TAC ATTACK

JUNE 1973

for efficient tactical air power

TAC ATTACK

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Angle of ATTACK

a dash one of do's and don'ts

I am continually amazed to read on almost a daily basis comments from individuals who report the sudden discovery of procedures that have long been established practice. Obviously, we don't do a very good job of passing information down the line or from one weapon system user to another.

It is also frustrating to note that we continue to have accidents that could have been prevented if only the 'old heads' had relayed their experience/expertise on to the younger troops. A good example happened to me. We learned early in the F-4 business that if a MER with a bomb on it were jettisoned, the empty MER would fly over the wing and bash the wing's leading edge. Our squadron recommended that this procedure not be used any more, and eighteen months later I saw the same incident with the same recommendation, same unit. Then two years later the same incident and recommendation again, same unit.

We need to develop a method of perpetuating do's and don'ts procedures, the kind of stuff that just doesn't seem to fit in the Dash One or any of our tactics manuals. Call it a Dash One of Experience if you will.

I've seen something similar to this in units before. A pilot has a particularly hairy mission, or he learns something about the aircraft, or he has developed a technique for doing something that works for him. After the mission, he writes it up in narrative form and puts it in the squadron "experience" book. Then a new jock coming into the outfit reads the material and has the immediate benefit of the experience of those who preceded him.

But we also need to pass the information around to other like equipped units, either through formal routing or through informal channels. And each of us needs to make the effort to have those things which should be in the official publications, put there.

E. HILLDING, Colonel, USAF
Chief of Safety

When the word "spin" rumbles around in the gray matter, it usually produces a picture of a fighter or trainer aircraft gyrating out of control toward terra. Phrases like "Throttles-Idle," "Controls-Neutral," "Stick-Aft," "Rudder-Full Opposite," (or the spin recovery procedure for your aircraft) may quickly follow the vision. But rarely does that same word conjure up a mental picture of a large transport aircraft spinning and floundering toward that same piece of ground. Matter of fact, when you put the word "spin" and C-130 in the same sentence, it creates a picture which makes you want to grit your teeth. As well it should.

While most fighter aircraft are spin-tested, transport aircraft, for obvious reasons, are not. But that, of course, doesn't mean they won't spin. The same aerodynamics apply, the laws of Newton work the same, and the ground comes up at just as fast a clip. In case you're a non-believer, there's an accident in our files that will quickly convert you. It happened several years ago.

The mission was scheduled as a five-hour show-and-tell during which time the Instructor Pilot was to demonstrate such things as normal landings, instrument approaches of all varieties, engine shutdown and airstart procedures, and airwork which included, among other things, an approach to stall series. It was the first ride for the two student pilots and the student flight engineer.

The student pilots met the IP at base operations two hours prior to the scheduled takeoff time for the planned phase of the mission. The IP introduced the students to the various intricacies of flight planning so necessary in airlift operations. A 175 was filed as a stopover with thirty minutes en route to the transition base (IFR), with 3+45 VFR in the transition base local area, then IFR back to home plate. The plan was to shoot a penetration at the transition base to a touch-and-go, cancel IFR and remain in the local traffic pattern for landing demonstrations in various configurations and to demonstrate instrument approach procedures. Since there were two pilot students aboard, the instructor would spend about two hours with each student in the right seat and sometime during the mission would give each student the airwork demonstrations, including the approach to stall series.

When the pilots arrived at the aircraft, the instructor flight engineer and student had completed the preflight. Forty-two thousand pounds of fuel were on board with 7000 pounds in each of the outboard tanks, 6000 pounds in each of the inboard wing tanks, 3000 in each auxillary tank, and 5000 pounds in each external tank. Engine start and taxi were standard and a normal takeoff was made at 1546 local. While inbound on an ILS at the completion of a penetration at the transition base, the IP was notified to

make a low approach only due to some runway construction which had begun. The IP acknowledged, made a low approach to a missed approach, then cancelled his IFR clearance and stated that he would remain VFR in the local area for some airwork. Shortly afterward, the tower passed along a new altimeter setting which the IP acknowledged. The time was 1726 local and was the last radio contact with the aircraft. The aircraft crashed at 1753; all aboard perished.

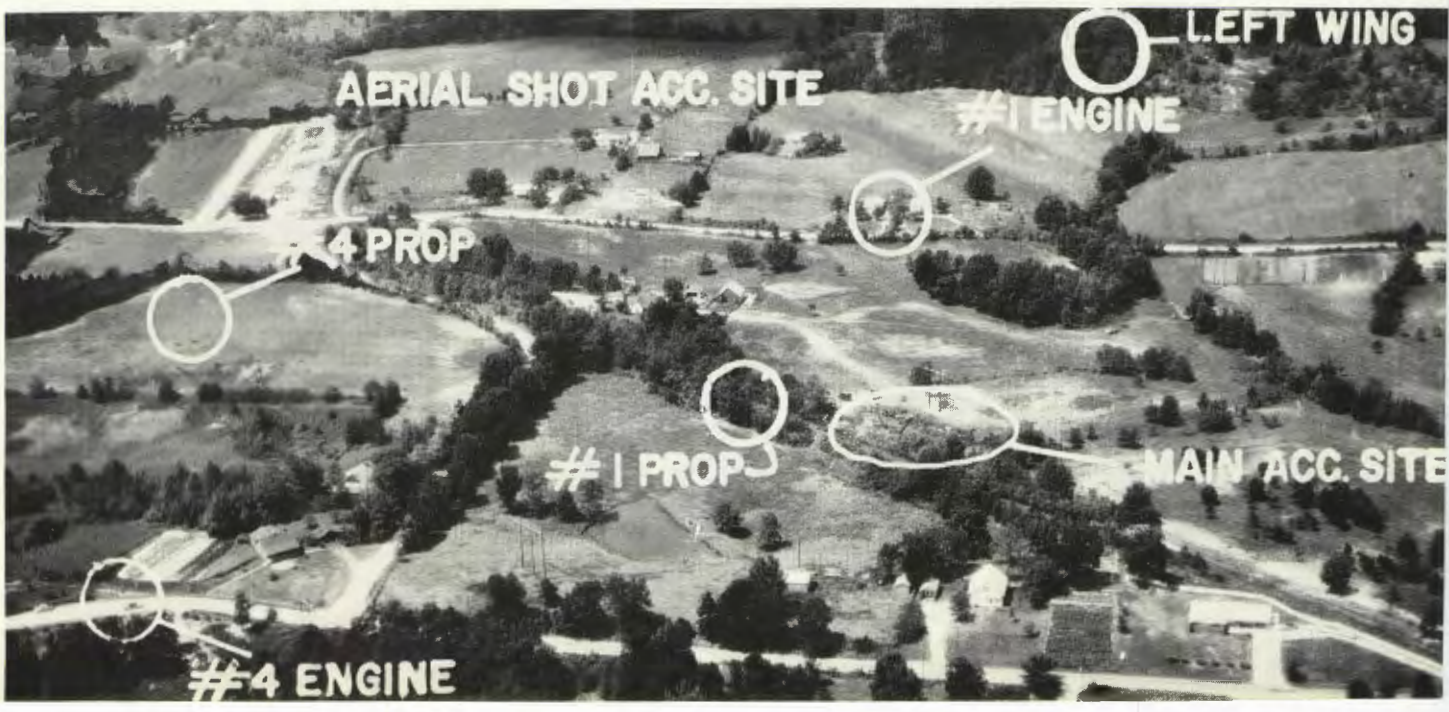
The aircraft impacted in a slightly nose-down attitude with approximately 30 degrees of left bank, in pasture land near an old railway embankment. The angle of bank was determined by measuring the distance between elevator counterweights imbedded in the ground and comparing that to the known installed distance. The aircraft did not make a crater nor were there any terrain scars leading to the impact site. This, and the distribution of pieces at the main impact site, indicated that the machine hit the ground with minimal forward velocity and with a counter-clockwise inertial force.

As noted in the accompanying photograph, pieces of the airplane were scattered about a large area, some as much as 4000 feet from the site of the main wreckage. A thirty-foot section of the left wing outboard of the number one engine was found almost 1800 feet from the main site. Number one engine landed very close to a private residence but caused no injuries to the residents. Number four engine and prop landed somewhat away from the main distribution pattern, which indicated that separation from the airplane occurred under high outward centrifugal forces. The right main gear door was found about 1500 feet from the main site with yellow paint markings on the intake aft portion. The paint matched with that of number one prop and further substantiated the fact that the airplane was in a very unusual attitude when the number one prop separated. Engines two and three were still attached to the airframe when it hit.

It wasn't too hard to figure out that the airplane had broken up in flight but the hows and whys proved a little more elusive to the accident investigation board.

One of the first efforts was to find out if some kind of an inflight fire or explosion had occurred, causing the breakup. Because of a recent C-130 accident due to ruptured bleed air ducting which caused a fire, investigations proceeded in that direction. However, nothing was found to indicate that the bleed air system was operating other than normally. Additionally, the possibility of an inflight fuel fire and explosion caused by a malfunctioning fuel booster pump was investigated. (In each fuel tank on the C-130, a fuel booster pump is immersed in fuel which both cools and lubricates the pump.) The aircraft forms carried a booster pump write-up and in a past accident, an explosion and fire had occurred because of a short in the pump circuitry. An examination of the left wing proved beyond doubt that no explosion or fire had occurred prior to the separation of the wing section. Additionally, the suspected booster pump was found still attached to a portion of the tank with the electrical wiring intact and undamaged by fire. An inflight explosion or fire was ruled out as a possible cause.

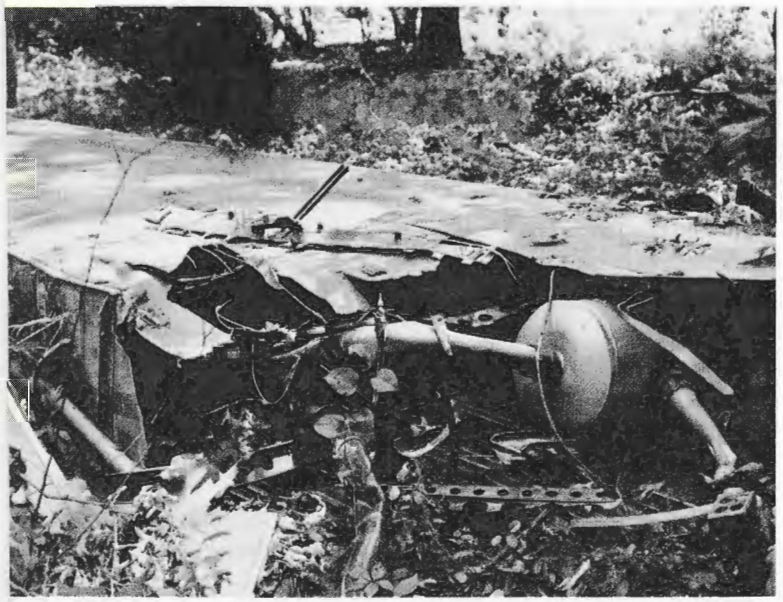
Every effort was made to tag and plot on a wreckage diagram each part of the airplane. Technical experts both from the Air Force and from industry were called in to identify and examine each chunk. In order to determine what happened, it was necessary to find out what kind of stresses had been imposed on the various components which had separated, and to find out what, if anything,



had malfunctioned.

