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TAC ATTACK

AUGUST 1966



CONFIDENCE ...page 16

HARDISON

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TAC ATTACK

for efficient tactical air power

AUGUST 1966

TACTICAL AIR COMMAND

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THE COVER

Parasailing for confidence
at TAC Sea Survival School,
by artist Stan Hardison

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

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Angle of ATTACK

I N D I C A T O R S

Materiel failure as the cause of a mishap usually leaves most of us a little helpless. Unsafe acts are a little easier to handle. We have no trouble thinking of all sorts of action to cure personnel error problems.

What do you do when material fails? Of course, with the big problems, the big failures, you ask the Depot for a fix. But what can a commander do about the annoying little failures that seem less important?

Use them as indicators!

Incident reports and unsatisfactory reports involving materiel failure often recommend redesign or beef-up, when the failed part has been operated or maintained in a way that was not considered in the original design thinking. Other times, the report will state that a part failed . . . but give no background. How was it installed, inspected, used? The important details of the history of the part prior to the failure are too often omitted. Unless every materiel failure is analyzed for the most basic cause factor involved, valuable indicators of operator and maintenance performance are being lost.

Hydraulic and fuel tubing failures are frequently reported as materiel failures. The factors of critical length, shape, and support are often ignored. A line that vibrated and chafed until it failed is called a material or design deficiency. Often, on deeper investigation, we find that the tubing was a local replacement item. It was either the wrong material, cut to the wrong length, or was braced and clamped incorrectly.

Each materiel failure is a potential indicator. We must take advantage of this potential and take action when we find incorrect or uninformed practices, failure to follow proper procedures in the past, or just plain lack of training on the part of one or more individuals.

The most effective method of eliminating many of our materiel failures is to insure that we have well informed technicians, curious enough and knowledgeable enough to find out why a part failed . . . and try to correct the local cause of the failure.



Homer C. Boles

HOMER C. BOLES, Colonel, USAF
Chief of Safety

...Despite the soft-hued paint job, camouflaged airplanes are as hard as any when you bump into them in the dark!

Let There Be

LIGHT



Reflective tape on ladder, chocks, intake covers, and tail hook streamer increase see-ability of camouflaged Phantom.

An aircraft mechanic fumbles in the half-light and shadows of a poorly lighted hangar. The part he installed... almost by feel... works itself loose after only a few flights, and causes an emergency landing.

The runup crew works with hand-held flashlights on the trim pad while they try to make the fine adjustments on a newly installed engine. They spend eight man-hours instead of the three called for in the book.

The Line Chief is hurrying a part out to the last row of airplanes on the ramp. He has driven around this parking area in his

truck every night for months. He doesn't see the camouflaged airplane until it is too late to turn or stop.

With much of our flying training conducted at night, the people who care for and repair our airplanes are often forced to go thru their paces in lighting conditions far from ideal. There is seldom any real reason for inadequate lighting around a Stateside flying operation. It is often just oversight on the part of supervisors ... and the constant growth of our operations. We frequently find ourselves trying to perform detailed maintenance on our most

modern and complex airmachines in work spaces that were designed for less demanding work on simpler birds.

With this in mind, Brigadier General Frank J. Collins, Commander of the 836th Air Division at MacDill AFB, recently told his Safety Office to conduct a survey of lighting and visibility on the flight line and maintenance work areas.

Mr. Dennis R. Severson, Ground Safety Officer at MacDill, started the survey by measuring the illumination level at several selected points. He knew that AFM 88-15 requires 30 foot-candles for

Photos courtesy

Mr Denny Severson
and

MacDill AFB Photo Lab

visibility in most work areas and 50 foot-candles of illumination for prolonged fine detail work such as engine overhaul in the Propulsion Section.

He found that illumination in the hangars was well below recommended levels. Of the five hangars on base, none reached the 30-foot-candle lighting desired. Most hangar areas averaged 10 to 12. The best reading was only 15 foot-candles. Ramps in front of the hangars turned out to be fairly well lighted but camouflaged aircraft between the hangars, where flood lighting was less effective, were very difficult to see. Also, the refueling truck parking and maintenance area was seriously in need of better lighting for night operations.

When he received Mr. Sever-

son's report, General Collins directed immediate action. Lighting in maintenance shops and hangars would be brought up to standards. Aircraft parking plans were revised.

Mr. Severson next turned his attention to the other part of the problem: We camouflage aircraft to make them more difficult to see. That's fine, but it can cause problems on a busy, and often crowded, aircraft parking ramp. They are difficult to see at night and consequently much easier to bump into. This causes great distress and trauma to the head and shoulders if you're on foot when the collision occurs. Should you ram one of these fancy-painted birds with a pickup truck or a tug, most of the damage will like as not occur to the aircraft. Even with lighting that meets the tech order criteria, reflected highlights from shiny surfaces are missing.

Mr. Severson started to look for a way to make the airplanes more visible... something that would decrease the possibility of men or vehicles colliding with Phantoms on the ramp. But his solution had to affect the birds only when they were on the ground.

Anything that made the airplanes more visible in flight would defeat the purpose of camouflage.

Reflective tape or paint seemed to be the best answer for visibility. The next step was to decide where and how to display it. No one would get excited about hanging extra streamers, placards, or anything else on the aircraft when they were on the ground. The logical answer was to place reflective materials on the 780 equipment that is normally used around an aircraft on the ground, but is not carried with it in flight. Mr. Severson marked some engine intake and exhaust covers, cockpit entrance ladders, wheel chocks, and tail hook streamers with the reflective materials. It worked so well that the people at MacDill are treating all their camouflaged birds to the reflective accessories. All this cost less than \$5.00 per F-4C. The photos here tell the rest of the story.

Other bases and units would do well to look into their lighting and visibility situations if they haven't done so already. A little effort now may save great groups of embarrassment later! ➤



Reflective tape on aircraft accessories aids visibility, but best bet is to move the birds into illuminated areas close to hangars.

So you're being assigned as a Safety Officer.

What kind of a job is it?

What can it do for you?

Will it result in . . .

By Lt Col Paul L. Smith
Chief, Safety Survey Div.

PRESTIGE or PROBLEMS

Why be a Safety Officer? Lt Colonel Paul Smith's views on this often cussed and discussed subject are based on a solid understanding of the problem. He has dedicated many years to the often frustrating but rewarding job of trying to get people to prevent accidents. As Chief of the HQ TAC Safety Survey Division, he has frequent contact with the interrelated team of commander, supervisors, and workers who collectively produce safe mission accomplishment . . . or collectively allow accidents to occur. We're printing his article in the hope that it will challenge others to appreciate the part the Safety Officer plays in the team effort.

For many years I've seen young people come into a safety assignment with apprehension, dissatisfaction, and even revulsion clearly indicated on their faces. I've heard the same old stories time and again. "I don't want this. I want to be in operations." Or . . . "I'll be buried in this job for the rest of my life." Then they start the campaign to get out. This often accomplishes little more than to get the boss on your back because your efforts are not directed to the assignment.

Let's look at the advantages a safety job can offer you. First, from a prestige standpoint you are on the old man's staff. This has definite advantages for a young captain or major. Where else can you be in on everything that goes on? Where else can your voice, your thoughts, and your opinions be put so directly into the wing

effort? More important . . . few other jobs in the wing lead so directly to a rating by a colonel, with indorsement from a division or numbered air force general. That can pay real dividends. And don't forget, Flight Safety is one of the few staff jobs where you continue to fly the unit aircraft. What's better than that? Being identified as a wing staff officer at that stage also pays off in your favor. The earlier in your career you gain staff experience, the better chance you have of moving on up the ladder.

Another very appealing thing about a safety officer position is that you work with every field of endeavor in the wing. Next to the commander, a good safety officer probably knows more of what goes on around a base than anyone. You constantly deal with operations, standardization, maintenance, and

training. You are involved with POL, transportation, personnel, and the medics. You must keep in touch with supply and personal equipment. Quality Control and the civil engineers are your cussing buddies. Communications, facilities, base operations are your constant companions. You deal with messing, housing, and finance from a morale standpoint. The Chaplain, personal affairs, reclamation, and disaster control all tie in closely with your pre-accident plan. Administration furnishes you support in accident investigations. The information officer can do a great deal for you. The list is endless. Your exposure to a list of talent like this is sure to round off a lot of your rough edges. You become a lot more knowledgeable in the overall functioning of the unit.

