighth or ninth attempt, and he was able to check the sink rate at about 150 feet. He climbed to 600 feet and, turning base, lost sight of the field in a rain squall. He descended to 300 feet two miles out with a sick bird in an effort to get back in. Why? Amidst more stalls and rain squalls he eventually landed the aircraft on the runway. The pilot was apparently functioning under the concept of "Don't confuse me with the facts, my mind is made up" He was unquestionably a fine stick and rudder man, yet there is no avoiding the fact that some pretty basic ideas were neglected. We can always build more aircraft, but pilots are irreplaceable. It takes guts to eject and that go/stay decision must be based on facts, not intuition or superstition. Pilots should be familiar with the capabilities and limitations of their ejection equipment and use it when conditions warrant.

7272d Flight Safety Bulletin

TAC TIPS

RADAR AND SUNGLASSES

An airline reports that target presentation on the Bright Display Radar Indicator may be partially cancelled by polaroid sunglasses. When viewing the radar screen at angles greater than 45 degrees, the polaroid screen and sunglasses react to cause an adverse limited vision effect. The effect can be eliminated by removing sunglasses or by viewing the screen from a direct straight-in position.

MURPHY'S LAW

Here is a prime example of how Murphy's Law can cause young men to turn grey and commanders to turn livid. Shortly after takeoff in an F-100, an explosion rocked the aircraft and the overheat-warning light illuminated. The pilot made a climbing turn to safe ejection altitude and came out of afterburner. The warning light flickered and then went out. The pilot declared an emergency and requested his wingman to look his bird over for indications of fire. Sure enough, an orange glow was reported in the lower aft section. At this point many of us would have stepped over the side without hesitation. But not this fellow. He brought the aircraft back for a safe landing despite an unsafe nose gear and drag chute failure!

"Ah ha!" you say. "F-100 - explosion on take-off - fire warning light - a typical example of a cracked pigtail." You're right! Sixteen of the twenty-four pigtails leaked fuel in great quantities when the afterburner was selected. Now here's where Murphy's Law comes in. Twelve of the pigtails were installed backwards. Consequently, the tubes were stretched so much that cracks began to form. This has long been a problem area and a bracket was designed to avoid this type Murphy, but the bracket didn't seem to deter some enterprising soul who after much knucklebusting effort was able to thwart designer, T.O. and inspector. Then to add insult to injury, he overtorques all of the pigtails causing the four additional failures.

SAFETY FIRST

Safety Officers! Why not publicize your aircraft accident prevention programs? Your base newspaper is an excellent media for disseminating safety information to all personnel. An occasional story or news release will be well worth your time. Give it a try and see how it helps you when you keep safety out front.

BUSTED CHECK

Seventeen minutes after lift off a jet crashed from apparent uncontrolled flight. Cruising altitude was FL 400, and it didn't take long for investigators to reach their conclusions. They found that the pilot had been delayed two hours waiting for his aircraft to be serviced and that altho oxygen was requested, none was supplied.

When things go wrong and support people fall down on their job, the natural impulse is to hurry away from the confusion. As a pilot, you can't afford to give in to an impulse such as this. Instead, you must be more cautious than normal, particularly on your pre-flight checks.

BLUNT THE NEEDLE

Air traffic controllers and pilots often operate under conditions of great tension and stress. Neither controllers nor pilots are always perfect. Each should put himself in the other's position and eliminate sarcasm and needling. Pilots and controllers must learn to live with a distressing situation which had its origin in penny-wise budget curtailments made many years ago. Efforts are being made to correct the deficiencies. It will take time. So take a tip from Confucius . . . RELAX, but don't go limp.

—Robins AFB TF

HOT HOOKS

An F-100 landed with the tailhook extended. The pilot turned off the runway and shut down the engine. Fuel from the gang drains flowed down the hook shaft onto the extremely hot hook. In this case a serious fire was averted, however, it does point out an accident potential that pilots and firemen should know about. Recommend the following action be taken if the hook is dragged for a sufficient distance to cause any appreciable friction heating:

* Stop the aircraft after clearing the runway.
* Cool the hook with a CO_2 fire extinguisher (this will not cause metal strength deterioration unless the hook is rosy red).
* Shut down the engine.

This in no way affects the emergency procedure checklist for barrier engagement with the tailhook extended.

RINGS ON YOUR FINGERS, BELLS ON YOUR TOES

We heard about two flyers recently, one a pilot and the other a crewmember, who had their fingers severely cut when they caught their rings on part of their aircraft. And we just received another report on a maintenance man who lost a finger when his ring caught on a piece of equipment as he jumped from it. Instructions have often been given to pilots and others working in and around aircraft to remove finger rings while on the flight line. In fact AFM 32-3 instructs that all personnel will refrain from wearing finger rings while actually engaged in aircraft ground operations. If you can't get your ring off or if your wife objects too strenuously to your taking it off, then we suggest that you wear gloves.

DO-IT-YOURSELF, SHERLOCK

Armed with the following facts, let's see if you can solve this mystery:

One J-57 engine installed in an airframe.

A tech order which states, in so many words, that if oil consumption on the above engine exceeds one quart per flying hour it is cause for concern, and if oil consumption reaches two quarts per flying hour it is cause for worry.

Oil consumption data entered in the DD Form 781:

Flight #1	-	2:45 hrs	-	1 qt
Flight #2	-	1:50 hrs	-	4 qt
Flight #3	-	4:10 hrs	-	4 qt
Flight #4	-	2:10 hrs	-	4 qt

On Flight #5 the pilot noticed fluctuating oil pressure at altitude and made a write-up in the DD Form 781A. This write-up was subsequently cleared as "Ground Check O.K."

On Flight #6 the aircraft violently impacted with the ground resulting in its total destruction due to materiel failure of the engine from an undetermined cause.

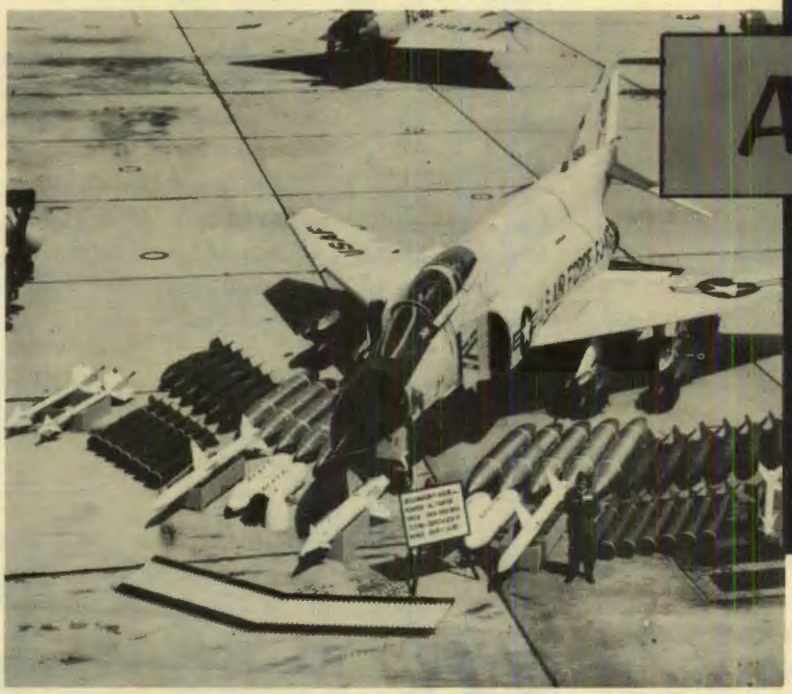
Lean back and mull this over in your mind a bit... you get two seconds. Now, does a small flicker of understanding suddenly blossom forth into a white-hot cauldron of comprehension? No? Well then you must have been the crew chief.