The engines, props, flight control components, instruments, fluid samples, hydraulic system components, and engine mounting brackets (called lord mounts) were sent to the various laboratories for analysis. Results of these tests indicated that no pre-accident malfunctions existed for any system. The lord mounts were found to have broken under an outward lateral force of from one to two Gs. It was obvious that the forces on the airplane necessary to cause the separation of number one engine were exactly opposite to those required to cause number four to tear off. And yet both engines, plus thirty feet of the left wing, had ripped off in flight.

The inspection plates for the thirty-foot section of the



This thirty-foot section of the left wing landed 1800 feet from the site of the main wreckage.

left wing were pulled off and the investigators found that the baffle plates which normally prevent the fuel from sloshing around were forced outward and had sheared loose from their attachments to the lower wing surface and that some of the wing ribs were damaged. This damage was caused prior to separation and was the result of the hydraulic action of fuel pushing against the plates laterally. Without the baffles performing their intended function, the surging fuel had sufficient force to rupture a portion of the lower wing skin near the wing tip, allowing the fuel to spill out. With the integrity of the wing destroyed, it could no longer resist the bending moments for which it was designed and the greater part of the remaining ribs were broken by wing flex. At that point, wing separation was inevitable.

An intense effort was made by the investigation board through local newspapers and radio stations to locate eyewitnesses. A total of twenty-eight people who had witnessed the aircraft were interviewed. Nine of those witnesses were in the immediate area of the crash site and saw the airplane as it fell. Generally, the witnesses agreed that the airplane was high (from 5000 to 10,000 feet), and had a slow forward movement, and either made a tight spiral or spin into the ground. They heard several explosions which were, in all likelihood, the sounds of the aircraft breaking up in flight. Some who had witnessed the aircraft further down the flight path from the crash site reported that the aircraft was unusually low. Still others nearer the site stated that large quantities of black smoke were seen coming from the aircraft prior to breakup.

From these statements, the board concluded that the aircraft was above 5000 feet when it entered the general accident site area and since there was no evidence of inflight fire, the smoke was probably normal engine exhaust.

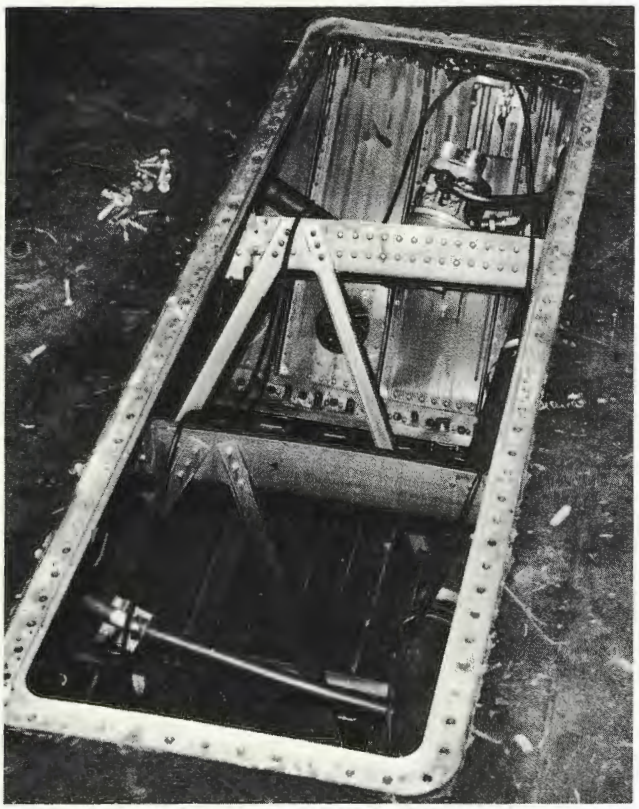
From the data available, including the wreckage diagram, the various structural analyses, and the witness statements, it became quite apparent that the aircraft had entered a spin. The accident board then attempted to determine which separated first, the wing or number one engine. Various industry representatives, including a structural engineer, offered opinions, but no conclusive supporting data could be found endorsing either theory. However, the evidence indicated that the aircraft entered a right spin which caused the damage to the left wing and the lord mounts on the number one engine followed by a separation of the engine, prop, and wing (but not necessarily in that order). Then the aircraft reversed spin directions and began to spin to the left which, in turn, caused number four engine and prop to separate.

Two possible sequences of events leading to the crash are suggested in the report.

The first is: the aircraft entered the area of the accident site at an altitude of between 5000 and 10,000 feet with either the IP demonstrating an approach to stall or the student practicing the maneuver. A full stall developed and the aircraft entered a right spin followed very shortly by separation of number one engine and thirty feet of the left wing. The aircraft then entered a spin to the left (caused by the loss of the left wing, number one engine, and a large power imbalance on the right wing), followed by separation of the number four engine.

The second possible sequence of events is: down the

Number one engine landed very close to a private dwelling.



Damage to the fuel tank baffle plates (left wing) was caused by surging fuel.

flight path from the wreckage site, the aircraft entered a right spin because of control inputs from either the student or the IP. The IP was successful in recovering from the spin; however, the forces on the left wing were sufficient to produce a hydraulic action of the fuel which greatly weakened the integrity of the wing. While the IP was attempting to get the airplane back to the transition field, the fuel pouring out of the fissure at the wing tip further weakened the wing and normal aerodynamic forces were sufficient to cause wing separation followed almost simultaneously by number one engine separation. The fuel streaming out of the wing tip would explain what witnesses referred to as large quantities of black smoke trailing the airplane. The remaining sequence is as stated above.

Regardless of which sequence of events actually occurred, one point remains discouragingly pertinent to both. The IP ALLOWED THE AIRCRAFT TO ENTER A SPIN WHICH EXCEEDED THE STRUCTURAL LIMITATIONS OF THE AIRFRAME.

So, each of us must come away from this accident with two things in mind. The first you know. The C-130 will spin. The second, you must never forget. If the C-130 is allowed to spin, it will probably break up in flight.

And if that happens, mister, YOU'RE DEAD.

by Maj Tim Brady

TAC TIPS

...interest items,

LUCKY !

Luck shouldn't play any major role in flying airplanes. If you're counting on luck to get you through a flight; you're out of luck!

Here's what we mean.

An F-4 took off as number two in a three ship scheduled to hit the tanker and then do some range work. Forty minutes after takeoff, while in the weather, the pilot experienced vertigo. He gave the airplane to the WSO and selected 100 percent oxygen. The pilot felt light-headed and didn't feel he could fly formation. The symptoms lessened, so he continued the mission and accomplished the refueling. After the refueling the pilot started to feel worse again, so the crew descended to 8000 feet and removed their masks. They managed to land, but after landing, the pilot was unable to get out of the airplane for five minutes or so. After the flight, the WSO said he had the same symptoms, and thinks he may have dozed off for a few minutes. Both crewmembers had experienced pain in the knee and thigh areas.

Investigation and anaylsis revealed that both crewmembers had been hypoxic, due to probable contamination of the oxygen system!

Luck? If there's any luck associated with flying, they sure used all theirs up!

Don't rely on luck. If something's wrong, tell somebody and get your plane back on the ground. Don't mess around with luck. It may not be there when you need it !

THE CUT CANOPY CAPER

The right foward lock assembly of the outboard track roller on the rear canopy experienced materiel failure. To put it in the GIB's immortal words, "I can't get the damn canopy open!" Yes, it happened in SEA (you might know it'd be in some hot place), and before our F-4 backseater climbed out into the "cool" 100-degree plus day, they had to cut his canopy open. Nothing else worked. The lock assembly had broken off and lodged between the forward portion of the canopy lock link and the bell crank assembly. Isolated incident? Yes, probably. But quick – where is YOUR canopy breaker located? Know how to use it?

VANISHING HAZARD

The need to immediately notify air traffic control or weather organizations of a pending complaint has surfaced once again. A TAC crew experienced air traffic control problems while operating out of a sister-service base. The crew submitted a hazard report after returning to home plate. However, the departure base was not alerted that a report would be filed. The hazard report went through channels and finally reached the host base – only to find that the tapes had been erased. The end result was that a potential hazard could not be investigated properly because of a lack of evidence. If you find yourself in a similar situation, let the right people know the problem and request they impound the tapes or other pertinent data.

I GOTTA 781 SECRET

(Stolen from ATC Safety)

The "I've Got a Secret" of TV fame consists of a celebrity panel which is provided a few select clues about the guest contestant's profession or some specific achievement in his life, and for one fun-filled half-hour of prime time TV the panel tries to guess what it is. The longer they guess, the more money he wins. What fun!

The pilots (guest contestants) and the maintenance types (celebrity panelists) mimicking their TV counterparts have created a similar type game called "781 Secrets." It's played like this. The pilots write down a few clues, some pertinent, some not (you gotta watch those pilots, they're sneaky!) about an aircraft discrepancy they encountered. The maintenance types then take these clues, decipher them, and try to guess the cause of the discrepancy. Unlike the TV version, the longer it takes maintenance to guess the problem, the more the pilots lose!

We pilots are quick enough to stick a statement in the forms to the effect that this is the second time in two flights that this problem occurred. We then stomp into ops and tell everyone about the "repeat" writeup.

Before we throw any darts though, let's look at our own writeups. Are we playing "781 Secrets?"

mishaps with morals, for the TAC aircrewman

REMEMBER LAST YEAR

Last year six crewmembers were lost in a C-130 accident involving a TAC aircraft TDY to an overseas location. It happened like this.

The crew had completed successive touch and go landings as part of a pilot upgrade training mission. The last landing before the accident was a stop and go but the aircraft was held on the runway due to conflicting traffic, then released for takeoff. The takeoff was then aborted and the aircraft taxied downhill back to the takeoff end of the runway and was cleared for takeoff. Shortly thereafter, while turning out of traffic, the aircraft crashed in the water. What happened?