Accident investigation, albeit a messy business at times, is one of the most challenging parts of the safety business. It is a constant mental exercise. Although investigations often run to long hours and the pay is no more, they are tremendously rewarding. Identifying the cause of an accident so the next man's life may be saved, is a goal few others can match.

Bear in mind, however, that like any other duty, safety pays these rewards only when you expend the effort. It's your job to identify hazards that may jeopard-

ize your unit's mission. After you identify the accident potentials you must find a way to continue the operation by eliminating or reducing the hazard...not by eliminating the mission!

It's your job to make the mission go! You complain about not having enough rank? Friend, you have all the rank you need if you're doing a good job. When you and the DO reach an impasse...after

you've fallen back and regrouped and still feel you're right...go to the boss. If you are right you'll get what you need. However, you only use the boss when you can't work it out any other way. When the colonels realize you have the support you need, they'll go along with any reasonable approach. Once you establish that working relationship your battle's half over.

The other half? It never ends. And you won't want it to end if you're doing the job the way you should. Safety is a real challenge. New ideas, new problems, and new solutions appear constantly. Accept the challenge, do your job, work hard, and keep on working. The prestige will come. With it comes recognition...and promotion.

BETTER MOUSETRAP DEPARTMENT



Vehicles carrying munitions must display a large placard stating that they have either DANGEROUS or EXPLOSIVES material aboard. But the signs become a problem to munitions maintenance and loading people because they must often be changed with every new load. They must also be removed or covered when no munitions are carried on the vehi-

cle. As a result, various schemes have been developed over the years to simplify the use of these signs and reduce the amount of handling required.

Master Sergeant Lloyd W. VanDyne of the 4453 Munitions Maintenance Squadron, Davis-Monthan AFB, has designed a handy set of placards that may be permanently affixed to munitions-

carrying vehicles. By building them with two leaves that can be opened to form the desired word, Sgt VanDyne has eliminated all requirement to remove the placards. We no longer must find a place to store them or worry about changing them...or refurbish them after we've handled them for a couple of months.

Good idea, Sgt VanDyne! ➤

A

2ND LOOK



The F-101 pilot had been airborne for a little over an hour when he noticed his right engine oil pressure start to fluctuate. The needle was moving between 30 and 55 pounds. As he turned toward home the fluctuations continued and the pressure dropped. In the letdown, oil pressure was bouncing down to 20 pounds and just before he shut down the engine on landing it was down to 18. Investigators determined the engine had been using excessive oil and decided to look deeper into it. After the propulsion people got the engine apart they found cracked, worn, and loose parts in the intermediate bearing assembly. The aircraft records showed it had experienced similar fluctuating oil pressure problems two times in the past.

The report called out the primary cause as Material Factor. We'll agree . . . on the first incident of fluctuating oil pressure.

The pilot of another two-engine aircraft heard his right engine make some strange noises as he started into a clover-leaf in trail with his leader. He saw engine RPM roll back to 50 per cent and EGT go to 850 degrees. He immediately pulled the throttle to idle, headed for home, and landed from a single-

engine pattern. This time the investigators found extensive foreign object damage to all stages of the compressor as well as the stators. Primary cause was listed as Miscellaneous Unsafe Conditions . . . FOD of an unknown origin.

A second look at these apparently unrelated incidents reveals a similarity in the reaction they generated . . . and raises questions about our understanding of the purpose . . . the intent . . . of the incident reporting program.

At first glance both incident reports appear to satisfy the requirement to report all failures, mishaps, or unusual occurrences that jeopardize the successful completion of the mission. But they only report that such a situation did occur. There's more to it than that!

The basic . . . and only . . . real purpose in reporting these occurrences is to identify the basic cause. You might call it the original cause. This was not done.

In the oil pressure case, disregarding the fact that it had to happen three times before anyone became alarmed enough to tear into the engine, the investigators were apparently satisfied to learn that

a bearing assembly had come unglued. Their action to preclude a recurrence of the incident was no more than to remove and replace the engine. Nothing in the report indicated any concern over why the machinery failed. No discussion of operating time on the engine . . . no indication that a teardown would be requested to determine the cause of the failure.

The FOD incident smacks of the same kind of approach to accident prevention . . . and at the risk of repeating ourselves we'll say again that accident prevention is the one and only reason we spend the time, man-hours, paper, and ink to report each incident that occurs. The people who investigated this one were satisfied to report that some mysterious, unknown force caused the engine to suddenly tear itself apart. They admit that something foreign passed thru the engine causing the massive damage they describe. But nothing in the report indicates that they attempted to determine what kind of an object it was. And at 13,000 feet, there are only a limited number of possibilities. If a bird went thru the engine there would be unmistakable evidence. The report didn't mention it . . . yea or nay.

The only other possible sources of FOD are the airframe involved and the one in front of it. Again, there is no mention that they inspected the intake and forward area for missing rivets, screws, or other parts. And no hint that they thought to look over the lead aircraft after landing to see if anything had come loose from it. The report blithely omitted the required paragraph describing the action they took to prevent a recurrence . . . most likely because they had not gone far enough into the problem to think of any appropriate action.

This approach to incident reporting accomplishes little more than to tell the world you had a close call. And it implies a fatalism about flying airplanes, on the part of the investigators and maintenance folk involved, that will hardly endear them to the people who fly their airplanes.

These reports say to us . . . "Here are two more times that our pilots faced an unusual and unnecessarily hazardous situation in flight. Thru their skill and knowledge and courage these pilots were able to overcome the problems we presented them, and recover the airplanes for us to fix and fly again."



It started as a flight of three Phantoms for a night weapons delivery training mission . . . and ended as a flight of two.


On his last pass, Lead was at 1000 feet and 450 knots when the aircraft commander saw the left engine fire warning light illuminate. He shut down the affected engine while he used his airspeed to climb to 8000 feet. Other members of the flight reported flames, which rapidly engulfed the left side of the bird, reaching back to the tail section.

As the crew was preparing to eject, the right fire warning light came on and the aircraft commander found he had lost aileron control. Both pilots used the alternate ejection handle and ejected successfully . . . the AC received a compression fracture of the spine from the ejection.

A second look at this accident convinces us again that there is only one way to treat a fire warning

light. This crew used good judgment when they zoomed for altitude at the first indication of trouble. When the presence of a real fire was confirmed for them, they had already taken the most important step toward a safe escape. They had 8000 feet of insurance under them!

False fire warning lights have plagued us for many years . . . in many different birds. And the F-4C is no exception. It has had its share. But as far as we can determine, the Phantom has never been involved in a fire of this nature where the warning light did not operate. This is probably true of many other airplanes as well. That leaves you no choice . . . the fire warning light is telling the truth until proven otherwise. And you can do no better than to react as tho you were on fire . . . because you probably are!



sing out for **SAFETY**

The announcement received the usual acknowledgement. Everyone expected a special safety lecture before the Fourth of July weekend.

As they slouched into the theater on the 27th of June, the men of Sewart AFB were handed a program that looked like a song book! And when all were seated, a group of musicians greeted them with song!

For the next hour they were entertained by some surprisingly professional local talent. Three instrumental groups and a male chorus played and sang their way thru current hit tunes . . . and some oldies . . . ranging from Nashville's foot-tapping country music to some hip-swinging rock 'n roll!

Yes, this was the 839th Air Division's approach to holiday traffic safety. Captain Leonard F. Sokol, Division Director of Safety, had decided he needed something different to impress his accident prevention message on Sewart's population. He knew everyone had seen the movies of crashing autos

and spilled blood many times. And, that dry accident statistics from the podium seldom do more than antagonize the audience. As he cast about for an approach that would leave a pleasant memory of the safety meeting and still carry the message, he discarded one after another of the usual, traditional programs. Then he hit on the idea of a Sing-Out for Safety! The Safety Office would entertain!

Captain Sokol enlisted the aid of Lt Neal Robison and A1C Michael Vaskov, and they made their plans. They rounded up a country and western combo known as the "Haybalers," and a trio named the "Safety Mountaineers" with fiddle, banjo, and guitar. Both groups made up of airmen from the base, enthusiastically took up the challenge when they learned the purpose of the program. Next to volunteer their services were the "Shamrocks," a lively rock 'n roll combo composed of an airman and three teen age dependents.

With the entertainment lined

up, the planners turned to the sing-along portion of their program. Mrs. Mary King, Division Safety Office secretary, set the words of several old favorite songs to safety lyrics . . . and the message started to seep into the program. "Show Me The Way To Go Home" took on a new glow, "Buckle Down Winsockey" became "Buckle Down for Safety" and, of course, "There's a Tavern In The Town" got a new set of words. The new lyrics were printed in the program for audience-participation singing.