ROCKING CHAIR

And then there was the pilot who wound up flat on his back on the final approach in a U-3. The back of his seat came loose and he went with it. He forgot to release the control column and the nose of the aircraft shot up sharply. When he released the controls the bird dipped the other way. After several gyrations the pilot got the aircraft under control, moved to the right seat and landed without further difficulty. Investigators found that the bolt holes in the seat had enlarged and the nut worked off the bolt. Looks as if the Blue Canoers will have to start looking a little closer during preflights.

LOW POWER

RAPCON controllers frequently request pilots to reply low power rather than normal on their transponders. The primary reason being that the low power display on the surveillance scope is about one-fourth the size of the normal return. This reduces the space that any one return occupies on the radar scope, and is particularly desirable when there are numerous transponder returns being displayed at any one time.



A Glimpse of Phanto

BY IRVING L. BURROWS
EXPERIMENTAL TEST PILOT
McDONNELL AIRCRAFT CORPORATI

IT'S ALWAYS DIFFICULT to adequately describe an airplane without being either too vague, or leaning the other way and presenting a technical qualitative evaluation report. I will hereby make an effort to strike a happy medium between these two extremes.

VITAL STATISTICS. Two engines power the Phantom and two humans crew it. The engines are highly recommended by General Electric – who makes them – and are J-79-8 in variety, with a later -15 version scheduled for the fully modified F-4C's. For you uninitiated, the F-4C is the new designation for the F-110. Among other changes, the -15 engines will incorporate cartridge starting. The Navy version, and the first 29 to be used by the Air Force, has a rear cockpit designed around a radar observer. Although rear seat controls will be installed in all aircraft for the USAF, cockpit appointments of the first 29 will not be tailored to pilot requirements. USAF aircraft # 30 and up will have a completely redesigned rear office that will maintain a full radar capability, and yet allow a rear seat pilot to operate in comfortable, efficient surroundings. This cockpit has been designed with an eye toward IP requirements and instrument flying, as well as tactical work.

The Phantom is as well known for its slow flight capability as it is for top speed performance. The low speed portion of the envelope (at least the lower 20-30 knots of it) is provided by a Boundary Layer Control System. Seventeenth stage compressor air is routed to the wings and blown over the surface from behind the leading edge flaps on the entire span and ahead of the trailing edge flap. The system comes on automatically when flaps are lowered. In other words, no T.E. BLC unless T.E. flaps are full down. The system produces high energy air over lifting and control surfaces.

And speaking of flaps – spectators have been known to exclaim, "The leading edge of the wing is falling off!" when they see a pilot lower the flaps. This is, of course, the normal leading edge flap configuration. It has three separate sections which lower 30°, 60°, and 60°, starting at the inboard section. No intermediate position is available. The trailing edge flaps have three positions, up, half, or full down (60°).

Admittedly, the machine is strange looking with pronounced anhedral on the stabilator, a wing with flat center section and dihedraled tips, a dropped appearance forward of the cockpit and the weird looking leading edge flaps. All have aroused the comment that "this is sure a bent up airplane." Whatever your reaction to the shape, we feel that you'll shortly forget the non-aesthetic characteristics of the Phantom once you've wheeled it around the sky a bit.

The F-4C is, first of all, an honest aircraft. This is perhaps a

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trite description, but in recent years it has been one reserved for T-birds, light planes and gliders. Century series fighter craft, for all their outstanding performance have been notably short in this department – most of them with inherent trouble areas of one sort or another, waiting for the unsuspecting or unthinking troop. The Phantom is long on honesty – all of us who have flown it, feel that it fits nicely into the T-bird category regarding its flying qualities. It is stable from its normal approach speed of 130 KIAS to Vmax at 2.0+ IMN. Let's expand a bit in this area and add a few technical tidbits.

LONGITUDINAL STABILITY. Static and dynamic stability along the pitch axis is positive from stall to Vmax. Without delving into the intricacies of these terms, this is as it should be. The low stabilator, which acts lower than it is, because of negative dihedral, provides this stability. At high angles of attack at least part of that bent down stabilator is below the wing downwash and remains effective. This eliminates any extreme instability due to very low speeds or high angle of attack, high G situations. One G stalls in the clean configuration are preceeded by about 40 knots of increasing buffet warning. The stall itself starts with wing rock followed by a definite roll off in one direction or the other. This will happen at about 130-135 knots with roughly half internal fuel aboard. Increased power and slight forward stick provides an easy recovery. You will have trouble observing an actual stall in the landing configuration due to fairly large roll oscillations about 8 knots above stall. A normal "out of airspeed, now down" type of stall is there and can be seen at 100-110 KIAS if you let the airspeed decay from 125 down just right and fly the airplane very smoothly. You can slip through the wing rock region, experience pre-stall buffet for 2-5 knots, and stall the airplane. Recovery couldn't be better – just ease off on back stick and apply power.

In the supersonic region the airplane actually becomes more stable dynamically – that is, it feels more solid. It does not, however, become glued to straight line flight. More stick movement is required at high mach numbers and stick force per G increases, but you can still wheel and deal very handily in the supersonic region – and will be very gratified to notice the lack of airspeed bleed off.

There is a stability augmentation system available in the Phantom. The early ones will have three axis damping on a single switch. Later birds will have damping for each axis that can be selected individually. You can fly the entire envelope without the stab aug engaged but will find that high q areas (low altitude, high speed) are more comfortable with the pitch damper on.

LATERAL STABILITY. The low speed lateral instability I mentioned is first announced by a decay in lateral control followed by slight oscillatory rolling tendencies. Unless you are purposely exploring this area, this is the time to jab the J-79's a bit or ease the stick forward. Continuing into the wing rock area will get you larger and larger uncontrollable roll oscillations. You will rapidly tire of them – although you can easily make a positive recovery with forward stick or throttle.

Elsewhere in the envelope, lateral stability and control are good. You have as much roll rate as you'll ever want at most speeds and a good deal more at some. Trimmed wings level flight is easily maintained and you don't have to worry about falling off in a turn as soon as you take your mitt off the stick. The lateral por-

tion of the stability augmentation system increases this basic stability without compromising roll rate.

DIRECTIONAL STABILITY. Unless you plan on doing a lot of flying beyond 2.5 (and the standard F-4C doesn't have the horseradishes for this type performance), you won't ever be short in the directional stability department. Damper or not, the airplane likes to fly straight ahead when the wings are level and there are no objectionable snaking or dutch roll tendencies. Adverse yaw is kept to a minimum by the spoiler/aileron system, so even if you don't use rudder, you needn't worry about the ball breaking the end out of the race when you roll into a turn.