Immediately after takeoff the pilot retracted the landing gear while the brake assembly was overheated. Once in the well, the brakes were denied adequate cooling air and the resulting additional heat buildup caused the left aft wheel assembly to explode. This damaged the wheel well bulkhead, ruptured several hydraulic lines in the wheel well and cargo compartment, and the escaping hydraulic fluid was ignited by the hot brake or the hot metal from wheel disintegration. Instant inferno and loss of control!

Warm weather is already upon us which makes the brake overheating problems more acute. So if you haven't done so already, drag out the Dash One and review the hot weather procedures with special attention to the bit about the use of brakes. And do one more thing – talk it up! Make sure everyone in your outfit knows that a potential bomb exists in the wheel well if the correct procedures aren't followed.

NAVIGATOR SHOOTS ENGINE

While we make enough mistakes of our own, frequently incident reports from other commands come our way from which we can learn, thanks to their errors. In one such incident a crew responded to a klaxon and during cartridge engine start the pilot noticed the RPM on number four had hung up at 20 percent. At the same time the crew chief on the ground advised there was a fire on number four. The pilot then stopcocked the throttles, ordered the aircraft abandoned, and called on guard freq for crash fire assistance. The fire truck pulling runway monitor duty, which normally responds to such calls, started, stalled, and could not be restarted. Meanwhile, the crew chief was unable to manipulate the aged nozzle of the CB-10 fire extinguisher. The navigator and radar navigator retrieved another fire extinguisher and doused the flame with one shot of CB. Additionally, a crash-rescue vehicle from the flight line station was late in responding and did not cross the perimeter fence because the crash-rescue people "Thought" it was an exercise.

The cause of the engine fire was improper maintenance. The lower cowl that belonged on number two engine had been installed on number four engine sealing off the cartridge exhaust port.

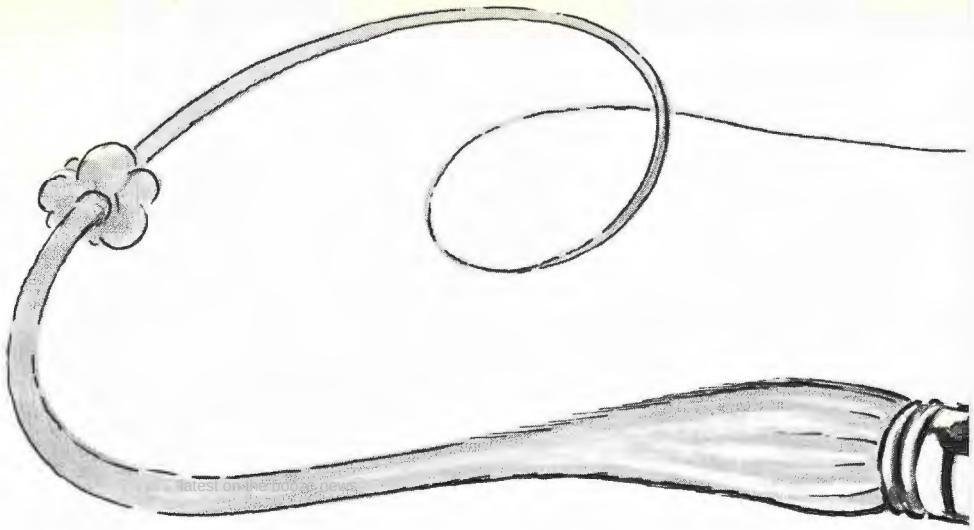
The fire extinguisher that the crew chief attempted to use had an older non-standard nozzle installed which only one man on the base (a fire department maintenance man) knew how to use.

While there were some communication foul-ups involved, the big lesson we need to extract is: Do you know how to use the fire extinguishers on your flight line? Does your crew chief?

YOUR CHOICE

The following damage to a C-130 was cited in an incident report from another command. "Number one fuel cell damaged, five support spars bent and deformed."

The damage was discovered while troubleshooting a malfunction of the number one fuel quantity gauge and was suspected to have been caused by a hard landing. It could probably have been caused by an accumulation of the daily pounding of assault landings but let's assume that it was the single hard landing that caused the damage. If so, the pilot who did the deed didn't record it in the 781 and thereby jeopardized all those who later flew that airplane. It only takes a second to punch off the G meter; it takes a bit longer to record the hard landing in the 781. The choice is now, and has always been, yours. So is the responsibility.



LATEST ON THE BOOZE NEWS

This article was distilled from a report entitled "The Effects of Alcohol on Performance in Simulated Flight." Dr. Leon M. Wise of Heidleberg College, Tiffin, Ohio, conducted the experiments and compiled the report. Our apologies to Dr. Wise for not being able to use the report in its entirety; however, we feel that we have extracted the information that is most pertinent to the goals of the safety program within TAC. Ed.

Numerous studies have been done regarding the effects of alcohol on a variety of flight situations. In general, they agree that the effects are fairly predictable, demonstrable, and rather obvious. Most of these studies, however, are very specific, e.g., the effects on heart action, blood pressure, tracking, etc.

The present study, in contrast, was concerned with TOTAL performance rather than with highly specific responses, such as simple reaction time. The subjects (Ss) were 30 college undergraduates enrolled in a course in physiological psychology. Approximately half of them were females, all were juniors or seniors, half of them had flown commercially as passengers, and none had had any actual flying experience as a pilot or student pilot.

APPARATUS:

A converted C-11C Jet Flight Instrument Trainer was used as the flight simulation vehicle. It is a static trainer which was used at one time to teach F-80 pilots instrument procedures.

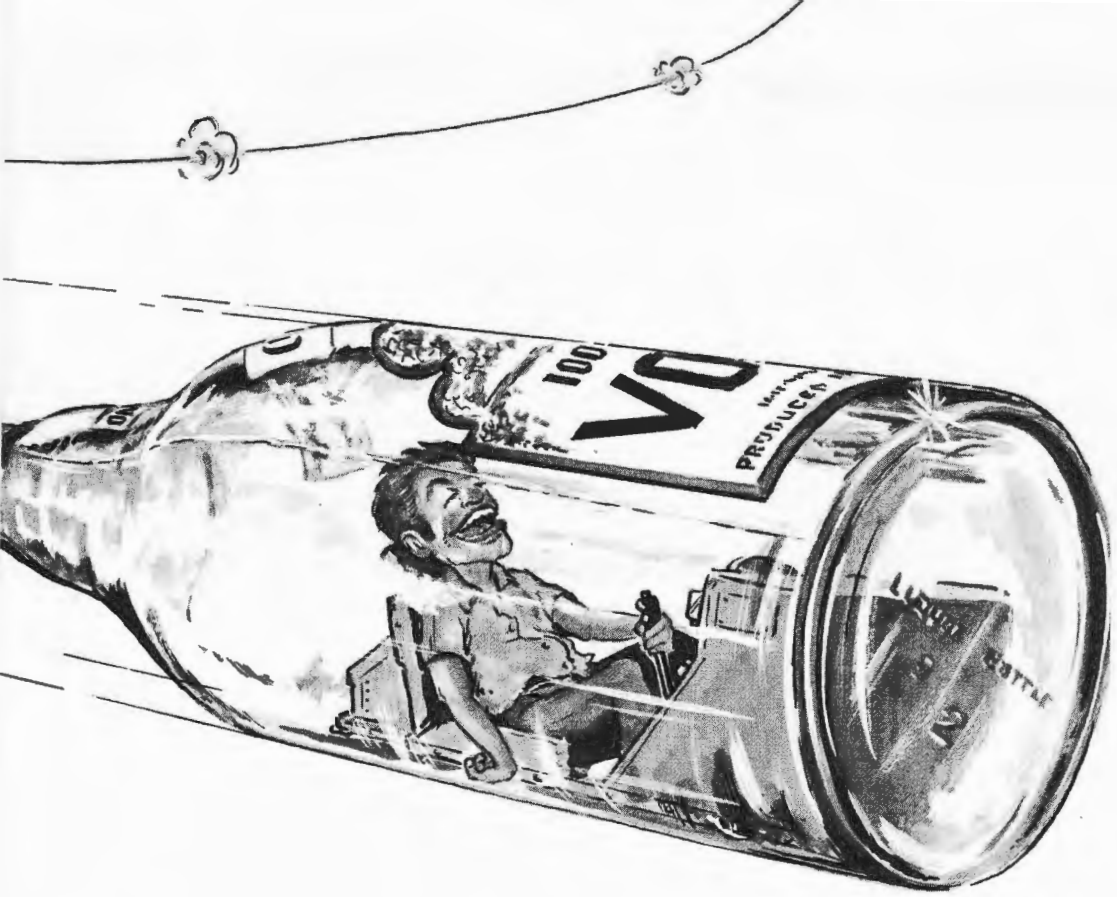
PRETRAINING:

All Ss were gradually taught preflight, in-flight, and post-flight checklist responses as well as the basics of flight. This covered a period of three months during which each S spent six hours sitting in the cockpit familiarizing himself with the functions and locations of gauges, switches, lights, and controls. This was followed by 12 hours of actual "hands-on" simulated flight consisting primarily of takeoffs, climbing, leveling at altitude, and full stop landings. These exercises were repeated again and again and again. Ss soon began to memorize locations and functions and to respond properly.

When the Ss got to the point that they could successfully handle these fully checklisted "flights" — without error — at least three times consecutively, the experiment proper was begun.

PROCEDURE:

Each S was given three ounces of vodka per 120 pounds of body weight; enough to cause noticeable effects but still under the .10% legal limit set by the state of Ohio for determining drunkenness by machine (Breathalyzer, by name). That is, Ss were legally able to drive a motor vehicle in Ohio with this quantity of alcohol ingested. The three ounces of vodka was taken with an equal quantity of ginger ale. (Sound terrible? This one was for science, remember!)



Thirty minutes after ingestion, each S was readied for a "programmed flight." That is, using a specially prepared script, each S was told to takeoff, climb to altitude, maintain altitude and direction for five minutes, descend, and make a full-stop landing. Attempts were made to keep the situation as iconic as possible by introducing static randomly, presenting information to be copied and read back, radioing changes in altitude and direction in-flight, turning on a warning light to be responded to, and, of course, insisting all the while that checklists be scrupulously used as appropriate.

RESULTS AND CONCLUSIONS:

Those Ss who prior to this flight had done very well demonstrated a significant deterioration in performance as compared with their previous flights. They were practically asleep — at least, too relaxed — to the point of becoming careless and not aware of precisely what was happening. What was worse, they appeared not to care! One such S, for example, after the flight, when informed that she had attempted a takeoff with the wing flaps in the full UP position, refused to accept this as fact even though three different people were observing from the outside at the time. She maintained that she WOULDN'T DO SUCH A STUPID THING. But she did!