Captain Sokol couldn't resist the temptation to give a short talk on holiday driving, and planned it for a break in the singing and entertainment when he expected the audience to be in a receptive mood. But the notes he handed Mrs. King for typing came back in verse, so his pitch took on the atmosphere of the entertainment theme.

By this time, the audience was getting into the spirit of things . . . they were enjoying it! They joined the singing with gusto,



The entire cast backs up Master of Ceremonies Mike Vaskov as he leads the audience in singing.



The Safety Mountaineers... A2C Dan McGraw, A3C Fred Beckett, A3C William Sandusky.



The Haybalers... A1C Larry Heil, SSgt David Brookover, SSgt Harold Bain, TSgt Damon Boggs.



The Shamrocks... Harry Vaughan, A2C Al Ramirez, Steve Diederich, Mark Babson.

whistled and stamped their feet in applause for the entertainers. More songs for group singing followed... some straight and some with a safety message. But the highlight of the program was a cooperative effort that found Airman Vaskov, the Master of Ceremonies, joining the Haybalers in a rollicking rendition of King of the Road... with special lyrics by Lt Robison. You guessed it... the ballad was about two airmen racing their hot-rod cars and their

capture by an Air Policeman. There were chuckles... and guffaws... in the audience, but the message got thru!

And that's what the program was all about. To remind everyone of the hazards of the highway and their responsibility to themselves to drive sanely over the weekend.

When the weekend was over, there were no reports of Sewart Air Force Base personnel involved in traffic accidents. Captain Sokol passed this information to us with

the comment that it was probably "just by sheer luck." We think it was not all luck... we think the people of Sewart were in the right frame of mind over the weekend... a defensive one!

TAC ATTACK salutes Len Sokol, Mary King, Neal Robison, Mike Vaskov, and the people of the 839th Air Division who participated in the program for a refreshing, intelligent, and successful approach to the humanitarian business of saving lives. ➤

We welcome our friend from north of the border back to our pages for another informative look at what's new in TAC's maintenance business. Flight Lieutenant Slaunwhite's explanation of the Phase Inspection concept in the June issue drew so much favorable comment that we went back to him for more... only to find he'd sewed on another stripe. Congratulations, Squadron Leader... we're happy for you!

Squadron Maintenance

... interim reorganization of tactical fighter and reconnaissance squadrons

Why is Tactical Air Command decentralizing the maintenance and support functions in its fighter and reconnaissance units? What organizational changes will be made? What will become of the wing chief of maintenance and the centralized wing maintenance organization?

TAC's wing-oriented structure was developed during a period of tactical planning that was based on the wing as the basic organizational unit. While we were successfully deploying our forces world-wide, we realized significant economies in planning, scheduling, and manpower by combining the energies and resources of three or four squadrons into a single wing maintenance organization.

However, during the period of wing-size thinking, we had occasion to deploy units at squadron strength on several occasions. Because our tactical squadrons at that time consisted primarily of

the operations functions alone, they had to be augmented during periods of deployment with specialists and support personnel. We found ourselves forming a complete squadron on an ad hoc basis for every deployment. Each time the squadron commander was provided a new, different, and untried unit with which to accomplish his mission.

THE REORGANIZATION

In more recent months the increased tempo of operations has challenged planners to develop an even more effective organization for effective mission accomplishment. Their solution has been to reorganize tactical forces into an interim decentralized structure with the squadron as the basic organizational unit.

Tactical aircraft which were assigned to the wing, are being reassigned to the individual squadrons. Where a fighter squadron

by

Squadron Leader Ronald G. Slaunwhite
RCAF,
HQ TAC (DMEMM)

flew airplanes from a pool of wing aircraft in the past, it will now operate the same group of airplanes at all times.

Flight line maintenance activities and personnel are being transferred from the organizational maintenance squadron to the tactical squadron. When crew chiefs and flight line supervisors deploy they will report to the same commander they work for at home.

The munitions squadron will transfer its load teams, with the exception of the standardization and training load team, to the tactical squadrons.

The Phase Inspection function, formerly carried out by Field Maintenance, is being reassigned to the individual tactical squadrons.

Each tactical squadron is being provided a limited maintenance and munitions supervisory capability and the associated administrative capability from appropriate wing resources.

In the reconnaissance units, flare arming and ECM/ELINT Pod loading is being reassigned to tactical squadrons from the wing armament and electronics main-

tenance squadron. Also, appropriate photo interpretation, photo processing, and electronic intelligence capabilities will be provided the tactical squadrons from reconnaissance technical and other wing activities.

Tactical squadrons will also pick up intelligence activities from the wing headquarters, and personal equipment activities from the base equipment management function (EMO).

HOW IT WORKS

Under this interim decentralized posture the squadron maintenance officer will report to the tactical squadron commander whether they are at home, dispersed, or deployed. And the tactical squadron commander will retain the responsibility for flight line maintenance whether he is at home, dispersed, or deployed. In addition, when he is deployed to a site where there is no host chief of maintenance, the squadron commander will be responsible for the management and control of all maintenance resources that are assigned or attached to his unit.

All this will have little effect on the primary responsibilities of the wing chief of maintenance. He will continue to be responsible for the overall management and control of maintenance resources in the wing. While they are at the home station, the tactical squadron maintenance activities will operate under the technical direction and management of the wing chief of maintenance.

When a tactical squadron is deployed to a base where there is an established chief of maintenance, the relationship between the tactical squadron and the chief of maintenance will be worked out in Host/Tenant agreements.

THE RESULTS

By the time this article goes into print, six Tactical Fighter Wings, the 4th, 23rd, 27th, 31st, 354th, and 479th, will have implemented the interim decentralized organization. In addition, the 68th, 431st, and 615th Tactical Fighter Squadrons will be operating with squadron maintenance. Both Tactical Reconnaissance Wings in the command, the 67th and the 363rd, also will have restructured to the new interim organization.

We envisage that this interim reorganization will enhance the efficiency of maintenance functions within deployed and dispersed units . . . from the moment they deploy. Continuity of supervision will not be interrupted. Squadrons will be better able to cope with the unavoidable problems of dislocation. Overall, decentralization will improve the capability of TAC's fighter and reconnaissance squadrons to continue accomplishing their worldwide missions.



When deployed or dispersed, squadron maintenance pays off in smooth transition to new surroundings.



CHOCK TALK

phantom damper

The phlyer was at 25,000 feet when he felt the pitch trim run away nosedown. He turned off the roll function of his Phantom's stab aug and hit the paddle switch. Control returned to normal in a few seconds. Later, while he was on GCA at 5000 feet, gear and flaps down, with 150 knots, he found he could hold the big bird's wings level only by using almost full left stick. This lasted about 20 seconds...coming on slowly and going away slowly. At this time he had stab aug, yaw, and pitch functions engaged.

After he finally got his F-4 on the ground, investigators found the viscous damper overserviced and scored on the inside.

kinked kable

The engine troops were performing an after-maintenance type runup on the F-100. After stabilizing at idle for about two minutes, the rpm started to decrease. They first noticed it at 35 per cent.... it continued to decrease and the troops outside the cockpit noticed smoke coming from the aft section. They shut down the engine.

When they troubleshot the engine, maintenance men found the teleflex cable between the engine control quick-disconnect and the main fuel control linkage was kinked in two places. The kinks caused restricted and intermittent movement of the main fuel control linkage. A thorough and complete system check after maintenance should have identified this trouble before it got to the runup stand.

stitch in time

The F-105 pilot pulled his drag chute handle shortly after touchdown. The chute blossomed briefly and then collapsed. He got the big bird stopped with brakes, but pulled into the hot brake area to be safe. Since his landing speed had been normal and there was no evidence of snagging, inspectors took a long and careful look at the broken riser that they found. The trouble turned out to be in the stitching...the specs call for four-point stitching on the riser, but this one came from the factory with only three-point stitching.

A good close inspection when this new chute was first packed might have turned up this discrepancy and avoided the drag chute failure.

flipped lid

As the C-119 driver raised the gear after takeoff, the astrodome smartly separated from his aircraft.

It only took a little checking for the crew to find that the hatch dogs were not properly seated when the astrodome was last replaced.

brake broke

While taxiing his F-105 to the runway, the pilot felt it shudder as if a tire was flat and noticed pieces of metal flying from the right wheel.