POWER. The J-79 is an amazingly responsive engine with acceleration characteristics which are outstanding to say the least. For example, when you are sitting on the runway, a throttle snap from idle to military will give you 100% in from three to five seconds. Throttle snap, incidentally, means just that. Although poor technique and seriously frowned on, throttle snapping either forward or aft is possible in this aircraft without fear of catastrophic results such as a compressor stall or flameout. Engine response to sudden throttle movement can almost be likened to that of a recip. We call it "instant power!" You can select afterburning by moving the throttles forward after putting them outboard. The actual burner light is similar to turning up a large gas jet – no bangs and no incremental lighting – just a smooth rapid increase in power. Burner modulation is available from about 20 to 100% A/B.

An unusual characteristic of the J-79 is called T_2 cut back. This feature automatically starts reducing RPM when CIT drops off to 41° F. As CIT goes down from this point, so does RPM – on a linear schedule. On a standard day at 35,000 ft. indicated military RPM will be in the 96-97% range if the airplane is subsonic. EGT will also drop slightly as RPM decreases from about 98% (T_2 reset). Temperature rise at the compressor face due to acceleration will get you 100% back at about mach 1.3.

The thrust provided by these two engines and the rapid response to throttle movement makes low speed work a pleasure. You can get a 5 or 10 knot airspeed increase on final approach almost instantaneously by a mere nudge on the throttles. Go arounds from either low approaches or touchdowns can be made comfortably at less than MIL power and will cost about 300 lbs. per pattern. Single engine takeoffs and go-arounds are not recommended as normal procedure but are very definitely within the aircraft's capability and should not even be hairy. Of course you should follow the procedures outlined in the handbook. Among other items, it recommends half flaps for a single engine landing since MIL PWR go-arounds with full flaps and one engine are not advisable. The 17th stage air needed for BLC will reduce available thrust – so, half flaps (T.E.) not only produce less drag, but also reduce the amount of BLC required (L.E. only unless T.E. flaps are full down), adding an increment of thrust for go-around purposes.

TACTICAL ABILITY. The F-4C has a relatively low wing loading which is a key factor in maneuverability. This, plus instant power provide good maneuvering at low altitude and air-to-ground work. The basic airplane stability assures a good weapons delivery platform. Targets can be pinpointed fairly easy and held under the pipper with a minimum of effort. Airspeed does not build up too rapid in a dive and you can control it nicely with throttles and speed brakes to permit a pullout which won't drag your oxygen mask off your face.

You will be able to deliver a large variety of ordnance in large quantities. Up to eighteen 750-lb. bombs can be carried, to mention one of the various loads available. Subsonic performance is not seriously degraded by adding all this iron and the airplane still gets off the runway smartly . . . about 3800 ft. with 18 bombs at 60° F. Of course, you can hang on enough external fuel tanks – a 600-gal. centerline and two 370's on the outboard wing stations – to stretch out the range considerably. Neither tanks nor weapons keep you from mounting gear on the inboard wing station or prevent carrying four Sparrow III missiles, semi-submerged, always available in the fuselage.

TAKEOFFS AND LANDINGS. Other articles will undoubtedly be published to expound on techniques for these two phases of flight. I certainly don't intend to cast aspersions at them, since there are many suggestions, hints, detailed instructions, etc., which will help a pilot get a bird off and down safely – be it a J-3 or an F-4C. I plan on making this section short and sweet and hitting just a few of the high points.

Takeoffs are relatively straight forward and require little explanation. You release brakes at about 85% since more power than this on both engines can cause the tires to rotate. Half flaps are

generally used. Although no flap takeoffs are perfectly OK, they will add several hundred feet of ground roll and there is no sense in extending tires any more than necessary. You will need to apply definite back stick to extend the nose strut at about 115-120 and the airplane can then be flown off at 145 KIAS. Gear and flaps should be cleaned up when you're definitely airborne – pitch transients during this operation are negligible.

'Nuff said in this area – now that we've got this machine up, let's get it down. In all probability you will agree that this is the easiest landing aircraft you've ever flown. Power response, low speed controllability and the angle of attack system make it a pure pleasure in the pattern. Touchdowns can be made Navy style with high rates of sink or so soft you won't know you're on until the nose gear touches down. Honestly – the airplane couldn't care less! Grease jobs are great if you're not anxious to stop in minimum distance. They can be made by setting up a flat approach, or by jazzing the power a bit at the flare. These paint 'er on landings are easy, comfortable, acceptable and don't require runway over and above that being used by any other contemporary fighters. But, when the situation requires minimum landing roll, use the handbook procedure. A normal glide slope, proper final approach speed (optimum angle of attack) and a reasonably constant power setting to touchdown will allow you to plant it firmly on the end of the runway. A fairly high rate of descent on touchdown with little or no flare will tend to peel off a few knots instantaneously. Deploying the drag chute and using the brakes properly will do the rest. I might mention here that you won't have any aerodynamic braking in the Phantom since the proper approach speed will leave you with about 115 knots immediately after touchdown, and the nose will fall through rapidly even with the stick on the aft stop.

The angle of attack system is the greatest landing aid since the round wheel – so don't dismiss it as something new and unnecessary. There is one and only one angle of attack which is considered optimum for final approach, regardless of gross weight. This system tells you when you're on it. Contrary to some misconceptions, it will not set you up on the glide path. It gives you proper airspeed only. You must establish your own glide path. Once on glide path, however, you can simultaneously watch the runway and angle of attack indexers which are conveniently mounted on the windshield bow and easily maintain the proper airspeed 'til tires and concrete meet.

So much for the first quick look at the F-4C. You'll be meeting her soon and we know it'll be a pleasant occasion.

Mr. Burrows joined the Navy when he was 17 and served from 1945 to 1946. He then studied physics at Williams College, graduating with a B.A. Degree in 1950. He has since completed some graduate work at St. Louis University.

During a five-year tour in the Air Force, 1950-1955, he flew 100 combat missions in Korea in F-80's and F-86's. He instructed in the F-80 Gunnery School, Instrument Pilot Instructor School, All-Weather Interceptor School and after joining McDonnell, graduated from the USAF Experimental Test Pilot School.

In 1956 Mr. Burrows joined McDonnell Aircraft Corporation as Production Test Pilot. He was promoted to Experimental Test Pilot in 1959 and since then has logged many hours testing the Phantom II.

Chock Talk

THE PROMOTING FORM

The maintenance man has traditionally been resistant to paperwork. Before the manhour accounting and maintenance data collection era, the AFTO Form 781 was just about the only paperwork he had to contend with. Since then, AFM 66-1 has required the average mechanic to become more proficient in the paperwork area, but even then the average maintenance man is primarily concerned with the technical aspects of paper . . . and he is out of his element when it comes to writing something like the USAF Airman Performance Report, AF Form 75.

It is relatively easy to put the X in the blocks on the AF Form 75 . . . it requires no special talent. However, these marks do not tell the whole story of an airman's performance. The normal procedure used by a promotion board is to reduce the Xs in the blocks to a number. This number is then used to compare performance among the individuals being considered for promotion. There would be no problem if the board could then just say, "Every airman with a numerical score of 100 will be promoted." But, in this day of limited promotion quotas, and many deserving airmen, this is unfortunately never the case. What usually happens is that there are 50 airmen with a score of 100, but only five promotion vacancies.