In testing the Warning Lights as part of the preflight checklist, our "most experienced pilot" accidentally dumped all of his fuel on the runway while waiting for clearance to takeoff!

Numerous checklist items were responded to but out of sequence, a behavior almost totally lacking in previous flights.

One of the Ss was nearing the end of his flight when the Low Fuel Warning light came on (as programmed), signalling 80 gallons remaining and strongly suggesting that the S attempt to locate a runway. He responded calmly, and with considerable confidence dumped those 80 precious gallons at 9000 feet! Still another S, previously errorless, dropped his gear and wing flaps at 19,000 feet. This was followed by an attempt to land at 10,780 feet instead of 780 feet, the field elevation.

There were a number of other "incidents" and "accidents" but the above are sufficient to endorse the thesis of lots of separation between bottle and throttle.

SPO COR

spo corner

THREE STEPS TO DISASTER

Flight control reversal in an A-7D? Yes, it happened. Nearly got airborne too! The sequence of events leading up to this incident could have caused the loss of an A-7D. Had the pilot and aircraft been lost because of these events, the accident board members would still be scratching their heads and the accident board findings would probably be undetermined.

The story goes something like this . . . The aircraft, piloted by an IP, was number two in a flight of two during a student transition ride. At approximately 120 kts during the takeoff roll, and while attempting to hold close chase position, the IP noticed the aircraft swerving badly. He wisely aborted.

What happened? The stick force transducer roll output was reversed. With this condition, initial aileron movement with control augmentation engaged was opposite to that commanded by the pilot, and the ailerons moved to the limit of AFCS authority (ten degrees of deflection) in the wrong direction. If the AFCS disconnect switch had been actuated, flight control response would have been normal. The pilot had limited time on the takeoff roll to analyze the situation and properly aborted.

There are established procedures which should have prevented this and other similar incidents, but which didn't. Three undesired events occurred which allowed the aircraft to start a near disastrous flight.

Step 1. The depot allowed the stick force transducer to leave the depot in a reverse wired condition.

Step 2. The base avionics people didn't correctly check the flight control system after installing the transducer.

Step 3. The pilot didn't accomplish the AFCS check prior to takeoff, which would have shown the roll AFCS actuator to be operating incorrectly.

The lesson to be learned here is as old as aviation. The conclusion is obvious; procedures work only if people follow them!

Maj Bob Lawler

ALIBI-

or, "What can I say, guys, after I say I'm sorry?"

Too often the jocks and the wing or squadron safety officers hear those of us who they USED to call friends say: "Hey, anything I can do for you up there at headquarters, just give a yell." Often our apparent responses to these calls seem useless or an awful long time in coming. In most cases we are sincere and not just trying to come up with some reason to justify our "career broadening" assignment. Sometimes — I think — we actually can and do provide some assistance. Unfortunately, due to the realities of existence at this level, too often our friends' problems are forced into the "HOLD" basket or assigned a lower priority. (The "CRISES" and brush fires have to take precedence.) Of course, we often find out after some additional research that we're dealing with "one man's opinion," insufficient facts/data, or a situation that is influenced by other commands, agencies, or staffs which don't have our clear, understanding, or perhaps, cooperative view. The end result may be a "Sorry about that, George, but I can't get anyone else to listen" —; or: "Nobody else agrees and I need more info" —; or: "They say that's a local problem —," etc.

More often, however, we'll have to request or suggest that the appropriate actions be initiated back at the wing level through the proper channels. In most all cases, the right vehicle is there and relatively easy to use. Examples are the AF Form 847 — to get a change to the Dash One; the AFTO Form 22 for changes to maintenance procedures; a Modification Change Proposal for submission to the TAC CCB (Configuration Control Board); an AF Form 1000, the old AF Suggestion Form; incident reports; EUMRs or, if it's really critical or scary, or nothing else seems to fit — the HR. Note, however, that in too many cases, the HR arrives at TAC practically unworked. If the HR involves a change to the Dash One, or a change to maintenance procedures, or any of the others, parallel paperwork through those other channels should have been accomplished long before the HR got this far. Matter o' fact, the paperwork usually has to start at the unit level before any action can be taken at this level.

By using the correct procedure, you can make sure that your problem receives the proper attention and action. You can back up or follow through on any of these submissions by giving that buddy at headquarters a call and letting him know you have something coming his way or giving him the straight scoop or further facts. This will usually help and certainly won't hurt. Speaking specifically of us Safety Types here in the SPO shop, we'll be happy to hear about any of your submitted proposals and try to support you or track it for you, even if it's not purely a safety related matter.

But again, the best way to get action is to back up any of your calls with the right piece of paper properly submitted. Then maybe we won't have to give you the old alibi routine. (So we'll have more paper to shuffle to justify our existence.)

Maj Burt Miller

GUEST SPO CORNER

SPECIAL, TO LIFE SUPPORT TYPES

by CMSgt Jim Hart
TAC/DOXBL, Life Support

During the past few months, we have noted numerous unsatisfactory findings from various unit life support inspections. Many of these findings were safety oriented and, if not corrected, could have caused the equipment to malfunction or could have resulted in aircrew injury had the crewmember attempted to use the equipment. Here are some examples:

● Improper maintenance, inadequate inspections and failure to use technical data resulted in dirty oxygen masks, improper storage, and improper seating of microphones. Oxygen masks have been found unsafe for a variety of reasons; oxygen masks are being cleaned under unsatisfactory conditions; CRU-60/P oxygen mask connectors are not being leak tested or recorded; . . . Dow-Corning DC-7 or DC-33 silicone grease is not being applied to the "O" ring on CRU-60/P connectors; oxygen mask delivery tubes are not being inspected for holes and cuts.

● Two survival kits inspected had the following discrepancies:

- First aid kit overdue inspection.
- Emergency radio corroded.
- One raft CO_2 cylinder was only finger tight on the raft inlet valve.

● Life support unsatisfactory due to poor management.

● Common deficiencies continue to appear in the maintenance of life support equipment. All items previously identified in cross tell summaries still exist in most units inspected. It becomes apparent that cross tell summaries are not reaching the life support sections or life support supervisors are not taking corrective actions as required.

● Anti-G suits have unauthorized modifications; oral inflators are not attached or pockets not modified; hoses are found deteriorated; spare suits are not being inspected by life support technicians and/or records are not being maintained.

● LRU-6/P rafts were being folded with the floor and spray shield oral inflation valves open. Velcro tape on the shield of the raft was not folded to prevent sticking.

The intent of the preceding is merely to point out that these unsatisfactory conditions do exist and the only people who can correct them are the 922X0s at the working level.

With life support systems becoming more and more sophisticated, it is essential that the 922X0s at all echelons inspect, maintain, and properly service this vital equipment. Additionally, quality control acceptance inspections must be accomplished on equipment inspected by other servicing agencies. To assist in the maintenance and inspection of life support equipment, SAAMA and OCAMA are in the process of developing checklists and work cards to assist the Life Support Technician. However, until the checklists and work cards are published, current technical manuals must be used for inspections.

If we are to insure a safe recovery of the aircrew following an ejection/bailout, or recover the aircrew from a land or sea survival situation or an E/E episode, we must make sure that our aircrews are equipped with the best maintained life support equipment in the Air Force.

TACTICAL AIR COMMAND

AIRCREWMEN of DISTINCTION

1Lt Slavin

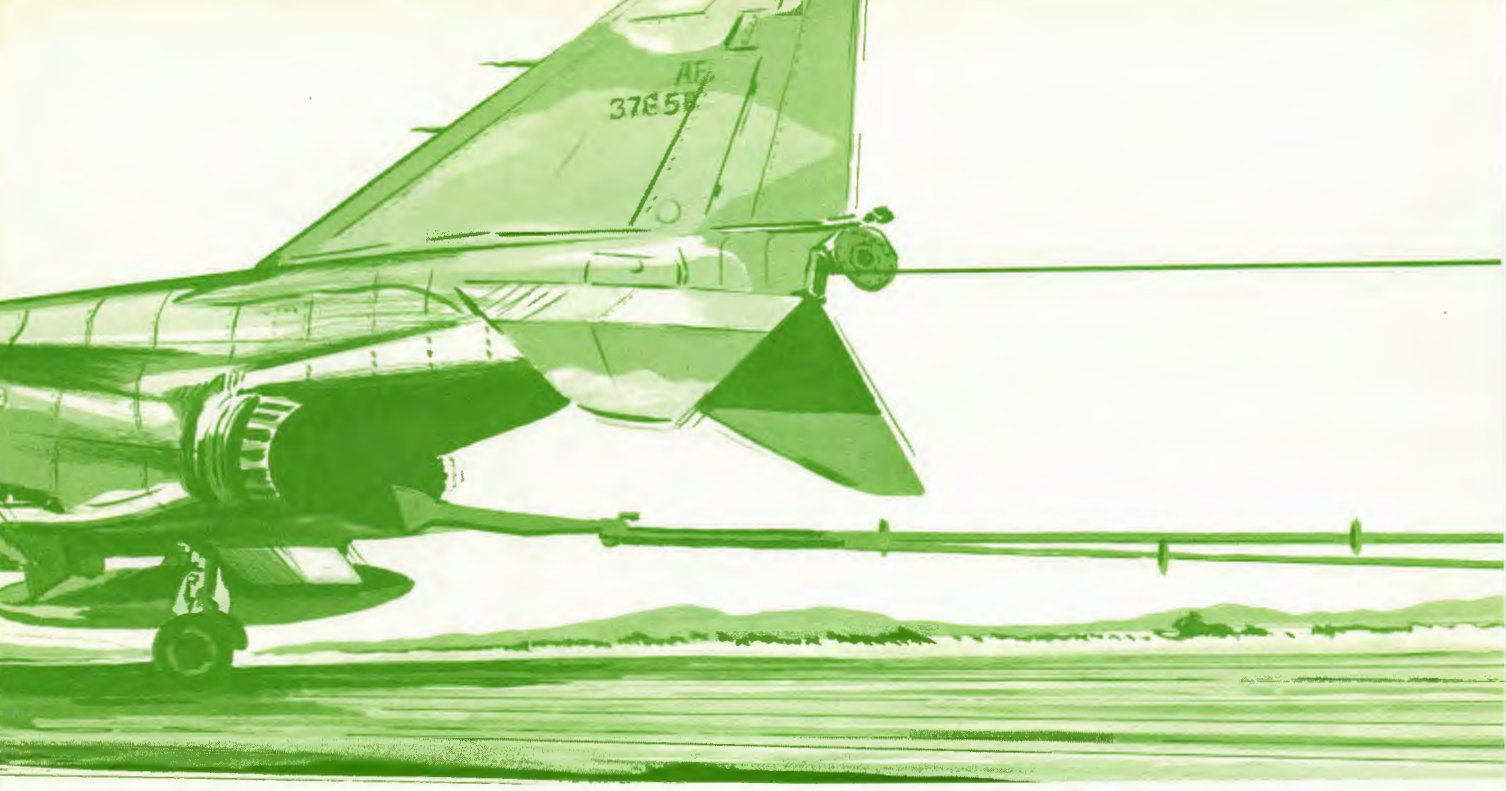
Maj Yohe

First Lieutenant Paul S. Slavin, 311th Tactical Fighter Training Squadron, and Major Robert S. Yohe, 58th Tactical Training Squadron, 58th Tactical Fighter Training Wing, Luke Air Force Base, Arizona, have been selected as Tactical Air Command Aircrewmen of Distinction for April 1973.