After he stopped and shut down, the maintenance investigators found that the right gear outboard bearing had failed. The bearing races and seals were

damaged and the outer seal had been forced from its seat. Bearing parts had fallen to the ground. Some of the bearing parts showed a trace of grease, but most of the assembly was dry and discolored from heat.

The bearing had been installed on the aircraft for five weeks. There was no record of brake malfunction or drag chute failure in the 30 landings during that period.

The unit concerned established a 25-hour bearing lubrication cycle and has submitted an AFTO Form 22 to change the inspection requirements.

name of the game... murphy

It was one of our fancy new, super-sonic, two engine airplanes, and when the number one engine fire warning light came on the pilot retarded power. The stubborn light remained on until he shut off the engine. On final for landing the light came on again, but it went out again when the pilot actuated the number one engine fuel shut off switch.

Maintenance technicians were unable to find anything wrong with the fire detection system or the engine itself, so a test pilot flew the bird. He found nothing wrong, either. However, the maintenance folks were not satisfied and as they continued to go over the airplane, they found the blanket for number TWO engine was discolored.

It didn't take too long after that to find a hot air leak from the turbine casing flange . . . and crossed wires to the fire detection lights. A fire or overheat condition on number two engine caused the number one warning light to illuminate.

Further investigation showed that the murphy managed to get thru factory inspection and acceptance check because they were looking for circuit continuity...no one had really expected to find a murphy of these proportions in a brand-new bird. But then, if they had anticipated a murphy they would have discovered it, and designed the murph out long before the airplane got into service.

why not preventive action??

The Hundred herder lost his drag chute in flight, but didn't realize it until he landed and failed to get a good chute.

Some sharp-eyed maintenance types found that the drag chute door latching mechanism was stiff and rusty. Corrective action was to replace the latching mechanism and inboard drag chute door.

Effective...but kinda tardy.

TAC ATTACK

aw,c'mon guys

The bird, from another command, was climbing thru FL 310 when the left engine rpm started to roll back. As the IP took over and started to descend back toward home, the left mill gave up altogether. Before he was able to get it restarted, the IP found boost pump circuit breakers popped on the left engine and reset them.

With the bird safely on the ground, maintenance inspectors found loose electrical leads to the circuit breakers. Corrective action was to re-torque the leads and check torque values on all their other birds.

Primary cause was listed as "miscellaneous unsafe conditions in that the leads... loosened for an undetermined cause." Would you believe maintenance factor? Incorrect torque procedures?



SMS Gerald W. Quesnel
Nevada ANG

bench stock

Who said you can't find Bench Stock items almost anywhere you look? The collection shown here turned up inside the left wing assembly of a newly assigned F-101 during an inspection by Quality Control. Sixty pieces of FOD potential...count 'em: One nut, six small screws, and fifty-three large screws still wearing their protective covering over the threads.

Three men spent two full days removing the junk...piece by piece...using mirrors, magnets, midgets, or anything else that might prove successful.

This time, the unidentified troublemaker's carelessness was discovered before it caused control problems by jamming in the linkage.





*Photos courtesy of
Lt Pierce Atkins, AAVS
A2C Wayne Claiborne, 4500ABW*

CONFIDENCE

... parasailing provides realistic sea survival training

From time immemorial man has regarded the sea with fear and awe. In a sense we have tamed the oceans by learning to cross them in ships and aircraft, but men still recoil from the idea of defying a great body of water alone.

As the sea inspires unreasoning fear in some men, it challenges others who have determined to face the sea and defeat it. They have maintained a healthy respect for the sea, for if you are to survive you must be prepared to combat a merciless adversary.

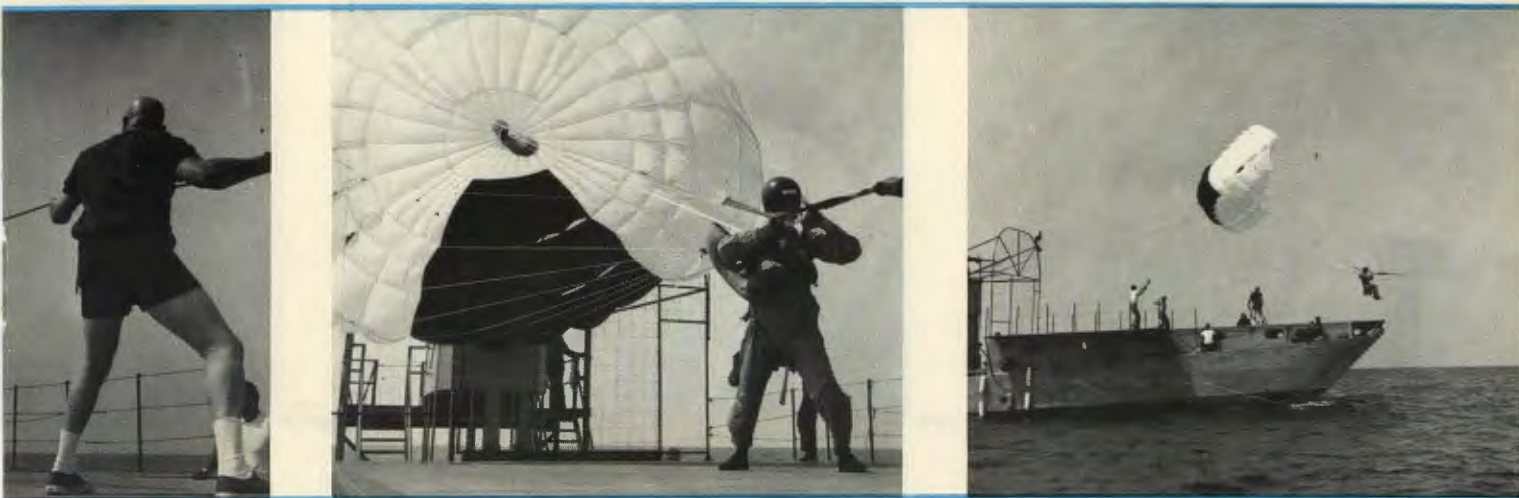
When a native of a Pacific atoll sets sail across miles of ocean he takes with him something which each of us must develop. This quality... which enables him to cross great expanses of open sea in a frail out-rigger... is self-confidence. He knows what to fear and watches out for it. He uses his head.

Confidence is an important quality. It crops up time and again in reports by men who survived the sea. "I reasoned..." "We figured..." "Getting into the raft was orderly..." These are the words of survivors, the ones who knew what they were doing and succeeded!

Adapted from Nav Weps 00-80T-56

"Confidence," says Major Wayne Williams, "is our most important product here at the TAC Sea Survival School."

The founder and commandant of TAC's own private navy, Major Williams leads a dedicated group of men. Their lives have been filled for the past four years with the arduous but rewarding job of teaching men who fly tactical airplanes that the sea is to be respected but not feared. Since the school was founded in 1962, they have trained over 5000 aircrew members from the U. S. Air Force, Navy, Coast Guard, and Army, as well as several foreign countries.



To date, no graduate of the school has failed to be recovered after a successful bailout or ditching. That is an impressive record when you compare it to the fact that from 1958 to 1964, 36 per cent of all over-water bailouts resulted in major or fatal injuries! The primary difference is knowledge . . . and the confidence that comes with knowledge.

The TAC Sea Survival course is designed to impart to the students as much knowledge as possible on every aspect of survival. Students learn about life rafts by getting in them and sitting in them . . . for hours! Miles from shore! They learn about anti-exposure suits by wearing them . . . also for hours. And then later in the course when they may go without the suits, they learn how cold it is without them!

They learn about rescue by watching and participating in helicopter pick-ups. They learn how to approach a landfall by floating in from Chesapeake Bay and landing on the shore. Then they use their supplies and equipment to make camp and survive on land.

Thru lectures, demonstrations, and exercise they learn

about subsistence, signals, safety, swimming, and sea life.

Finally, with all that under their belts, the students are ready for the supreme confidence maneuver . . . parachute water landing. Until this summer, this had to be simulated by jumping from the 14 foot platform on the school's floating classroom. The students were dressed in full flying gear,

helmet, and parachute harness with their survival kit and raft below them. With the converted landing craft moving at five knots, they would step off into the briny to be dragged until they freed themselves from the harness. In the water, they experienced all the turbulence of being dragged by a parachute full of wind. They learned that by correct body posi-



Demonstrations and practice on dry land give important familiarity with equipment.





tioning they could breathe. They learned about panic, and how to combat it with knowledge . . . the knowledge gained in a few short days of classes and demonstrations.