How does the board then decide which five should be promoted?

Naturally, other considerations, such as time in grade, total service, level of responsibilities, enter into deciding the order of priority. Even after all of these have been considered there are often more equally deserving airmen than promotions. The board will usually make their final determination by thoroughly reviewing Section VII, Comments of Reporting Official, of the AF Form 75.

Here's where the maintenance man is normally at a disadvantage. He can't or doesn't express himself well enough to back-up his Xs in the blocks. He is unable to convince the promotion board that the man he is rating truly deserves promotion.

So, let's face facts! Competition is going to get tougher, not easier! More and more selections will be determined by Section VII of the AF Form 75. This is the only thing a promotion board has for an objective evaluation. Members of the board must be able to evaluate a man's performance on what you have written! To help assure that what you have written accurately and honestly describes a man's performance, we recommend that you:

Be specific! Don't generalize. Confirm why you think he's good or bad by citing an example or two.

Be concise! Don't try to make a mountain out of a mole hill. It normally takes very few words to describe a fact.

Get help, when necessary! If you have trouble completing an AF Form 75, ask your supervisor, NCOIC or OIC to give you a hand.

Take your time! Don't be in a hurry to complete an AF Form 75, just to get it done. This is a very important piece of paperwork with long range effects and it should not be forwarded until it is as accurate and objective as you can get it.

After you, as a rating official, have assured yourself that you have objectively evaluated a man's performance, have it reviewed by your OIC or commander to insure that the final, all important aspect of the AF Form 75 has been accomplished . . . that what you say is what you mean, and that anyone reading it can easily determine what you mean!

THUNDERCHIEF MODS

Right after TAC's F-105s found themselves attached to the ramp, project Look Alike was established to correct some of the known safety of flight deficiencies which put them there.

Look Alike was broken into two phases. Phase One, to be accomplished before flight, consists of nine mandatory TCTOs. These are:

*1F-105-670 — A modification of the trailing edge flaps to prevent flap failure and possible split flap conditions.

*1F-105-747,752,704 — These correct tubing and electrical line chafing thruout the aircraft.

*1F-105-711 — Installs a relief valve in the flight control hydraulic return system to relieve return pressure buildup in the system should the transfer valve be blocked when the RAT level is in an intermediate position.

*1F-105-664 — Installs surge relief valves and a redesigned air refueling manifold. This will lift the present IFR restrictions.

*1F-105-685 — Installs a heater shield to the aileron lateral control feel trim actuator to prevent lateral stick bind at high altitude due to moisture freezing.

*1F-105-772 — Installs a stab aug off light to the master caution panel.

*1F-105-B661 — Disconnects the roll and pitch parallel rotary actuators in the F-105B. This is an interim measure until the positive AFCS disconnect feature can be applied to the F-105B.

T.O. 1F-105D-632 installs a positive AFCS disconnect to the F-105D. This grounds out the autopilot when the disconnect lever is used. This will assure positive manual control should the autopilot malfunction. This TCTO will be complied with as kits become available. All production aircraft delivered after 11 Aug 62 have this feature included. Sixteen additional TCTO's are being accomplished during Phase I, while the aircraft are disassembled.

Phase II will serve two purposes - All aircraft will be upgraded to a -25RE, D-357 configuration, and completion of 315 outstanding TCTOs will be expedited.

SANDED HERC

Sand ingested into C-130 gas turbine compressors seriously affects performance and life of both the starter and GTC. Just recently another gas turbine compressor was damaged when it was used to start the aircraft at a sandy airfield. Since sand is so easily sucked into the GTC intake, it is recommended that one engine be left running, when the mission permits, during immediate turn around sorties. The operating engine can then be used to start the other engines. This will prevent damage to the GTC.

BETTER PMEL'S

A review of the Safety Surveys completed at TAC bases this year indicates that more emphasis needs to be placed on calibrating test equipment. This includes all PME, from tire gages to bench test equipment. It is impossible to perform good maintenance with test equipment that is not properly calibrated. Many of our materiel failure accidents result because aircraft hardware was torqued or tested with PME that was out of calibration. In addition, we are prone to develop standby or emergency systems in our aircraft when good quality control of the primary systems would be the most satisfactory and economical cure for a problem. A good starting point for good quality control is with PME. If we use properly calibrated test equipment, we can better furnish reliable aircraft to the operators.

ROUTINE SUPERVISION

There is a constant danger that supervisors will relax control on a so-called routine flight, routine maintenance, routine supply action or routine administrative procedure. Apparently the routine label attached to an operation is a signal for supervisors to become lax and assume that the pick and shovel people will take care of any problems that may arise.

HAZARD HAPPY

There are many hazards present anytime aircraft are moved, serviced, or worked on. Before starting any of these actions, take a good mental picture of the entire operation with the idea of uncovering all possible unsafe traps. Then remove those that can be removed and guard against the rest. As you continue your work, keep a sharp eye out for any hazards you may have overlooked. Like a fighter pilot in combat . . . you can't look around too much. It's usually the one you don't see that gets you.

MAINTENANCE SUPERVISION

A recent major F-100 accident could easily be classified as inevitable. Inevitable because supervision was totally lacking. Without supervision, a routine maintenance action lacked the necessary coordination and became a series of uncontrolled blunders which led to a destroyed aircraft.

It all started with an accumulator change. The hydraulic specialist who removed the accumulator had to disconnect a section of the heat and vent line in order to get at it, and failed to enter this fact as a red cross discrepancy in the AFTO Form 781A.

Another hydraulic specialist made the installation, but failed to connect the heat and vent line. The inspector signed off the red cross for the accumulator change, but failed to notice the disconnected heat and vent line. Neither the specialists nor the inspector checked the T.O. for directions. A crew chief was not assigned to this aircraft to monitor the work or the form entries, so no one was actually in charge of the operation. The inevitable result — one destroyed aircraft.

Had one supervisor been assigned to this maintenance action, he would have saved TAC an aircraft worth thousands of dollars. Even then, the accident could have been avoided if the people involved had followed basic maintenance discipline.

OIL MIX UP

Some unofficial publications have been spreading mixed up information about mixing MIL-L-7808C and 7808D oil. They warn that these oils are not compatable, OCAMA says it isn't so.

According to them, the early 7808C oil made by one company had a high acid number. When this particular oil was mixed with 7808D oil it reacted with the AN703 additive, which 7808D contains to make it more stable in storage, causing the mixture to look cloudy. This cloudy stuff was supposed to clog filters.

To begin with, no one ever found a filter that was clogged by it. Further, the high acid number 7808C oil hasn't been purchased for several years and available stocks should be long gone by now. All MIL-L-7808 oils <u>are</u> interchangeable and can be freely mixed with each other...JUST DON'T MIX THEM WITH PETROLEUM BASE OILS SUCH AS MIL-0-6081 or use them in lube systems designed to use MIL-0-6081!