Lieutenant Slavin, a student F-4 aircraft commander, and Major Yohe, an instructor weapons system officer, were scheduled for a routine air attack training mission. On takeoff, as the aircraft reached liftoff speed and back stick pressure was applied, a slight yawing motion was noticed, but it was easily controlled. After liftoff, however, the aircraft rolled left about 35 degrees. The gear was immediately retracted and both crewmembers activated their emergency disconnect switches. The roll oscillations continued however, and could not be controlled by rudder pressure. Due to the low airspeed and the roll oscillations, the aircraft was only one hundred feet high as it passed the field boundary. Lieutenant Slavin then disengaged the yaw stab aug switch and pulled the rudder feel trim circuit breaker which enabled him to regain some control and averted a probable ejection. After beginning a climb and accelerating through 280 knots, the aircraft started uncommanded pitch oscillations from -1 to +2 Gs. Lieutenant Slavin engaged the paddle switch and, while Major Yohe held it, Lt Slavin turned off all the stab aug switches.

Moments later, all the pilot static instruments began excessive vibrations which ceased when Lt Slavin turned off the static correction. A controllability check and uneventful straight in landing followed. Subsequent investigation revealed that a TCTO on the power control box had been incorrectly accomplished the previous evening. The effect was to reverse the stab aug systems.

The quick thinking and timely, precise actions by Lieutenant Slavin and Major Yohe, based upon thorough knowledge of aircraft systems and emergency procedures, prevented a disastrous aircraft accident and certainly qualify them as Tactical Air Command Aircrewmen of Distinction.



A BUNCH OF PROS

by Capt Jim Young

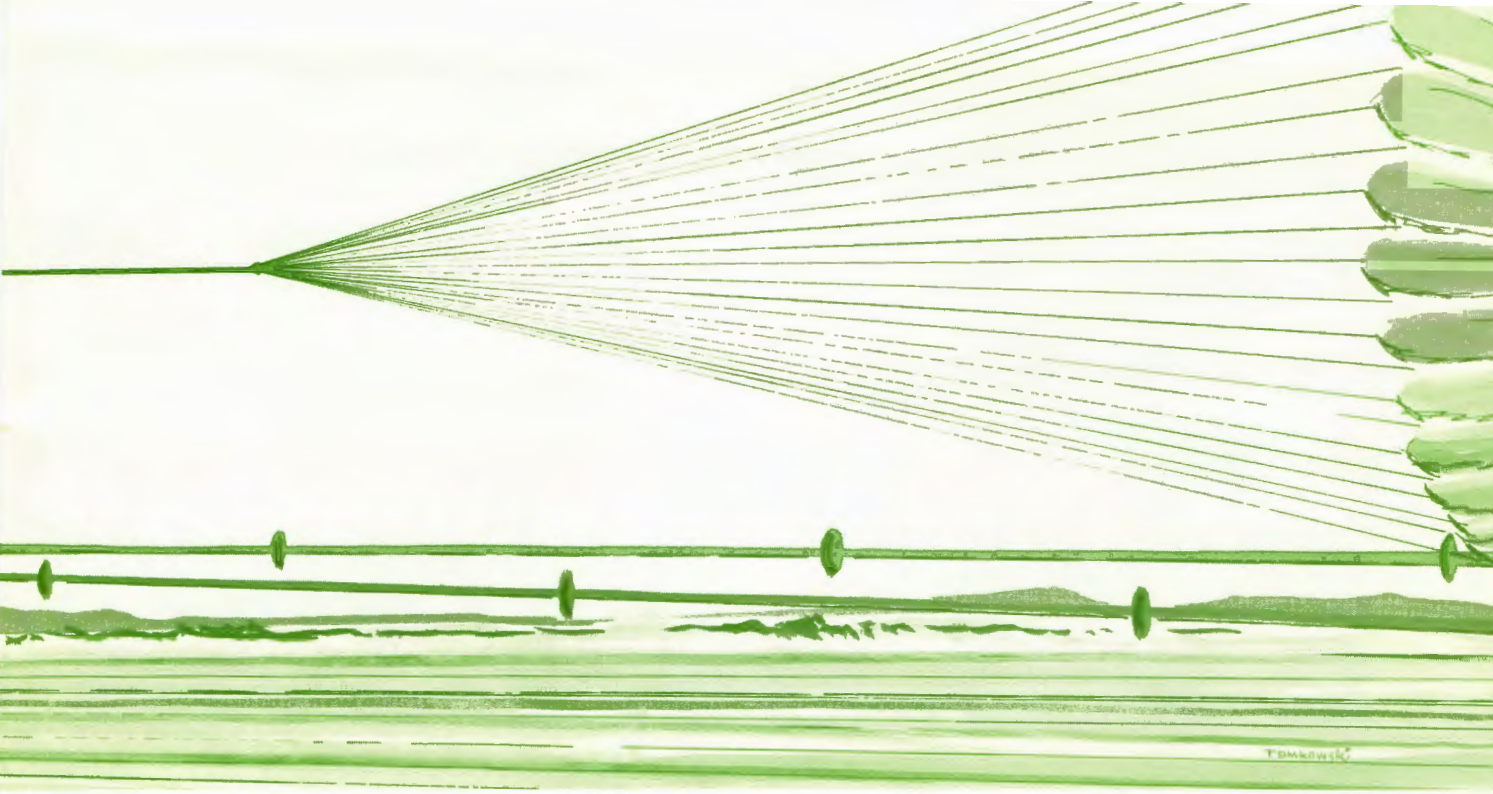
Sit down and relax! This is not a discourse on how not to do it that you too often read (or don't bother to read) in safety magazines. This is nothing more than a couple of war stories that are hairy and interesting. They show some TAC pilots handling their birds in a variety of situations — all of which fall into the category of being JC maneuvers.

So just lean back and light up and get ready to hear about a couple of pros!

The first situation starts out in an F-4 RTU outfit. The crew consisted of a student front seater on his first mission (How come the hairy ones always seem to hit them?) and, naturally enough, an IP in the back seat. Well, the mission was pretty uneventful until the second landing pattern. The gear and flaps came down and checked down just like they should, and everything was looking fine. Halfway around the base turn, the master caution light illuminated, the check hydraulics light came on, and the utility pressure dropped to zero. You Phantom phlyers are probably thinking by now that although it's an emergency, it's not too bad — approach end barrier, no nose gear steering, emergency brakes only — a few little goodies like that to consider — but not too bad. Oh yes, stud on his first mission, IP'll probably take the barrier from the back seat. Fairly good vis in those RTU birds though — no RHAW to get in the way. Course the bracket's still there, but then you can't have everything. So, the IP took the bird, made a go-around, declared an emergency, and started through the checklist. He set up for a straight in and planned to engage the barrier. The winds were a direct cross at twenty-two knots. (Ouch!) Now it's starting to look a little hairier. Let's see. Utility failure — stud on first mission — and direct cross at twenty-two knots. Then when the flaps were blown down, the aircraft rolled hard to the left. It took a lot of muscle and a lot of stick to counteract the rolling tendency. The IP by this time had his hands full (to say the least!). He flew the bird down final at one ninety (max barrier speed) and put the airplane right where it belonged! On the ground and in the barrier. Later investigation showed that he had a flap blowup and loss of BLC on one side.

It's kinda nice to know that we've got a pro like that as an IP!

The second situation involves a student crew, once again in an F-4. The 1st Lt AC and 2nd Lt nav were scheduled as number three in a flight of three on a ground attack training mission. The front seater had a total of 67 hours in the F-4, and if you want to add on his UPT student flying time, he had a grand total of 270 hours flying time. Not exactly what you'd call an old pro. Well anyway, there he was, on the range, flying a practice weapons delivery at 1000 feet AGL, when the biggest, blackest buzzard you ever saw (that he ever saw, anyway!) appeared in the center



of the windscreen. The AC ducked behind the instrument panel and pulled up in an attempt to avoid the midair. He was partially successful. The bird missed the windscreen (or the windscreen missed the buzzard — depends on your viewpoint!) but, as in all good war stories, it disappeared into the left intake. After recovering the airplane from the JC maneuver, the AC evaluated the situation and decided he'd better get his airplane on the ground before something happened to his one remaining good engine. Looking around, he spotted an aux field, 5400 feet long, with a BAK 9 at the departure end. While setting up for an approach at this field (he'd never landed there before) he determined that the damaged engine would still give him about 80 percent RPM without exceeding EGT limits, if he needed it. There he was then — inexperienced, strange field, heavyweight — one good engine — short field — departure end barrier! Not exactly the same as a simulated single engine at the home drome with an IP in the back seat. He hacked it through, and put the bird down within 200 feet of the approach end, hook down, chute out, and made for the center of the barrier. The airplane stopped right in the barrier, just as planned.

One incident like that doesn't necessarily make him an old pro, but it was an old pro type job he did!