But the jump from the platform was still only simulation. Major Williams and his crew wanted more realism. Nothing can prepare you for water landing in a parachute like the real thing. And they had heard of a technique called parasailing that allows controlled ascent and descent in a parachute. The parasail is essentially a specially designed, ascending parachute that lifts its passenger at the end of a tow rope. Once airborne, you can descend by slowing the tow vehicle . . . and the airspeed of the parasail, or by cutting loose from the tow rope and coming down just as you would in any other parachute.

Master Sergeant Bill Leighton, who is in charge of the parasail operation, learned that the U. S. astronauts were parasailing from a beach in their training, and the system was in use over dry land in several other locations around the country. The problem was to adapt the existing parasail equipment and techniques to the sea survival situation. The solution . . . tow the parachute and para-

chuter off the deck of the converted landing craft . . . looked simple. That is, it did until the school's senior marine engineer, Master Sergeant George Serrand, said he couldn't find a tow cable reel that would work from the launches they planned to use as tow boats.

Undaunted, the determined crew canvassed military and commercial sources. Surely, there was a tow reel in use somewhere

that would work for them. But they were stumped until they came across a set of refueling hose reels from an old KB-50 . . . and a bunch of ingenuity among the marine engineers, who converted them to use on the school's tow boats.

With the equipment ready, the instructors set about establishing a training course for their new technique. They found that they enjoyed the parasailing itself so much that they had to force them-



In simulated parachute water landing, student must free himself while being dragged after jump from 14 foot tower.



selves to come in and write lesson plans and manuals, conduct the tests necessary to establish a formal training procedure, and train the handlers necessary for a safe operation.

They developed a five-man team to handle the launch; a launch controller, two parachute canopy handlers, a reefer-line handler, and boat controller. The team works with split-second communication to get the student off the

“flight deck” and in the air safely.

Once aloft, he dangles in his harness while the tow boat’s forward speed and the wind combine to raise him to about 400 or 500 feet. At a signal from the tow boat, he cuts himself loose for a real parachute landing experience. When he hits the water, the student receives all the training he did from the jump off the tower . . . and then some!

Wind drag, parachute canopy

entanglement, disengagement, are all very real and gauged to the sea and wind conditions at the time. Of course, there is a rescue boat cruising in the splash-down area. It is alongside when the student hits the water. But this is the only concession to training.

The rest is realism. And knowledge! And confidence!

By mid-June of this year students were receiving the parasail training. At first only a few from each class were able to take the ride. But soon Major Williams hopes to have schedules and equipment worked out so every student attending the course may experience the realism of parasail training.

“When a man enters any survival experience,” concludes Major Williams, “his life usually depends only upon himself. His instincts, will, intellect, training, and experience add up to a total which may or may not be enough to meet the requirement. Our aim in the TAC Sea Survival School is to provide enough experience here so that an actual water survival situation will include no unknowns or surprises. We attempt to condition trainees psychologically, as well as physically, by having them meet and overcome all identifiable obstacles to survival.” ➤



Students learn by doing . . . boarding rafts, swimming 300 yards.

As the speeds we travel and the distances we cover increase almost day to day, we find that our navigation computations have become complex to the point that the aircrew member alone is hard put to handle them. The introduction of inertial navigation systems to tactical aircraft in recent years has relieved the crew of much of the mental gymnastics, but unless he fully understands the operation of this new breed of equipment, it has all gone for naught . . .

With this in mind, we asked Mr. Mike Afflerbach of Litton Industries, to clear up some of the most-asked questions about the inertial navigator in the F-4C. The systems in the RF-4C and the F-4D, while similar, are different enough that we will try to follow up with an article on them in the near future.

YOU and the LN-12



by Mike Afflerbach
Guidance and Control Div.
Litton Industries, Inc.

Navigation today is accurately defined as the art of directing a vehicle from one place to another. The definition has not changed since the days of the ancient mariner, but our modes of travel have changed. Man's quest for faster and more accurate modes of travel has forced the art of navigation to give way to the science of navigation.

In defining navigation as a science, you would probably say it is the application of calculations to determine the position of a vehicle and direct it to a predetermined destination. In recent years, improvements in gyroscopes and accelerometers have made it possible to design and fabricate navigation systems that are completely self-contained and require neither visual nor radio links to determine position and direction. This type of navigation system is called an inertial navigator because it makes use of Newton's laws of motion.

The F-4C carries a common type of inertial navigation system called the LN-12. It uses precision, computer-controlled gyroscopes and sensitive accelerometers to sense minute changes in velocity and calculate velocity, direction, and other desirable navigation factors.

Navigating the F-4C in its primary mode of inertial navigation, the LN-12 operates with the Nav Computer (Fig 1) to display present position information to the



Fig # 1 Nav Computer

aircrew continuously during flight. It displays range and bearing information to destination in the front cockpit (Fig 2) and the rear cockpit (Fig 3), computed from the

TAC ATTACK



Fig # 2 HSI

aircraft present position displayed on the Nav Computer control panel. In addition to range and bearing information, the LN-12 supplies magnetic ground track thru the Nav Computer, and ground speed to the radar pilot's instrument panel (Fig 4).



Fig # 4 Gnd Spd Indicator

The LN-12 supplies primary attitude reference information of pitch, roll, and inertial-stabilized magnetic heading to the front cockpit (Fig 5). Steering information is also displayed on the vertical director pointer on the aircraft commander's ADI.

The HSI in the front cockpit receives range, magnetic bearing,



Fig # 3 BDHI

and magnetic ground track being flown from the Nav Computer. It receives command magnetic heading from the Flight Director Computer, and like the ADI, receives inertial-stabilized magnetic heading which is displayed on the compass card.

In the rear cockpit, LN-12 inertial nav information is displayed on the BDHI, radar, and ground speed indicator. The BDHI receives magnetic bearing, magnetic track (Fig 6), and range from the Nav Computer. The radar receives pitch and roll information from the LN-12 and displays it on the radar horizon line.

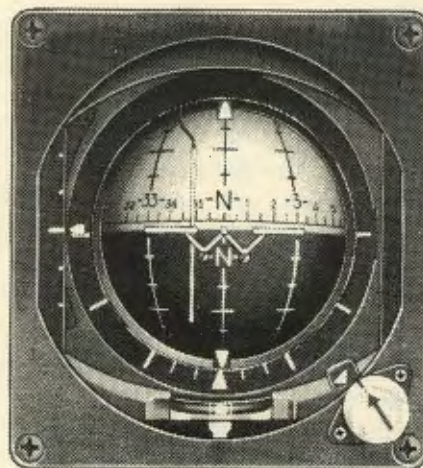


Fig # 5 ADI

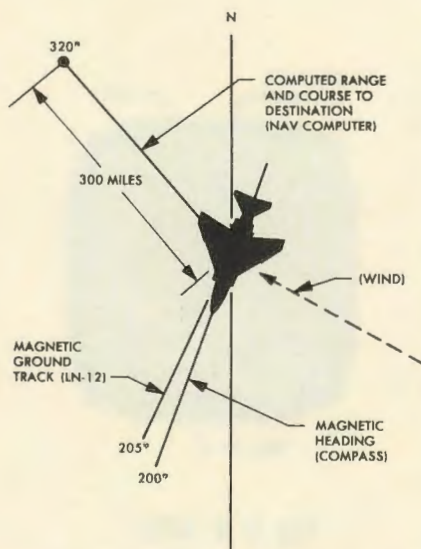


Fig # 6

SYSTEM OPERATION

The F-4C Flight Manual and Technical Orders spell out general alignment and operating procedures, so we will not attempt to repeat them here. Instead we'll cover some points that were omitted . . . or vaguely covered . . . and throw in some bits of information that may be of value to you, the aircrew, or anyone else associated with the LN-12 INS.

- During the LN-12 ALIGN mode the Attitude Reference Bombing Computer (ARBC) is automatically in the Compass mode and the HSI and BDHI compass cards will read magnetic heading directly from the flux valve. ADI azimuth information is not useable. If you have the wings folded, the flux valve reading will not be accurate. A greater magnetic variation will be required to realize a variation synchronization on the Airborne Navigation Computer Control Panel. The

reason for this is that with the wings folded the flux valve, located in the left wing, is oriented about 60° from its proper position. If you use local magnetic variation, gyrocompassing will take longer to complete.