MHU-12A/M TRAILER BRAKE BROKE

A routine inspection of trailers recently received from the contractor revealed that one trailer did not have any lining on either brake shoe of the left rear wheel. Although we feel this is an isolated case, a simple check can be made to assure all brake linings are intact by dragging the trailer a few inches with the service brakes set. Brakes should be inspected in accordance with Table IV of T.O. 11N-H5019A-2 on any wheel which does not skid while trailer is dragged with brakes set.

THE DARK HAIRED tough old Senior Master Sergeant shook his head and squinted across his desk at the Old Sarge. "You people in the field," he explained, must think we're a bunch of idiots when a can of worms comes thru like that tail hook mod."

The Old Sarge grinned, "Charlie," he said, "you'll have to admit that one was a little mixed up. We hardly got 'em nailed on before a T.O. came down putting the bumper on 'em to keep from choking off the oil vent line. The ink was hardly dry on that T.O. before another came thru adding a guard and cockpit warning light. By the time we got all this figured out, another one comes out having us turn the locking shackle around so we can check to see that it's locking correctly." He fumbled for his pipe and began packing it.

Charlie nodded agreement and rummaged thru his desk drawer before he answered. "We try to stop as much of that as possible. As soon as a T.O. comes in we look it over and check all the references to see that it is reasonable, accurate and understandable." He pulled a folder from the drawer and flipped thru it. "Here," he said, "read this."

The Old Sarge fired up his pipe, then glanced at the open folder, after a moment he read out loud, 'if indicator arm will bottom on housing with 20 pounds finger pressure, the mechanism is not locked.' I see what you mean. How in thunder do they expect a man to measure 20 pounds pressure with his finger? He thought a moment from the center of a blue cloud of smoke. "As I recall, when that reached us it said the mechanism isn't locked if the arm bottoms with around a half inch movement and that it will only move about an eighth inch when locked. Right?"

"Right," Charlie replied, his eyes were starting to water. The pretty young secretary sitting across the room started coughing.

The Old Sarge continued to puff on his pipe, oblivious of the smoke. He said, "You did a good job of clearing that one up, but how come the other confusion on that thing?"

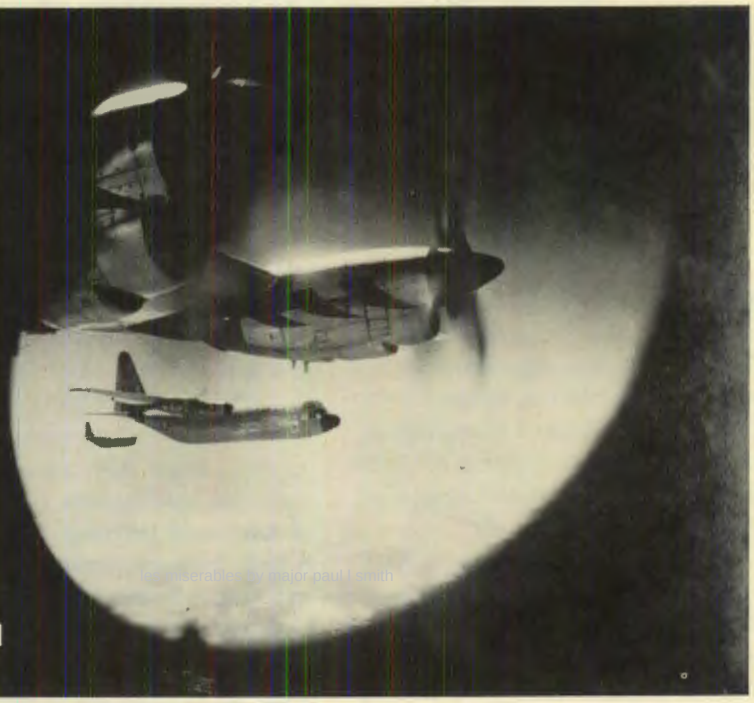
"We may be partly to blame," Charlie reasoned, "we rushed 'em into this and apparently they went so fast they didn't get the bugs out of their design. However, they are supposed to take a kit and make a trial installation before they publish the T.O. and you'd think they'd catch most of the errors." He interrupted himself with a fit of coughing.

When his coughing subsided the Old Sarge growled, "Possibly, but the boat birdmen have been using tail hooks since before we quit using tail skids. You'd think those young designers could have borrowed from this experience and avoided some of the problems."

A commotion near the door caused both sergeants to look that way. Two firemen were peering thru the smoke preparing to unlimber a hose. "Whew," Charlie exclaimed, "I thought they'd never make it. Ah, apparently you're going to have to put that pipe out or get wet. Next time, old friend, how about leaving it behind when you come visiting?"

Les Miserables

By MAJOR PAUL L. SMITH



WE WERE DOWN in North Carolina and Georgia testing the capability of our big birds to land on a postage stamp when the word came. For three days we had been clipping tree tops to get our final down to a minimum, flying troops and equipment into a small Army strip. TAC and -1 requirements had been waived and we were anticipating our next operation onto an unprepared strip of jungle which the Army had bulldozed that week. 3200 feet doesn't seem like much when you have 60 tons of bird, gas and equipment wrapped around you. However, our operations that week had shown us and the visiting big wigs that we could do the job. Not that all went like clock work. On our particular C-130, we had started the week with various minor ills such as an inoperative TACAN, a weak UHF, a stuck TIT, and a clock that kept its own kind of time. After our first landing, the UHF came in loud and strong, the second - a bang up job - put the TACAN back in shape and after the third, the maintenance types were actively seeking out our crew for technical advice. We also had several requests from the Operations people, but we kept on flying anyway.

But, to return to the problem, operating at these weights off the short runways, figuring critical field length became a rather grim business. The normal deficit was around 500 to 1000 feet. We were fortunate in losing no engines on takeoff. We also had been able to stay clear of the afternoon cumulo-bumpus either by flying below them or with the aid of Savannah radar. So — when the word came in that we were on a special mission, no one really felt too badly. How wrong can you be?

We got the clue at about 1830 and after eating, hit the sack at 2100. At 0030 the gong sounded. We got up, ate breakfast and went to briefing. Somewhere along the line, the usual delay cropped up and we didn't get off till 'way after dawn. Man, it got sleepy on the way out to Texas. After a fueling stop, we went into Gray Air Force Base where our housing was ready for us. They had canvassed the area and it wasn't exactly the Berlin Hilton they came up with. We went through baggage detail and got our cots assigned and off to chow.