Incident number three rates right up there near the top of the hairy war story scale too. It also involved an F-4, this time with an experienced AC in the front, and a crew chief in the back. While flying at night, in the weather (night weather is a war story in itself!) the plane was struck by lightning. The strike occurred during an en route descent, and struck the pitot tube. The airplane was severely jolted, the pilot was momentarily blinded, and the crew chief was knocked unconscious for a short time. The pilot went mil and, when he regained his vision, saw both fire lights illuminated. He had lost all UHF comm, all heading indicators (except standby mag), and INS, and the airspeed indicators. He used power, angle of attack, and the attitude indicator (the standby attitude indicator, since his INS had dumped) to climb back to VFR on top. He used his VHF to contact approach control and advised them of his problems. He then found a hole in the clouds and spotted the home patch. (Something had to go right!) He set up for an approach end barrier engagement but, as he lowered the gear and flaps, the airplane yawed and rolled to the left. Smoke started billowing from under both consoles. At this point, going IFR in the cockpit, he was about four miles on final and descending. He dumped cabin pressure so he could maintain visual contact with the runway, went to 100 percent oxygen, and pressed on. At three miles, the ADI quit and all the cockpit lighting burned out. The emergency floods still worked, so he

A BUNCH OF PROS

continued the approach. Since the airplane was yawing more and more, he briefed the back seater (crew chief) to be ready to eject in case they lost it. The AC then proceeded to put his F-4 on the runway and into the approach end barrier — with a left quartering tailwind of 10 knots. Later investigation revealed internal welding or fusing in the pitot tube, pitot heat switch, both oxygen quantity indicators, HSI amplifier module, the BDHI, the standby attitude power transformer, the ADF, the UHF-INS heater, the INS computer, and the left generator VRSP. The pitot tube was welded to the aircraft and electrical arc burn points were discovered at eight different points on the aircraft. Another pro got the job done!

The last incident also involved an F-4. (Perhaps there's a message there somewhere!) It, too, involved a student AC — this one had forty-four hours in the F-4, plus his UPT time. He had an instructor WSO in the back seat, and they were scheduled for a routine air attack training mission. (Why is it that they're always called routine?) Everything was fine until takeoff. (That means things immediately went wrong.) As the aircraft reached liftoff speed and back stick was applied, the aircraft yawed slightly. It was easily controlled and the AC continued the takeoff. As they lifted off, the airplane immediately rolled left approximately 35 degrees. The AC retracted the gear and both crewmembers hit their paddle switches, but the roll and yaw oscillations continued. They could not be controlled by rudder pressure. At this point they were passing the field boundary, 100 feet AGL, low airspeed, and rolling and yawing badly. The AC turned off the yaw stab aug and pulled the rudder trim circuit breaker. (For you non-F-4 types, that means he switched hands on the stick to pull the circuit breaker, because it's on the right console!) After establishing a climb, and while passing 280 knots, the airplane started uncommanded pitch oscillations from minus one to plus two Gs. The crew hit their paddle switches again, and the AC turned off all the stab augs. That stopped the oscillations. However, all the pitot static instruments began excessive vibrations — turning off the static correction fixed that. The AC was then able to perform a controllability check and made an uneventful (?) landing. Once again — well on his way to becoming an old pro!

There are a lot of cliches in the flying business. "Hours and hours of boredom followed by moments of stark terror" is one — and it seems to apply pretty well to all four of these incidents.

Every month here at TAC Safety we read hundreds of incident reports. Some of the hairy ones show up again later as nominees for the TAC Aircrewmen of Distinction Award. The four incidents discussed in this article were the four finalists in the competition for the April Aircrewmen of Distinction! They all proved themselves to be worthy candidates, but unfortunately there can only be one winner. However, all four are being forwarded to Aerospace Safety to be placed in competition for the USAF Well Done Award. How would you have voted? The final winner as selected by the TAC Safety Awards Board can be found on page 15 of this issue. Regardless of who "won" and who didn't — they're all a bunch of pros!

CHOCK TALK

chock talk

...incidents and incidentals with a maintenance slant.

SPOOKY AILERONS

Shortly after takeoff, the pilot had to stick in full left aileron in order to keep the Hercules from turning. He climbed the bird to 2000 feet while the engineer checked for a fuel imbalance. No imbalance was noted and the trim system was working OK. The pilot then ran through a controllability check, after which he declared an emergency and put 'er on the ground without further complications.

Maintenance investigators found that an aileron push-pull rod which should have been connected, wasn't. It had been disconnected during fuel cell maintenance . . . but no 781 entry was made nor was the correct maintenance shop called to either disconnect or connect the rod.

Another interesting aspect of this incident was that the disconnected rod was not discovered during either the Dash Six or the Dash One preflight. Even though the rod was disconnected, it butted against the other rod end and when the flight controls were activated to the left, the aileron would go up and when flight control pressure was reversed, the aileron would move down statically (assisted by the wind) and then return to the neutral position. Spooky, huh?

DUMMY !

What is a dummy bolt? It's a bolt which has neither a head nor a nut. It's used to fill the normal bolt hole to hold a piece in place while working to remove other airplane parts. It can be used, for example, to facilitate the removal of the left trailing edge flap actuator on the RF-4C. Now here's the good news. Flight tests have now proven that an RF-4C will fly for nine missions with a dummy bolt instead of a real one. However, when the correct bolt is installed (as it should be), just think how many more missions we can get!

THESE PHOTOS SPEAK FOR THEMSELVES.

WEATHER SERVICES AXED

by CMSgt George M. Horn
Chief Observer, Hq 5 WWg
Langley AFB, VA.

In case you haven't noticed, your weather service is slowly changing (pronounced "shrinking"), and it's all because of USAF-directed budget cuts. One of the first things to fall under the cost-cutter's axe was an Air Force institution known as the "Representative Observing Site," or "ROS." The ROS is (or was) that little building with lots of windows, sitting by itself out in the middle of the air patch and manned by a weather observer whose only job was to look outside and advise the world about the weather and each change thereto.

To make a short story even shorter, the Air Staff decided that this feature, unique among the world's weather services, was a luxury we could ill afford in this day of the snug buck. Doing away with them will, in fact, save 450 manpower spaces. So, most ROSs will be closed and weather sensor readouts (RVR, cloud height, temp/dew point, and wind) relocated to base weather stations, from which observations will thereafter originate.

Now we've all spent enough time in weather stations to know the view of weather out in the approach zone from that often windowless vantage point is something less than spectacular. As you might imagine, the observer's response to weather changes isn't going to be quite as fast as it used to be. He'll continue to put out a "record" observation on the hour and, during "bad" weather (1500/3 or less, precip occuring, or fog present), he'll check the weather every 20 minutes and tell us about it if there's been a change. The observer will rely heavily on tower controllers, who still have a good view of the airfield, to alert him to significant changes between required observations.

As we go to press, two TAC weather stations (at England and at Pope) have discontinued ROS service. Additionally, for you airlifters, the ROS at Campbell has passed from the scene.

Weather guys are a basically honest bunch, who'll readily admit that the forecasting game is not what you'd call one of the exact sciences. They don't want to kid about what's happening here — there's no way the

observation taken from a weather station is going to be as good or as timely as the one taken from an ROS. They point out, however, that the idea of having one weather observer tend the teletypes, operate the weather radar, answer phones, and do various other odd jobs while occasionally "observing the weather," is not a new one. Other weather services – our own National Weather Service included – have been doing it for years.

And now an appeal . . . Whereas the troops down at the weather station only appreciated your pilot reports before, they need them now, especially those that include ceiling and visibility in the approach zone. Give 'em a call on PFSV when you get a chance, or relay through a controller.

Speaking of PFSV, we might as well pass on the results of cost-cutting in that department too. This is a conversation you'll be hearing more of these days . . .

"Little Rock Metro, Little Rock Metro, Anvil 40."

"Anvil 40, Little Rock Metro, go ahead."

"Roger, Metro – Can you give us the 30,000 foot winds from Little Rock to Scott? And what will Scott be like at about 2245Z?"

"Anvil 40, be advised there is no forecaster on duty. This is an observer. I can give you the 30,000 foot winds from here to Scott and read you Scott's present weather and their forecast for 2300Z. Will that be satisfactory? If not, please call Blytheville Metro on 342.5."

The reason for the above exchange is the fact that more and more AWS stations are cutting forecasting hours and leaving a weather observer in charge of the station when there is no forecaster on duty. Rather than just shut down the PFSV, weather folks have trained observers to answer your calls and provide limited information. They may not make or interpret forecasts because they're not trained to make or interpret forecasts. However, they can relay any centrally prepared weather product to you. In effect, having the observer relay data to you is almost the same as standing in the station riffling through charts and sequences yourself.

Observers will cheerfully pass anything you ask for, so long as you don't ask them to forecast for you. If you must have a forecaster, try another station. Your IFR supplement will tell you what individual PFSV stations' hours are, and the hours a forecaster is on duty.

THE GUN WAS FLARED

Would you look down the barrel of a loaded howitzer? Probably not. But would you look down the barrel of a loaded flare pistol? Recently that very thing happened and resulted in a near-fatal accident. Here's how it happened.

The required two aircrew members, runway supervisory officer (RSO), and recorder, arrived at the runway supervisory unit and began a pre-operational check of their equipment. After the internal flare pistols were checked and loaded, the recorder went to the remote flare signalling device located adjacent to the runway to check the gun electrical circuit continuity and load the guns. He had been briefed by the RSO that a "thumbs-up" signal would indicate the device was clear and ready for the continuity check. The RSO remained in the runway supervisory unit and saw the recorder remove the cover from the gun enclosure, look inside, replace the cover, and raise his right arm. The RSO, thinking this was the agreed signal, hit the firing switch and instantly a flare struck the recorder in the forehead. He suffered a partial loss of vision which led to his removal from flying status and he may never fully regain sight in the injured eye.

The primary cause of this mishap was personnel factor – the crew failed to use the checklist detailing step-by-step procedures for downloading, inspecting, and functionally checking the remote flare unit; the recorder failed to insure the remote flare unit was unloaded prior to the functional check; and the crew on duty the previous day failed to unload the remote flare unit at the end of their tour of duty. The primary cause might just as correctly have been listed as – lack of respect for explosives, a low regard for personnel safety, and complacency.

Adequate procedures are provided for all explosives operations, but no one has devised a means to make the operator apply common sense. On your next task involving explosives, you might remember the checklists will keep you safe from the explosives, but it's up to you to add the missing ingredient – common sense.

TAC/9AF SEW

WEAPONS MISHAPS

TAC				ANG		
APR 73	THRU APR		EXPLOSIVE	APR 73	THRU APR	
	1973	1972			1973	1972
16	59	26	TOTAL	4	18	14
5	17	8	Personnel	2	11	8
9	33	11	Materiel	1	6	6
2	9	7	Other	1	1	0
1	9	1	MISSILE			
0	1	2	NUCLEAR			

From a collection of anonymous stories published in 1942 by the Army Air Forces, TAC ATTACK presents:

Lessons That Live

No. 9 of 17
Courtesy of Lt Col H. M. Butler, 4500 ABW/SE

ALMOST A BUM

Boy, it's great to be one of Uncle Sam's pilots! You're the cynosure of every admiring eye. But don't get too egotistical about it like I did! It was in the spring of 1938, while on maneuvers with the Mechanized Cavalry near Chattanooga, and I was ordered on a photographic mission to photograph several small airports. My orders were to land at Knoxville and gas up before returning to Chattanooga.