- If the INS OUT indicators stay illuminated when you go from STBY to ALIGN, a power failure has been received. In this case you should cycle the system back to STANDBY and again to ALIGN. If the failure persists, there has been a system malfunction. Should the INS OUT indicator illuminate 60 seconds after you go to ALIGN, a system NO-GO has been received. Cycle the system to STBY (Fig 7) and back to ALIGN. If you



Fig # 7 Inertial Nav Control

get an INS OUT light again in 60 seconds, the system has failed and you should turn it off.

- The ALIGN indicator will start flashing to indicate alignment is complete within five minutes after either a steady green ALIGN indication or extinguishing of the amber HEAT indicator, whichever is last. You can achieve greater accuracy, when time permits, by recycling the mode selector back to STBY momentarily and then to ALIGN. Wait for a flashing align indicator again before switching to NAV.

- At no time should you move the aircraft while the system is in ALIGN or after a Heading Memory

alignment has been performed. If for some reason the aircraft was moved or you received an INERTIAL NO-GO in the Nav mode and it is necessary to re-align, the aircraft should be maintained stationary, the proper coordinates set in, the INS placed in the Gyrocompass mode, and a complete Gyrocompass accomplished before you go to the navigate mode of operation. This is necessary because after entering the NAV mode of operation, aircraft heading is no longer caged. If an INERTIAL NO-GO should occur in the align mode of operation, the Heading Memory is maintained and a Gyrocompass alignment is not necessary. Turn the system to OFF or STBY and back to ALIGN. After obtaining a READY light, go to the NAV mode of operation. Heading Memory information is lost only after the INS is in the Nav Mode.

- After the system has been placed in the Nav mode you should not move the present position counters while the aircraft is stationary. If, during flight, there is a power interruption of about 50 milliseconds or more, an INERTIAL NO-GO should occur. When this happens the system will automatically transfer the Nav Computer to the air data mode of operation. Now the Nav Computer will accomplish dead reckoning navigation if you leave the INS switch in Nav or turn it to OFF. Accuracy of the navigation will depend on the wind and variation that you set in manually. A position fix may be necessary to update the Nav Computer. Cockpit displays, except for ADI attitude information, are the same as in Inertial mode.

- If you desire aircraft attitude instead of dead reckoning navigation, you may accomplish a coarse alignment. However, a

complete alignment cannot be done in flight as gyrocompassing is not possible on the move. To do this, turn INS to STBY and back to ALIGN. Fly as straight and level as possible and switch to NAV between 40 and 50 seconds. At this time the AIR DATA MODE light will not be illuminated indicating that the Nav Computer is in the Inertial Mode. You should disregard navigation information due to faulty alignment of the platform; however, attitude reference is useful.

● At times it may be necessary to compare the LN-12 INS displays to known information to check its accuracy and update it if necessary. If so, the Position Latitude and Longitude readings are the best quantities to use. A simultaneous reading of bearing and range would test the Nav Computer only. The best method of updating is by selecting an identifiable checkpoint along the flight path whose coordinates are accurately known. About one minute prior to checkpoint intercept, you

place the SET/NORMAL/FIX switch in SET and insert the CP coordinates into the present position windows. About 10 seconds prior to intercept, place the switch to FIX and hold. Release the switch directly over the checkpoint. Updating will not correct errors in ground speed but will minimize position errors caused by an erroneous ground speed. You should also remember that you should not attempt to update unless you know the checkpoint coordinates accurately.

MAINTENANCE MAN OF THE MONTH



Staff Sergeant William G. Wizner of the 479th Field Maintenance Squadron, George Air Force Base, California, has been selected to receive the TAC Maintenance Man Safety Award for the month of July 1966. Sergeant Wizner will receive a letter of appreciation from the Commander of Tactical Air Command and an engraved award.

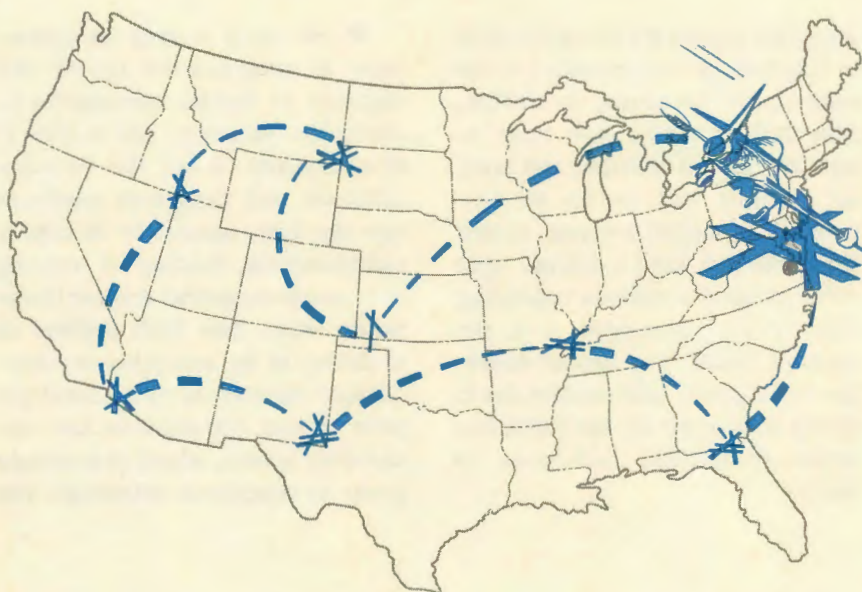
CREW CHIEF OF THE MONTH



Airman First Class Joseph Hopper of the 31st Tactical Fighter Wing, Homestead Air Force Base, Florida, has been selected to receive the TAC Crew Chief Safety Award for the month of July 1966. Airman Hopper will receive a letter of appreciation from the Commander of Tactical Air Command and an engraved award.

Recognition

Surveys Of Places



By Lt Col Paul L. Smith
Chief, Safety Survey Division

On a recent survey trip two of our team were making our usual "arrivals at the airport" (when you fly as seldom as we do, landings are a luxury) in a long suffering T-bird. We landed at four TAC bases and four non-TAC bases. Our reports on the quality of transient maintenance at TAC bases quickly provided a new "look" area for the survey team. Only one non-TAC base gave us any static. That was on replacement of a radio . . . which still didn't work right when we got back in the air! (That base is on Rex's list, but complacency doesn't pay off with him either.)

However, this is what TAC transient maintenance did for us:

Base A - Again replaced radio, ground checked OK (did not air check OK when crew needed it). They also discovered a plenum fire light out, checked and replaced it but left the plenum chamber Dzus fasteners loose!

Base B - Didn't preflight

aircraft (this was a jet base).

Base C - Replaced radio again and finally found the loose wire that was causing all the trouble. To offset this piece of good work they left the cap loose on the oil filler neck . . . and stole my newspaper!

Base D - HOO BOOOOOOY! On the way in at 4500 (on top of a broken cloud deck), we were told to hold because a base jet was lost somewhere in our vicinity. This went on for twenty minutes, during the final portion of which we got a little vocal about fuel consumption at low altitudes. (This did not appear to bother approach control at all.) They then vectored us to a place where we could descend to VFR. Since the missing jet was still missing, we were at a loss as to how they could perform this maneuver so easily when 20 minutes earlier it had been impossible.

We had the field in sight, so canceled Item Fox and switched to

tower. We were just a few seconds too late! The missing jet was on tower frequency. The time spent in the resultant chatter, recriminations, and rebuttals sucked up a bunch more of our rapidly diminishing fuel while we did horizontal rotations on initial (would you believe 360s?) waiting to get a word in to ask for landing instructions.

We had originally planned to land with 450 gallons remaining. We shut down with 150 . . . thirty minutes later than programmed. To add to our good humor, there was no transportation available (on a Friday afternoon, yet!).

As we expected, weather at home base was rotten so we ROned. Would you believe no quarters? Two hours later the much delayed transport finally got us to a downtown motel.

Saturday morning our driver was waiting for us at 7AM. After the 30 terror-filled minutes of return trip, our driver training

program is going to receive a second look on future surveys, also. This boy's favorite game was riding his left front tire on the center line of the highway.

After five cups of coffee, a half pack of weeds, and forty more minutes we presented our flight plan to . . . to . . . ah, to . . .

It took another twenty minutes to find a dispatcher. This took our minds off the first weather briefing we'd received. After he briefed us, the lieutenant said he was a Reserve officer and couldn't sign us off.