Having entered the Army of the United States back in WW II, the awful truth began to dawn. Yep, the trays were the same, the line was the same, and the pork chops were the same. Gravy splashed over into the fruit salad and coffee -- I think it was coffee -- splashed into the mashed potatoes. "But, fellas, we gave all this up back in 1947. We're in the Air Force. STRAC? Oh yeah. But that is just for the olive drabbers." Having lost that argument in a hurry, we went back to the tents. The noon heat poured down like a weight. Now I know how a pair of

pants feels going through a steam press job. By four we were like that wilted lettuce we were going to get for supper that night. We knew that a shower was being installed and a water tank was set up for shaving, so when the temperature went back down through 110 degrees we trekked over in our clogs and towels to cool off. Boy oh boy, was that an understatement. The hot water attachment wasn't operating. The world's broad jump record was probably equalled several times in the first few minutes. Then to torture chamber #2, the shaving bit. For we who had enjoyed the comforts of an electric razor for the past many years, the delights of a cold water shave are indescribable. After a trip to the First Aid Station, we dressed for dinner. Two antacid tablets later, someone remembered that he had some cards and so we whiled away our evening, interrupted only by a briefing on the next day's mission. At dawn the next morning, we packed our bags, kissed our quarters goodbye, and rushed off to our aircraft. We got all set and had actually started our engines when we received the first weather delay. After an hour under the wing tips, back in for a second start, another hour delay and more 100 degree shade. On the third try, we were marshalled on the runway before we got the 24-hour stand down. So, baggage detail and back to our quarters. To our surprise, we found that some new tenants had joined the chiggers and wood spiders, so we had a scorpion shakedown. We went through baggage and checklist drill again the next day just to keep our morale up. However, in deference to our rather touchy and costly starters, we refrained from engine starts. Sunday was a day of rest except for some crew upgrading that leaped off into a gathering storm. We only lost two engines that day. The rest of us spent the day as usual, pitching horseshoes until the pits got soaked by the customary 4 PM thunderstorm. Then we occupied ourselves by raising and lowering the sides of the tent during the downpour. In between, we fought the shower detail which now had hot water most of the time. Some enterprising future general found an electric receptacle on a power unit and we, of the slit throat category, voted him most likely to succeed. They even got a barber and appropriately put him in the dispensary. I was of the opinion that his ancestors were Comanches but most voted for Apache origin.

On Monday, we finally got cleared to drive out the following morning. Tuesday at about bed time the C-119s and C-124s started roaring by and since our sound proofing was rather inadequate we went down the drain on crew rest again. We were shaken out at 0230, in a cloud of dust, to get the Army home. Just to keep things at a normal level of complete confusion, weather had prepared thunderstorms and low visibility at our destination. One formation came in one way under IFR and met another on final that had come in VFR. Modesty prevents my repeating a few of the more acid comments but I feel sure that FCC was more than lenient in filing no violations. I realize that all officers are supposed to be taking language training but — such language. The fact that our crew feathered #4 thirty minutes from home was a complete anti-climax.

Throughout the entire maneuver, I kept expecting to hear a loud protest from the troops. It never came. They took the mud and the rain and the heat without complaint. I suppose it comes from previous long TDYs to our own North Field, Philippines, Turkey and other spots that make Gray seem like a summer camp. You have to admire a group that makes do with dirty clothes, poor living conditions and inadequate crew rest the way these people do. They spend more time on the road than they do with their families and fly over the world's roughest terrain and through its worst weather conditions. These guys are the backbone of TAC's worldwide airlift capability. Their proficiency never lags under any conditions no matter how tough the mission or how poor the support. Hats off to the Troop Carrier Boys. I'm glad to be working with them.

INCIDENT'LY

incident'ly

BY COL. JAMES K. JOHNSON

QUITE OFTEN in the Air Force we establish a back-up system to correct a primary system that gives trouble. More often than not, we could get more efficient results by correcting the primary system. This holds true for operating systems, reporting systems and aircraft systems.

To some extent, we have attempted to take the efficient approach with the safety reporting system. We have emphasized and broadened the existing incident reporting system to keep from using abort reports, flight safety officer's reports and similar requirements found necessary by other commands.

We realize that a certain amount of duplication still exists between the incident reports and maintenance reporting systems. Eventually, when the maintenance reporting system is able to break-out and use the information currently reported thru our incident reports, we will be able to simplify our system further. At present, we consider the expanded incident reporting system to be as necessary as the emergency gear extension lanyard is on an F-100.

Other than incident and accident reporting, the Office of Safety here at TAC only requires one other report for flying activities, the OHR.

The OHR covers occurrences that are normally not reported as incidents. It spotlights hazards induced by faulty regulations, or the poor performance of supporting agencies and supporting commands.

As a general rule, an OHR will not induce a great deal of action from the higher levels. Corrective action is usually possible at lower levels . . . and is normally initiated at those levels. If enough reports are received to indicate a trend, then you can expect both interest and action from higher levels.

Unlike the OHR, incident reports receive individual attention and one report on a critical item will generate as much activity as an accident will. We treat them this way because we are firmly convinced that each incident is a major accident which didn't happen because other factors failed to develop or prevented it from happening.

Many of you are putting in a lot of work to insure that we receive an honest input into the incident reporting system. I believe you have a right to know what is being accomplished.

To show you, I will take some examples from our last Summary . . . this is only a partial picture. We really didn't need incident reports to tell us that F-100 drag chutes were a problem; however, they have given us some firm ideas on the extent of the problem and have helped our maintenance people get the machinery in operation to provide a cure. The machinery is slow. We have been advised that an ECP for an electrically actuated system has been approved and five test kits are scheduled to be ready for testing by January with production kits ready by next July. We'll do our best to speed this up. Meanwhile, you must do your best to make the present drag chute system work. It can be done.

In July of this year you reported four F-100 oil system malfunctions as compared to four during the previous quarter. I don't need to mention the seriousness of this type failure. TAC has requested an oil low level warning system. This won't prevent a failure, but it will give you a little more time to get the bird on the ground if you do experience a

failure. It will also take some of the sweat off when the gage fails.

F-100 fuel system failure incident reports have helped get some fail safe main fuel shut off valves into the AMA for testing and evaluation. The modification should be ready for approval by October. Here the action has been a little speedier.

Other incidents have generated corrective action such as the maintenance improvement program for the F-84F drag chute, new turbine buckets for the T-33, the IRAN fix for the F-104 nose gear, and current action to correct F-101 nose gear door link failures.

Excellent reporting has also helped get some concrete action to correct a serious problem with the C-119 engine. Reports spotlighted a totally unacceptable failure rate. Many actions were taken but the most promising was to overhaul the overhaul procedures. The overhaul facility is now using a lot closer criteria to inspect parts for reuse. The rejection rate for these parts has increased and we have already observed a decrease in the number of incidents.

Not all of you are supporting this program. Almost daily we learn of mishaps that occurred without being reported... for example, we learned unofficially of two separate instances where strong fuel fumes were detected in an aircraft series that had experienced two major fatal accidents due to mid-air explosions... we had to ask the unit to submit reports.

We shouldn't have to ask for a report on this sort of thing, since it is to your best interest to pass us the word so we can get action taken for you.

Incidently, you can use the accident/incident summary to analyze your own problem areas.

The summary breaks out the mishaps into various aircraft systems. By comparing the number of incidents you experience with those experienced throughout the command, you can readily tell whether a given problem area affects you alone. If it does, it may be induced by poor procedures in your unit. If you aren't experiencing a problem which is plaguing others, you should be alert for trouble in the area... or you may have a preventative to pass on to others.

feathered u-bird

Feathered U-Bird

The old oil cooler, shown below the new installation.