I hadn't paid too much attention to my maps and soon I was lost and running low on gas. I buzzed a town, read its name on the depot, and proceeded to locate it on the map. It so happens that Knoxville lies in the corner of four sectional maps and while I was trying to locate the town I had buzzed on one of the maps, my gas dropped to reserve. I decided to land immediately and locate myself before I ran out of fuel entirely.

I set the ship down nicely in a plowed field and upon checking, found I was about thirty miles southeast of Knoxville. I was flying an O-43 Douglas Observation ship which necessitated turning the gasoline to the "off" position when stopping the engine.

With the help of several farmers I managed to get the ship into a fairly smooth hayfield nearby and prepared to take off for Knoxville. By that time there was a crowd of at least 50 admiring rustics and cornfed damsels gathered around the plane.

I smiled at the farmers and waved at the girls as I gave it the gun and soared gracefully out of the field, clearing a high ridge in front of me by about thirty feet.

Just as I swung toward Knoxville at 1,000 feet, the engine sputtered and quit. I lost a couple of hundred feet before I realized what was wrong. I had carelessly and automatically switched the gas to main instead of reserve while making those gallant adieux in the hayfield!

I made the switch, the engine picked right up with a few licks of the wobble pump, and I proceeded to Knoxville.

I've often thought since how close I came to being a bum instead of one of Uncle Sam's heroes in the eyes of that crowd of Tennessee farmers and farmerettes!

In the Feb 73 issue we ran an article by Captain Broocke of National Airlines entitled "Numbers." Very shortly thereafter, Captain Broocke sent us this article (he also sent it to AIRLINE PILOT who beat us to it). In this article he expresses succinctly the terminology frustrations harbored by all pilots.

Ed.

some are LEFT

IF YOU WANT TO GO UP, PULL BACK A LITTLE BIT;

IF YOU WANT TO GO DOWN, PULL BACK A WHOLE

LOT.

Capt Ed. Ferguson

DON'T EVER FLY UNDER A BUZZARD.

Capt Jim Bomar

by Captain W. R. Broocke
National Airlines

In the animal kingdom, man alone is the only specie that deliberately complicates his life. Every other animal seeks regularity and consistency and any departure from it is reflected in a deterioration in its efficiency, longevity, or both. I'm not talking about the complexities and complications that occur as a natural outgrowth of living in a technical society. The ones I'm concerned about are those we superimpose on a life that is difficult enough already.

Let's face it, man is not designed to fly. His instincts and entire nervous and skeletal systems are organized for functioning strictly within two dimensions, and he is able to do so only because his intelligence has been able to devise a completely new mode of locomotion, which, like the wheel, has no parallel in nature. There is no such thing as fixed-wing flying by birds or other animals. Since there are already enough extraneous variables in our racket to make us nutty as a pet coon, it would seem blatantly obvious that we should minimize the variables and maximize the constants.

Alas, not so.

The two verities quoted at the beginning from two of my mentors from the distant past still hold, as does the one about the uselessness of the runway behind you and the altitude above you, but the availability of a burst of power to bail out a lousy approach or recover from a bounce disappeared with the prop along with a carload of other aeronautical lore. We should be able to at least maintain a continuity in the terminology, though, right?

Ha! I say again, ha!

For many years we started a takeoff by advancing the throttles, maintaining foward pressure on the yoke until ready to steer with the rudder or until ready for liftoff — until the Electra. At this juncture, as if checking out in a new beast was not hard enough, we had to learn that we were to advance the POWER LEVERS and maintain forward pressure on the CONTROL COLUMN. Since about 1946, we cooled the aircraft with expansion turbines and provided the proper fuel-air ratio for the engines with carburetors; then suddenly we had to start calling them air cycle machines and fuel controls.

All of this and many other similar situations, mind you, had to be interwoven with the weird ideas of some of the check pilots about the terminology to be used in setting power from the various flight configurations. At least two whole generations of pilots grew up using three basic power settings; takeoff, climb and cruise, but now suddenly "max power" instead of "takeoff power" became an absolute must. One check pilot became so infatuated with the new term that when an old goat he was checking reverted to the phraseology of a successful lifetime in the air and asked for "takeoff power," the check pilot took the power off to impress upon him the all-consuming necessity of using the new term.

With the advent of the 727, I exulted, initially at least,

things best ALONE

as I hastily ran through the manual. We had gotten our throttles back! A strange name recurred again and again, though, and I finally figured out what it was. To my dismay, I found that although we had regained the throttles we had lost the cockpit; it was now the "control cabin."

As I read on, I found that we had lost some other things, too. "Kilocycles" and later, "megacycles", adequately described the frequencies of our radio equipment all the way from our blood, sweat, and coffee-stained hand-cranked horrors with which we frantically sought a signal through our collapsing ear drums to the slick electronic gimmickry that nowadays makes a real loss of communications virtually unheard of. Now, though, supposedly to honor a radio pioneer, we must change our vocabulary and literally millions of manual pages in order to call these same identical calibrations "kiloHertz" and "megaHertz." The real reason for the change, I am convinced, is that somewhere, somebody in authority began to see the beginnings of an enduring nomenclature tradition, and since he probably spends his days off moving the furniture around and adding a few grains of pepper at a time to the pot roast, he couldn't stand the thought of anything becoming even usefully static. He couldn't overthrow an established term just out of hand, so with the unbeatable logic known to most politicians and all women, he tied an unacceptable proposition to an honored tradition, and it slides in without a murmur.

If you want to become a candidate for the funny farm, try speculating about what would happen if our sudden concern over honoring scientific pioneers made us start renaming other measurements on the aircraft after some of them. Hydraulic pressure might be measured in "Vickers units" instead of pounds, for example.

But I digress.

For centuries, in electricity a short was a short was a short, but now we must call it a "differential fault."

As the manual runs through the morning and afternoon editions of its revisions, even my initial exultation over the return of the throttles has been punctured. The manual now refers to these important devices by three different names: throttles, power levers, and thrust levers. I get the distinct impression that the days of our throttles are numbered.

The Navy, which I proudly claim as my Alma Mater, has maintained a consistency in significant nomenclature that reaches into antiquity, even though the ships have changed from sails and muzzle loaders to atomic power and guided missiles. The bow and the stern have meant the same for eons, and every seafaring man, probably since Leif Erickson, knows where port and starboard are. The Captain runs the ship from the bridge, the cook does his stuff in the galley, and a sailor in 1972 goes from below via a ladder to topside and up the rigging to any place aloft just as his forebears did 500 years ago, all without any sacrifice of function or efficiency.

Now airplanes have not been around as long as ships, I readily concede, but we may reasonably assume that they are going to last a while, so I think it is time for us to settle down on certain fundamentals so that when a new airplane shows up, it won't be quite as much of a whole new ball game.

As a beginning, I would accordingly like to propose that the following regulations be promulgated:

(1) The part of the airplane where the pilot(s) work(s) shall be known henceforth and forevermore as the COCKPIT.

(2) The handle(s) by which the pilot(s) increase and/or decrease power shall be known in perpetuity as the throttle(s).

(3) When a major source of electricity does not provide power to its intended destination due to its primary conductor having come in contact with another conductor or the frame of the aircraft, this condition shall be known eternally and universally as a SHORT.

(4) The foregoing regulation may not be cancelled or modified by any subsequent FAA administrator, air carrier inspector, or company check pilot who fancies himself an empire builder.

Reprinted courtesy of AIR LINE PILOT, February 1973

TACTICAL AIR COMMAND

Maintenance Man Safety Award

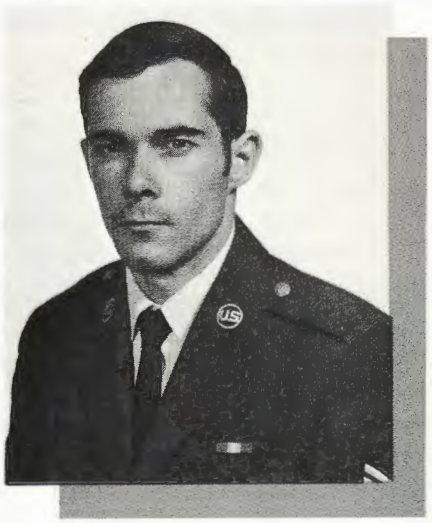
Staff Sergeant James E. Marshall, 834 Field Maintenance Squadron, 1 Special Operations Wing, Hurlburt Field, Florida, has been selected to receive the TAC Maintenance Man Safety Award for April 1973. Sergeant Marshall will receive a letter of appreciation from the Commander of Tactical Air Command and a Certificate.

SSGT MARSHALL

TACTICAL AIR COMMAND

Crew Chief Safety Award

Sergeant Gary D. Ollivant, 38 Organizational Maintenance Squadron, 58 Tactical Fighter Training Wing, Luke Air Force Base, Arizona, has been selected to receive the TAC Crew Chief Safety Award for April 1973. Sergeant Ollivant will receive a letter of appreciation from the Commander of Tactical Air Command and a Certificate.



SGT OLLIVANT

TACTICAL AIR COMMAND

Ground Safety Man of the Month

Staff Sergeant Jerry T. Barker, 834 Combat Support Group, 1 Special Operations Wing, Hurlburt Field, Florida, has been selected to receive the TAC Ground Safety Man of the Month Award for April 1973. Sergeant Barker will receive a letter of appreciation from the Commander of Tactical Air Command and a Certificate.

SSGT BARKER

LET US KNOW!

READER RESPONSE FORM. HOW WOULD YOU RATE THE FOLLOWING *TAC ATTACK* MATERIAL?