We finally staggered out to the aircraft (of course no wheels on a Saturday) where some intrepid

preflighter had carefully uncocked the right gear door uplock. Believe me, we turned on the key, lit the AB, and executed that well known maneuver called "let's get the H. . . out of here."

When the departure controller got his key stuck and transmitted office conversation for over a minute, it was purely anti-climactic!

While all this may sound hilarious, looking back on it, it's really a pretty serious matter. Less than a complete preflight could have caused us problems. The delay on landing at base D could have been really serious. The frustrations we encountered throughout the trip could have affected decisions,

judgment, and actions. In other cases this has produced fatal results.

We understand how short-handed the entire command is. We see it every couple of weeks. However, we visit some bases who are controlling these situations by closer supervision. Maybe we just had one of those weeks.

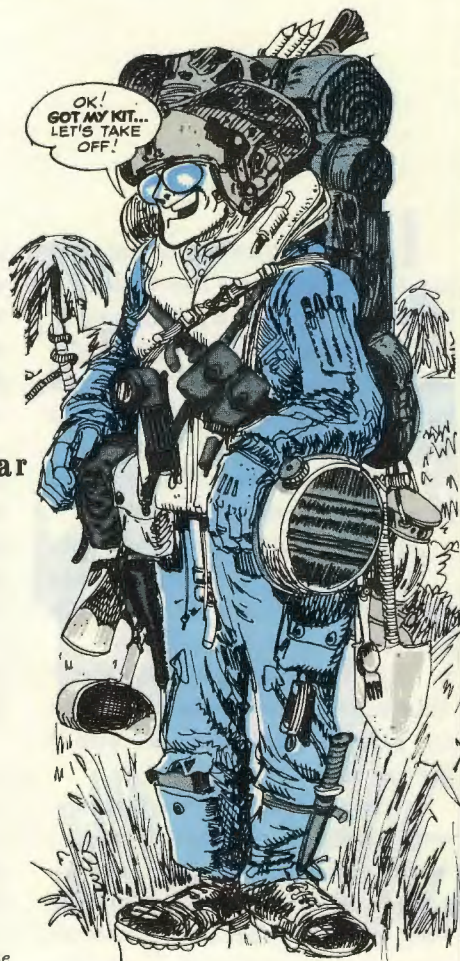
Do expect that we will be looking closely at transient maintenance activities for some time to come!

S O P



HAPPINESS IS. . .

- ... knowing you're prepared to walk home
- ... the quality, not always the quantity, of your gear
- ... knowing how to use what you have
- ... a visit to the PE shop



Courtesy PS Magazine



Daddy's gonna take me for an airplane ride

take me for an airplane ride

By Captain Jack C. Doughty
614TFS, England AFB, La.

I had just stopped in the stag bar for a quick cool one when this lieutenant-type eased up beside me. There was something of a whipped puppy look about him as he pushed his empty glass across for a refill.

"Have you ever been embarrassed?" He looked at me.

I turned and shook my head.

"No? I mean really embarrassed!" He was half talking to himself, so I let him go on.

"Isn't it a miserable feeling?" This time he addressed himself to his glass as the bartender slid it toward him.

"Let me tell you how I got myself into one of those 'I wish I would have gone in with the airplane' experiences. And I never even got it as far as the runway: I'm over here enjoying an all-ex-

pense-paid Turkish vacation. The squadron's been here for a month and I'm feeling that I know as much about the local airdrome and the flying area as wingmen are allowed to know."

He saw my attention was wandering and nudged my arm. "Now, today was the blackest of black days. When I arrived at the squadron I saw I was scheduled for a two-ship range mission with one of the senior types. It looked like a fine mission... my first chance to fire rockets."

"The briefing was normal and I remember Lead saying that prior to taking the active, we'll stop to pick up a load of rockets. Right there I should have asked where the arming area is... like the heading and all... but I didn't. I had that old, 'Daddy is taking me

for an airplane ride,' attitude. I figured I'd just tag along and do what ever he did."

This might become an interesting story, I thought, so I ordered two more and settled down to hear him out.

"Then I hit a snag," he continued. "Lead aborts in the chocks. And he gives me the sign to press on alone. This is what I always dreamed of... a chance to lead a flight even if I'm the only member. In my most authoritative voice, I called for taxi instructions and waved to my contemporaries as I began my short mission."

"As I approached the runway, I spotted several airmen holding rockets and an ohm meter. Being rather clever," he looked up at me. I shook my head and he continued. "I deduced that the arming area must be close at hand. I checked my switches off, opened my canopy all the way, and pulled in facing them."

"When I rolled to a stop, the airman in charge waved his hands to tell me I'm 180 degrees out of phase. I frowned in disgust and began to turn the airplane around."

He paused long enough to take a long swallow from his glass and went on pensively, 'I'm not sure why I frowned and shook my head, but I've seen the old heads do it when they make a mistake and I figured it must be the thing to do.'

"After I turned the airplane around on the narrow taxiway, the airman gave me a small smile of gratitude. At least I was on the right side now! Then he pointed to the C-130 that was in front of my rocket tubes. He waved his arms again and I figured he wanted me to make a 360 so the tubes would point into the clear."

I was beginning to lose track of

his narrative and wondering what the point of it all would be. But he kept doggedly on.

"Since I was fairly close to the edge of the taxiway, I had planned on a right turn to take the active. But the airman signalled me to make a left turn. It didn't take me very long to realize this had been a mistake. In fact it was sickening ... that sinking feeling when the right main went off the concrete. It buried itself almost to the rim in the mud."

He was re-living the whole episode now ... feeling the chagrin. It was almost as if he was punishing himself by telling me his story.

"I was ready to coax that airman into sitting on my lap while I ejected ... when the whole damn squadron taxied past.

"My flight commander gave me one of those 'wait til I get you alone' looks. And the Ops Officer seemed to be saying, 'I'll make you assistant laundry officer at a spot so remote you'll come here for R&R.' Everyone else was snickering."

He suddenly came back to the present, drained his glass, and pushed away from the bar.

"I think I'll go lock myself in my room ... maybe I'll never come out ..."

TACTICAL AIR COMMAND UNIT ACHIEVEMENT AWARD

*The following units have distinguished themselves
with a record of 12 months accident-free flying*

907 TROOP CARRIER GROUP, Clinton County AFB, Ohio

181 TACTICAL FIGHTER GROUP, Hulman Field, Indiana

431 TACTICAL FIGHTER SQUADRON, George AFB, California

184 TACTICAL FIGHTER GROUP, McConnell AFB, Kansas

187 TACTICAL RECONNAISSANCE GROUP, Dannelly Field, Alabama

190 TACTICAL RECONNAISSANCE GROUP, Hutchinson ANG Base, Kansas





Captain Michael J. Dugan, 4409th Combat Crew Training Squadron, Hurlburt Field, Florida, has been selected as a Tactical Air Command Pilot of Distinction.

Captain Dugan was instructor in an A-1E aircraft on a night ordnance delivery training mission. When Captain Dugan's student, in the left seat, advanced power on recovery from the second strafing pass, engine manifold pressure continued to increase and rapidly went to full power. Although the student retarded the throttle to idle position, manifold pressure did not decrease. Captain Dugan, with only limited access to the controls, advised his student to go to full increase rpm to save the engine from overboost, and climb directly toward Eglin AFB, the closest field. When the aircraft arrived over Eglin at 10,000 feet, manifold pressure had decreased to a safe 46 inches and Captain Dugan elected to continue to Hurlburt Field. Over Hurlburt he directed his student to establish a high key for an engine-out pattern and shut down the engine. He then talked the student thru a power-off descent and a perfect dead-stick landing.

Examination after landing revealed a ruptured diaphragm in the manifold pressure regulator.

Captain Dugan's thorough knowledge of procedures and sound judgment permitted him to successfully cope with a serious emergency in a training situation. His highly professional action in saving a valuable Air Force aircraft readily qualify him as a Tactical Air Command Pilot of Distinction.

Tactical Air Command

PILOT OF DISTINCTION

TAC TIPS



INVISIBLE HAZARD

All went smoothly on the night dive bomb mission until Number Two started recovery from his fifth pass. The Phantom was pulling four G as it passed thru level flight when the phlyer felt the big bird shudder violently. The G-meter had recorded an instantaneous seven G! Phlyer and Phantom had apparently passed thru the wake turbulence of the lead aircraft.

When the range officer notified the flight that something had fallen from Number Two's bird, Three moved in to look him over and found part of the left outboard tank and pylon were missing. Three escorted Two back to base and observed another piece separate from the left pylon area during the GCA.