ALONG WITH the rest of the troops, U-birders are cautioned to start thinking about winter and to prepare for some of the problems ahead. For instance, in very cold weather the bird itself has been known to feather an engine during final approach. This is caused by oil congealing in the unmodified type oil cooler, preventing oil flow and proper cooling. Engine oil temp goes up and pressure goes down. If pressure drops enough, the prop will head toward full high pitch and can actually feather! This will generally happen on a long final when power is low.

Cure is Cessna accessory kit 310-53... reference Cessna installation instruction letter for non-congealing oil cooler dated 9 May 1958. The kit contains an improved oil cooler, adapter plate, new vernatherm valve, necessary gaskets, bits and pieces.

It takes about seven hours to install... but isn't on automatic distribution! If you want 'em, you'll have to ask for 'em. Check with the U3 systems manager.

Letters to the Editor

Dear TAT

In the March issue of ATTACK you printed an article entitled "The Card's No Joker." Our attempts to obtain these FAA cards at the Detroit Air National Guard Base, Inkster, Michigan, have been absolutely futile. In fact, through the FAA region office in Kansas City, we have received information that there were some 40,000 of these cards distributed only to FAA ground stations, and of those 40,000 cards only 4 were used. Therefore, the entire project was canceled.

Utilization may have proven more interesting had these cards been made available to USAF military installations.

Sincerely,

COL. GLENN M. RYNERSON
Mich ANG
Deputy Wing Commander

Dear Col Rynerson

Yes sir! We're glad you brought the subject up. When the ATTACK staff wrote the Joker article, FAA had just initiated this potentially excellent card system and we had the devil's own time finding one. We eventually signed for the one and only card at the local base ops. This should have warned us to follow up on the system . . . but everyone got busy frying other fish and we didn't get around to it until we received your letter. Thanx for reminding us. Our local ops now has 'em on hand, for the taking.

We generated a few phone calls that eventually terminated with the true word from FAA in Washington. Your information is partly correct. About 40,000 cards were distributed. However, each military base operations in the Continental US was sent a supply of the cards . . . and . . . the program will be considered active until about half of these cards are filled in and sent to FAA. The FAA people have checked several military base operations and have found that some are—to put it indelicately—rat holing them. Off hand, we don't know why your section was left off distribution since our map clearly indicates that Detroit is well within the Continental limits.

Dear TAT

I agree wholeheartedly with the statement on page 2 of the August ATTACK that, "the ability to copy a complicated clearance and read it back correctly without hesitation is a direct indication of Pilot Professionalism."

Our Squadron has placed special emphasis on pilot ability to correctly copy and read back clearances and instructions. The format of our flight plan and flight log provides a space to copy clearances and instructions. All pilots are required to record clearances and instructions on the flight log. Our training section transcribes these actual clearances and instructions on a tape recorder. The tape begins with the shorter uncomplicated clearances and progresses to the more complicated clearances and instructions from airfields in the Chicago, Washington, and New York areas. All newly assigned pilots are given the opportunity to copy and read back the clearances and within a short period of time they attain the desired proficiency. At various pilot meetings during the year the taped clearances are played so that each pilot has the opportunity to practice and read back complicated clearances. The amount of time devoted to training is surprisingly short for the results attained.

CAPT ROBERT V. MALANEY
Flying Safety Officer
4432nd ATS, Chanute, AFB

Dear Bob

From where this tongue tied tiger sits, it looks like you have a winner. Anyone else with ideas on the subject?

Dear TAT

The August issue of ATTACK has again, as in the past, continued to provide excellent reading for the personnel assigned to the Flight Surgeon's office of this base, however, the picture of Colonel Holt on page 12 has created some doubt as to whether the HGU-2/P Helmet has been redesignated to a P-4, or could this possibly have been a mistake on your part?

Respectfully,

CAPT. CHARLES SHEPTIN
Flight Medical Officer
4510 USAF Hospital
Luke AFB, Arizona

Dear Chas.

It couldn't possibly have been . . . but it is. Blush! Proper designation is the HGU-2/P. Incidentally, Colonel Holt's mod is strictly verboten until it is blessed with ASD and the USAF Surgeon's approval.

—TAT—

UNIT ACHIEVEMENT AWARD

unit achievement award

Awarded 1 Jan 1962 thru 30 Jun 1962

730TCS, March AFB
728TCS, March AFB
326TCS, Willow Grove NAS, Pa
327TCS, Willow Grove NAS, Pa
335TCS, McGuire AFB
355TCS, Clinton County AFB
702TCS, Memphis MAP
4524CCTS, Nellis AFB
777TCS, Pope AFB
130TCS, Kanawha County, West Va
141TFS, McGuire AFB
164TFS, Mansfield MAP, Ohio
162TFS, Springfield MAP, Ohio
170TFS, Capitol MAP, Ill
481TFS, Cannon AFB
615TFS, England AFB
61TCS, Sewart AFB
62TCS, Sewart AFB
345TCS, Sewart AFB
346TCS, Pope AFB
773TCS, Sewart AFB
96TCS, Wold Chamberlain Fld, Minn
97TCS, Paine Field, Wash
78TCS, Bates Field, Ala
314TCS, McClellan AFB
313TCS, Portland Int'l Aprt., Ore
312TCS, Hamilton AFB
757TCS, Youngstown MAP, Ohio
756TCS, Andrews AFB
304TCS, Richards-Gebaur AFB
303TCS, Richards-Gebaur AFB
305TCS, Tinker AFB
758TCS, Greater Pitt Aprt, Pa
733TCS, Hill AFB
732TCS Grenier MAP, N.H.
729TCS, March AFB
701TCS, Memphis MAP
356TCS, Clinton County AFB
357TCS, Bates Field, Ala
731TCS, L.G. Hanscom Fld, Mass
347TCS, Pope AFB
428TFS, Cannon AFB
429TFS, Cannon AFB
430TFS, Cannon AFB
478TFS, Cannon AFB
8310PS Sqdn, George AFB
431ARS, Biggs AFB
308TFS, Homestead AFB
192TRS, Reno MAP, Nev
16TRS, Shaw AFB
4415CCTS Shaw AFB
772TCS, Sewart AFB
160TRS, Dannelly Field, Ala
50TCS, Sewart AFB
778TCS, Pope AFB
774TCS, Sewart AFB
704TCS, Ellington AFB
705TCS, Ellington AFB
337TCS, Bradley Field, Conn
336TCS, Sewart AFB

Point of View

When he tries to be accommodating,--"He's polishing the apple"
When YOU do it,--"You're using tact."
When he takes time to do things,--"He's dead slow"
When YOU take ages,--"You are deliberate."
When he looks for flaws,--"He's nit picking"
When YOU do,--"You're discriminating."
When the other fellow acts that way,--"He's mean"
When YOU do it,--"It's nerves."
When he's set in his ways,--"He's obstinate"
When YOU are,--"It's just firmness."
When he doesn't like your friends,--"He's prejudiced"
When YOU don't like his,--"You are simply showing good judgment of human nature."