Inspectors found nothing mechanically wrong when they looked over the aircraft on the ground. The unit involved is placing stronger emphasis on correct pattern spacing during night range missions. And they're going to expect flight leaders and range officers to exercise better supervision.

CONTAMINATED CANOE

The Blue Canoe pilot taxied out to takeoff after a fuel servicing stop at a municipal airport. He just about reached the active when number one sputtered and quit. Adding insult to injury, number two jumped on its mounts and threatened to quit before the U-3 made it back to the ramp. The steaming pilot found a large amount of water in his avgas and, belatedly, drained his fuel sumps.

Aero club pilots and admin type flyers who visit non-military airfields do not enjoy the fuel servicing safeguards of Air Force installations. The FAA has no regulatory standards or jurisdiction over fuel service facilities at civil airports.

So... the responsibility rests on the aircrew members. Check for proper fuel type and drain fuel sumps after servicing to be sure you are free of contaminants.

LET 'EM RUN

Adapted from USNASC CROSSFEED

In reviewing the engine failure and shutdown reports received at the Center, we find that aircrews have secured several engines before fully analyzing the cause of the trouble. Generally, the prop-jet drivers are more guilty of too-rapid reaction to apparent power loss than the recip pilots. Tachometer generator failures head the list of unwarranted causes for feathering. We have only one case on record where continued engine operation following tach generator failure resulted in additional engine damage.

The greatest danger in unwarranted engine shutdowns occurs during takeoff. Denying yourself the use of an engine that can produce power during any critical phase of flight could well result in a catastrophe. Our engines are instrumented to give you plenty of information about their condition. You should be able to quickly troubleshoot them when you detect problems. Automatic feathering should not be your first, or only reaction. Analyze each power loss carefully and determine the seriousness of the malfunction. Then, coupled with your requirement for power (sometimes additional power), make your decision. The handbooks give you considerable latitude in securing an engine... the true professional aviator will consider all parameters before he makes his decision.

A story told by Mr. Jay Beesley, a famous Lockheed pilot, is a good example of "let them run and live to tell it." At liftoff from Burbank in an early model Neptune, one propeller ran away beyond limits and shortly thereafter the remaining good engine started violent backfiring. Having no other alternative, Mr. Beesley made a quick turn to another runway. When his Chief Pilot later asked him which engine he had secured, Jay, with skin intact, replied, "Neither." Both engines had experienced serious malfunctions but still produced enough power to bring the aircraft safely back to the field... possibly averting disaster in a heavily populated area.

BALL ON THE JACK

The Hercules driver completed his before take-off check list and was ready to leap off... would you believe lumber? The alert scanner called the flight mechanic on intercom and asked him to look at the flaps because they appeared out of alignment. The pilot held short of the runway and exercised the flaps, but failed to get a full up signal. On extend, he heard a loud popping noise. The flight mechanic reported the right inboard flap was stuck about 30 per cent down and binding on the fuselage. The outboard edge of the flap had extended about 50 per cent. All the other flaps were operating normally.

Maintenance troops found excessive wear on the ball nut assembly caused the right inboard jack screw to fail. When they inspected the remaining jack screws, they found excessive wear on each ball nut assembly.

The sneaky twist to this one is that a single jack screw failure will not engage the asymmetrical flap brake unless the torque tube fails. The flap gage can fool you. But if the crew always scans the flaps before takeoff, you will avoid the embarrassment and discomfort of a takeoff with asymmetrical flaps.

PILOTS PERSONAL LEADS

NAA Service News

At one F-100C activity, some of the pilots formed the habit of tying the personal leads to the seat when they left the airplane. If the next pilot adjusted the seat to a high position, the microphone leads would be pulled out of the electrical connector.

To remedy this condition, the pilots were briefed and requested not to tie the personal leads to the seat. At the same time, the crew chiefs were advised to check for this practice on postflight and untie these leads if the pilots should forget and revert to habit.

If microphone personal leads have been a high replacement item at your activity, this incident may provide a clue.

HERKY FUEL MOD

*CMSgt McMinn
Hq TAC (DMEMLT)*

Problems with the fuel quantity system in the C-130 are as old as the Herky itself. The system is highly accurate... when it's working properly. But when it fails, it fails UNSAFE! Like most, it consists of probes, compensators, and wiring. And the problems occur when leaks develop where the wiring enters the fuel tanks. Water contamination causes the probes and compensators to produce false readings... on the high side. In addition, the water

eventually corrodes both the probes and compensators, causing resistance changes that also result in erroneous readings.

A Class IVB modification that should correct the problem has been approved by TAC. It will raise the compensators one and one-half inches to get them above the water contamination level and replace connectors with an item that is more resistant to corrosion. Also, the wiring will no longer pass thru tank walls. Feed-thru jacks will be used instead. Finally, all wiring will be replaced with a teflon-coated wire.

Release date for the TCTO is set for 28 October 1966, and the depot-level mod will require 400 man-hours for B-model Herks while the Es will require 500 man-hours.

Until the fleet is modified, however, we'll have to stay on the lookout for false fuel readings a little longer. (See an item about this problem in TAC TIPS, July issue.)

BOUNCY

Number Two in a flight of four herded his Hundred onto the runway a little long and a little hot. But the rollout looked normal until the last 3000 feet. He found that he was closing too rapidly on the bird in front of him. After veering to the right to insure clearance around Lead, he started to line up with the runway again. Suddenly, he felt he had lost his brakes and nosewheel steering.

Unable to maintain directional control, he turned off the anti-skid and clamped down pretty hard on the binders. Seven hundred feet from the end of the runway he careened off into the toolies, collapsed the nose gear on the edge of the concrete runup pad, and finally stopped 100 feet into the grass beyond.

Investigators studying the incident decided his nosewheel steering became disengaged when the nose wheel bounced during the heavy braking. Tires, runway, and runup pad all showed evidence of heavy braking... both before and after the herder turned off his anti-skid.

The BAK-9, ready but ignored, did not need to be reset.

FOUL!

The range officer warned the Super Hog driver he was shooting from a very flat dive angle. After landing, the crew chief found a ricochet strike on the vertical stabilizer.

From now on the unit involved will insist that the range officer demand proper patterns... or else.

AN ANALYSIS OF TAC ACCIDENT EXPERIENCE

TAC TALLY

for june 1966

ACCIDENT FREE

ACTIVE	MONTHS		ANG/RES
67 TRW	6	9	140 TFW
479 TFW 4453 CCTW	5	8	122 TFW
4 TFW 401 TFW	4	7	117 TFW
4500 ABW	60	71	349 TCW
4442 CCTW	43	46	403 TCW
516 TCW	22	36	459 TCW

MAJOR ACCIDENT RATE

TYPE	TAC	* ANG	AFRES
ALL	6.9	11.4	5.1
	8.9	13.2	1.7
A-1	0	15.7	
F-84	-	13.3	
	0	15.8	
F-86	80.7	0	
	121.6	31.1	
F-100	11.2	14.8	
	14.4	17.0	
F-101	36.0	83.3	
	0	0	
F-104	19.2		
	23.3		
F-105	23.8	0	
	22.3	46.5	
F-4	7.7		
	10.5		
B-57		0	
		12.3	
C-47	0	0	0
	0	0	0
C-97		0	
		6.6	
C-119		0	5.4
		0	1.3
C-123	0		-
	0		11.0
C-130	1.0		
	1.8		
T-29	0		
	0		
T-33	0		
	0		
T-39	0		
	0		

F-84

MAJOR - Brake failure during taxi, collided with another aircraft. Collapsed gear, extensive skin damage. Crushed nose of other aircraft.

MAJOR - Struck approach light ladder short of overrun. Left gear folded, swerved off runway, collapsed other gear.

F-101

FATAL - Pitch-up during refueling, unable to recover. Drag chute remained with acft until ground impact. Ejection unsuccessful.

MAJOR - Landed hard, bounced, went off side of runway.

F-105

FATAL - Crashed while attempting emergency landing after fuel problems. No ejection.

FATAL - Impacted trees during attack on simulated target. No ejection.

C-123

MINOR - Gear up on third practice landing pattern.

JUNE TALLY

UNIT	MAJOR	MINOR
23 TFW	2	
123 TRW	1	
127 TRW	1	
131 TFW	1	
363 TRW	1	
4410 CCTW		1

* estimated due to non-receipt of ANG rates at press time.

thru june 66

1965