Approach

RECOGNITION

recognition

PILOT OF DISTINCTION

Captain Edgar R. Grischkowsky of the 479th Tactical Fighter Wing, George Air Force Base, California, has been selected as the Tactical Air Command Pilot of Distinction. Captain Grischkowsky was leading a flight of 3 F-104C aircraft on a routine training mission. After flying 20 minutes at 29,000 feet, the exhaust nozzles on his aircraft moved to .5 and the EGT dropped to 280°C. However, the oil pressure remained steady at 34 PSI. He declared an emergency and turned toward the base 60 miles away. He actuated the manual nozzle closure handle and the nozzles closed, but when he stowed the handle the nozzles returned to .5. Captain Grischkowsky lit the afterburner to reduce the full load for landing and the nozzles went beyond full open. The oil low level warning light came on and the oil pressure began to fluctuate and drop. He reduced power to 87% and manually closed the nozzles to .5. He couldn't maintain altitude so set the flaps at takeoff position and established a 240 knots glide. Unable to reach a high key, he landed from a high base leg. The drag chute failed, but by using excellent braking technique, Captain Grischkowsky was able to stop the heavy aircraft safely on the 8000-foot runway. There was no oil left in the engine and it would have failed within minutes. Captain Grischkowsky's rapid appraisal of this emergency and his decisive action saved a valuable combat aircraft.

CREW CHIEF OF THE MONTH

Staff Sergeant James A. Bencino of the 4528th Organizational Maintenance Squadron, Nellis Air Force Base, Nevada has been selected as the Tactical Air Command Crew Chief of the Month for his superior performance as an F-100F crew chief. Sergeant Bencino's professional attitude and technical ability is outstanding. He readily accepts responsibility and completes assignments in an excellent manner. Because of his untiring efforts, his aircraft consistently enjoys a high in-commission rate and low discrepancy rate. During a recent thirty day period his aircraft flew 54 hours while completing 32 scheduled sorties. No other F-100 at Nellis AFB completed as many sorties or flew as many hours during the same period.

MAINTENANCE MAN OF THE MONTH

For his outstanding performance as NCOIC of the Camera Repair Section, 4520th A&E Maintenance Squadron, Nellis Air Force Base, Nevada, Staff Sergeant Keith L. Grove has been selected as the Tactical Air Command Maintenance Man of the Month. Sergeant Grove has an excellent knowledge of photographic equipment maintenance and consistently performs his duties in an outstanding manner. He never hesitates to work overtime when the workload makes it necessary. During the World Congress of Flight, he helped to manufacture TV mounts and install them with cameras in many of the participating aircraft. He has been recognized frequently for his capabilities by other Air Force bases, higher headquarters and civilian organizations. To become better qualified as a supervisor, he has completed seven ECI courses related to the photographic field.

TAC TALLY

A COMPARISON OF TACTICAL AIR COMMAND ORGANIZATIONS

MAJOR ACCIDENT RATE
1 JAN - 31 AUG

TYPE	1962	1961
ALL	14.2	15.6
F-105	42.0	18.7
F-104	42.0	82.2
F-101	19.4	8.3
F-100	19.2	20.6
F-86	78.4	37.5
F-84	17.4	58.7
B-66	0	0
T-39	0	
T-33	4.4	3.9
KB-50	13.2	8.1
C-123	11.7	5.1
C-124	0	0
C-130	0	10.0

AUGUST TALLY
GUARD AND RESERVE

UNIT	MAJOR	MINOR
63 TCW	1	
117 TRW	1	
113 TFW	1	

ACCIDENT FREE
(MAJOR & MINOR)

JET			
ACTIVE	MONTHS		ANG
31 TFW	10	45	123 TRW
4411 CCTW	7	13	107 TFW
CONVENTIONAL			
ACTIVE			RESERVE
4430 ATG	45	69	434 TCW
314 TCW	37	58	94 TCW

AUGUST TALLY
ACTIVE UNITS

UNIT	ACDNTS*	INCDTS
4 TFW		3
12 TFW	1	7
15 TFW		
27 TFW		19
31 TFW		14
354 TFW		10
355 TFW		
388 TFW		
401 TFW	1	16
474 TFW	2	7
479 TFW	3	14
363 TRW		7
4411 CCTW		3
4510 CCTW	2	54
4520 CCTW	1	26
64 TCW		
314 TCW		2
463 TCW		
464 TCW		1
4505 ARW		
1 ACG	3	1

*MAJOR & MINOR

AUGUST was a rough month for TAC regular units. We chalked up 11 major and two minor accidents. The Reserve Forces scored no better, with three majors. Supervision, rather lack of supervision, was a definite factor in four of the regular unit major accidents and in one of the minors.

Of the supervisor factor accidents, one fatal crash was caused by improperly fused bombs . . . no ornament procedures had been established in the unit and we had to relearn some old lessons.

Another aircraft was destroyed when the pilot attempted a takeoff with insufficient runway available. Over-all supervision was poor . . . it was a loose operation and the pilot played it by ear and misjudged.

A student ran into the ground at night while fumbling for the landing light switch. He wasn't ready for the flight, a night check out.

Two of our fighters collided due to a misunderstanding about who was in the lead. The flight leader set this one up by not insuring a proper change over.

A minor accident in this group resulted when a maintenance man miswired a starter during a maintenance check. This man didn't understand the system and his supervisors had not convinced him that he should use the T.O.s.

Discipline is closely related to supervision. We had one fatal accident because a pilot flew a strafing pass 200 feet lower than briefed. Why?

One accident was created when the pilot overreacted to a generator failure. He landed long, hot and heavy. Another pilot ejected after he encountered adverse yaw and lost control. Both needed a better understanding of their equipment and its characteristics.

Of the remaining major accidents, two were due to material failures and two undetermined.


Princess
ANN
AND A PERFECT FORM
AFTO FORM 781
EVER CONSIDER THE IMPORTANCE OF THE FORM 781 ?
OKAY, PRINCESS, GROUND BOYS GOT 'UM IRON BIRD READY FOR BIG MAINTENANCE INSPECTION !
TEEPEE #ONE
HIRSCH 10-62
REMEMBER, PAY SPECIAL ATTENTION TO THE CORRECT ENTRIES ON THE FORMS!
ME RED-HOT SUPERVISOR!
NEVER, NEVER, NEVER USE 'UM FORCE!
AND GET SOME CAPS ON THOSE OPEN HYDRAULIC LIKE SAY 'UM IN T.O. 44H3 !
IRON BIRD ALL SET FOR WILD BLUE YONDER!
GOOD, PARK 'UM ON FLIGHT LINE !
UGH, ME HAVE TO TELL 'UM YOUNG BUCK EVERYTHING!
LET ME SEE THE FORMS, FIRST!
FORMS, FORMS ? OH, ME NOT FINISH FORMS YET !
ME GET 'UM FORMS PRONTO!
LOOK AT THIS! RED CROSS CONDITIONS ARE SIGNED OFF AS CORRECTED, BUT NOT INSPECTED. RED DIAGONAL DISCREPANCIES WITH CORRECTIVE ACTION ACCOMPLISHED, BUT NOT SIGNED OFF IN THE PROPER BLOCK, ALSO TORQUE VALUES ARE NOT ENTERED!
ME RECOMMEND THAT US SUPERVISORS INSURE STRICT COMPLIANCE WITH T.O. 00-20A-1 AND RELATED MAINTENANCE PUBLICATIONS !
ROUTE FILE