	TYPE OF ARTICLE/FEATURE	LOUSY	SO-SO	GOOD	GREAT
REGULAR FEATURES	CHOCK TALK				
	TAC TIPS				
	SPO CORNER				
	WEAPONS WORDS				
	AWARDS				
	FLEAGLE				
SPECIAL FEATURES	LESSONS THAT LIVE				
	EMERGENCY SITUATION TNG				
	LIFE SCIENCES/SURVIVAL				
	AIRCRAFT OPERATIONS (FIGHTER)				
	AIRCRAFT OPERATIONS (AIRLIFT)				
	AIRCRAFT OPERATIONS (OTHER)				
	AIRCRAFT ACCIDENT REVIEWS				
	INSTRUMENT FLYING				
	WEATHER				
	MAINTENANCE				
	GROUND SAFETY				
HIGH INTEREST	HISTORICAL (e.g. SWINGERS, FOUR HORSEMEN)				
	AERODYNAMICS				
	CURRENT DEVELOPMENTS (AIRCRAFT)				
	WAR STORIES				

YOU CAN IMPROVE *TAC ATTACK* BY: _____

_____

TAC ATTACK IS: EASY TO READ ☐ HARD TO READ ☐ ABOUT RIGHT ☐

GRAPHIC PRESENTATION (ART WORK, PHOTOS, ETC.): IS GOOD ☐ IS SO-SO ☐ CAN BE IMPROVED ☐ IF SO, HOW? _____

_____

THE GENERAL EDITORIAL QUALITY OF *TAC ATTACK* TALKS DOWN TO ME ☐ IS OVER MY HEAD ☐ IS ABOUT RIGHT ☐ COMMENT _____

_____

I WOULD LIKE TO SEE AN ARTICLE ON _____

PLEASE CONTACT ME FOR AN ARTICLE. NAME _____

ADDRESS _____ AUTOVON _____

HOW WOULD YOU COMPARE *TAC ATTACK* TO THESE SAFETY MAGAZINES? TAC ATTACK IS:

	BETTER	WORSE	ABOUT THE SAME	DON'T KNOW
AEROSPACE SAFETY				
MAC FLYER				
SAC COMBAT CREW				
USAFE AIRSCOOP				
PACAF PROFESSIONAL				
ADC INTERCEPTOR				

HAVE YOU GAINED ANY MEASURE OF ADDITIONAL SAFETY AWARENESS BY READING *TAC ATTACK*? YES ☐ NO ☐

COMMENT _____

_____

MY JOB IS: _____ AGE: _____ IF AN AIRCREWMEMBER, PLEASE COMPLETE

THE FOLLOWING: CREW POSITION: _____ TYPE AIRCRAFT: _____ YEARS RATED SERVICE: _____

CUT ALONG SOLID LINE

LET US KNOW!

READER RESPONSE FORM. HOW WOULD YOU RATE THE FOLLOWING *TAC ATTACK* MATERIAL?

	TYPE OF ARTICLE/FEATURE	LOUSY	SO-SO	GOOD	GREAT
REGULAR FEATURES	CHOCK TALK				
	TAC TIPS				
	SPO CORNER				
	WEAPONS WORDS				
	AWARDS				
	FLEAGLE				
SPECIAL FEATURES	LESSONS THAT LIVE				
	EMERGENCY SITUATION TNG				
	LIFE SCIENCES/SURVIVAL				
	AIRCRAFT OPERATIONS (FIGHTER)				
	AIRCRAFT OPERATIONS (AIRLIFT)				
	AIRCRAFT OPERATIONS (OTHER)				
	AIRCRAFT ACCIDENT REVIEWS				
	INSTRUMENT FLYING				
	WEATHER				
	MAINTENANCE				
	GROUND SAFETY				
HIGH INTEREST	HISTORICAL (e.g. SWINGERS, FOUR HORSEMEN)				
	AERODYNAMICS				
	CURRENT DEVELOPMENTS (AIRCRAFT)				
	WAR STORIES				

YOU CAN IMPROVE *TAC ATTACK* BY: _____

_____

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PACAF PROFESSIONAL				
ADC INTERCEPTOR				

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COMMENT _____

_____

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THE FOLLOWING: CREW POSITION: _____ TYPE AIRCRAFT: _____ YEARS RATED SERVICE: _____

FOLD ALONG DOTTED LINE
TAPE AND DROP IN MAILBOX

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LANGLEY AFB VA 23665

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DOD-318

The Editor
TAC ATTACK
TAC/SEPP
Langley AFB, Va. 23665

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LETTERS

TO THE EDITOR

A CONCERNED USAF PILOT

I am a USAF pilot with nearly ten years experience. I have just received and read UNCLASSIFIED EFTO; R 121430Z Dec 72 ZEX; FM TAC LANGLEY AFB VA; SUBJ: NOVEMBER 1972 AIRCRAFT ACCIDENT SUMMARY. That is what prompted this letter.

In the Final Section of III, page 2, the following statement is made: "Aircrews failing to follow emergency procedures and exceeding aircraft operating limitations highlight this summary." I don't know who wrote that statement, but I certainly disagree with him. I don't think the summary reads that way at all! Here's the way I read it:

1. November: 12 accidents – 11 major/1 minor.
2. No. 3 is classified; no. 7 is unknown.
3. Pilot Factor: Nos. 2, 5, 8, 9 and the one minor, i.e., 5 TOTAL.
4. Materiel Failure: Nos. 4, 6, 11, possibly no. 1, and probably no. 10, i.e., 4 OR 5 TOTAL.

Now it looks to me like last November is pretty much of a toss-up as to what factor, i.e., pilot or materiel, should have been "highlighted." Now, let's look at October, since that's what really got my attention:

1. October: 15 accidents – 12 major/3 minor.
2. No. 9 and no. 12 are incomplete; no. 11 classified.
3. Pilot Factor: Nos. 6, 7, 10 and minor accident no. 2, i.e., 4 TOTAL.
4. Materiel Failure: Nos. 2, 3, 5, probably no. 1 and no. 8, and minor no. 1, i.e., 6 TOTAL.
5. Maintenance Factor: No. 4 and probably upgraded minor no. 3, i.e., 2 TOTAL.

So who do we "highlight" now? Nine total pilot factor accidents for two months, and ten or eleven total materiel failures, plus two more maintenance failures for the same period! We may as well kick the pilots in the teeth again, because after all, that's the "traditional" thing to do! By the way, you don't have to agree with that statement because that would not make any difference. Whether headquarters feels it is true or not, most pilots "out here" think it is, and that's the important point. Author Arch Whitehouse coined a term "PBO" from World War I, and that stood for "poor bloody observer." Perhaps we in the USAF could update that to PBP (poor bloody pilot) today!

Although I no longer have access to extensive back copies of TAC ATTACK, it seems to me that a pilot from another service wrote a letter to the editor which appeared in the (I believe) December 1966 issue. He made at least two important points concerning USAF accident statistics which I try to always keep in mind. 1) Evidently, no USAF pilot has ever experienced a catastrophic malfunction or materiel failure while performing an unauthorized maneuver; 2) When pilots are killed in the crash, pilot error is the cause in almost 80% or 90% of the accidents, but when the pilot survives, pilot error is assessed in only 40% of the cases. (My recollection of the specific numbers for no. 2 may be off a bit, but the point is obvious.) As I recall, nothing was said to refute those statements, and I don't doubt the reason why. I feel that he was making valid observations about the USAF "pilot error syndrome."

Now, go ahead and take a look at UNCLASSIFIED EFTO; P 202040Z Nov 72 ZEX; FR TAC LANGLEY AFB VA; SUBJ: ALSAFECOM 11/72; SUBJECT: 1972 USAF EJECTION SURVIVAL RATE. On page 2, the following statement is made: "We can only speculate as to the reasons for these delays. (Delayed ejection – out of the envelope) . . . innate reluctance to meet accident investigation and flying evaluation boards . . ." Yes, I'll agree with that – I wonder just why pilots feel that way?

No, I'm not going to sign this. I don't expect to see it in print and I'm beginning to feel it is like pounding your head against a wall anyway. I guess I'm getting a bit older and I'm running out of vinegar as well. Perhaps it is just not worth it, but if this letter falls into the old "I've got guts but . . . " category, maybe you could pass it on to somebody, somewhere, who would understand why it bothers me so much. Thanks for your time.

Sincerely yours,

A Concerned USAF Pilot

Unsigned letters normally are not published in TAC ATTACK; however, an exception is being made in this case, partly because the letter writer touched a sensitive nerve and because he made some very good points.

The accident summary messages referred to are written at the Air Force Inspection and Safety Center and retransmitted by TAC to all TAC units. We agree with the November statement. The message writer didn't "highlight" those accidents, the aircrews did. We believe all accidents can be prevented. When they aren't, all available investigation findings are used in an attempt to prevent the next one.

Just for the record, more action is generally initiated for materiel failure accidents than for other cause factors. Actions taken as the result of accidents must be directed toward the audience which can do something about the causes. It does no good to "raise hell" at squadron pilots' meetings and with unit supervisors about materiel failures. This action is properly directed toward designers, builders, procurers, quality checkers, etc., and believe me, it is.

Although pilots "out there," and pilots here, too, feel that we get "beat about the head and shoulders" too frequently about pilot error accidents, we'll bet the materiel people feel the same way about materiel failure accidents.

Let's both admit that we still have too many accidents caused by crewmembers failing to follow established procedures and failing to abide by accepted rules and directives. Even one is too many.

There's no doubt that safety people will continue to highlight operator error accidents to operators, maintenance error accidents to wrench-benders, and materiel failure accidents to materiel procurers.

The quotation to which you refer in the Dec 66 issue of TAC ATTACK was an opinion of LCdr R. Carson, Naval Accident Investigator, and goes like this: "A review of your accidents would probably indicate that a posthumous pilot has never (1) had a mechanical failure in an unauthorized maneuver, (2) lost his flight control on final or in a target recovery, or (3) been assigned anything but vertigo on night stall/spins."

We agree that the pilot-error syndrome, as you call it, is a problem which can undermine the effectiveness of the accident prevention program. As reported in the Feb 73 issue of TAC ATTACK (SPO Corner – "Dead Pilot Factor" by Lt Col Kenison), crewmember error was cited in 72 percent of TAC and TAC-gained reserve forces accidents that have occurred since 1968 in which there were no crew survivors, while crewmember error was cited in only 45 percent when there were survivors. We admit that accident board members (the majority of whom are pilots) sometimes may jump to the conclusion that the pilot made a mistake simply because there was an opportunity for him to do so.

Causes are sometimes difficult to find and, in many cases, a survivor or flight recorder would be extremely valuable in pinpointing the problem, whether it was crew or otherwise. In general, however, our investigation boards do a good job, but many of them can be improved.

Perhaps, in your indignation, you have some constructive solutions to the problems you present. We would be happy to hear them . . . signed or unsigned. Ed.

MY FIRST GCA LANDING

I read with great interest, nostalgia, and some confusion of the events related in Colonel Walter G. Rishel's story "My First GCA Landing" (March 1973 issue, pages 4-6). I served in Hungary from April 1946 until August 1947, and again from October 1947 until August 1949. I am, in fact, writing a book about this period in

LETTERS

Thanks (?) for your crystal-clear criticism. ED.

Hungary and have accumulated considerable notes and reference material.

For a period of time in Budapest, I was Col. Rishel's assistant air officer in the U.S. Mission and flew the mission C-47 with him. Later, I became the mission air officer and also remained after the peace treaty as assistant air attache. Our old Gooney Bird #49538 was, in fact, the LAST U.S. aircraft based behind the Iron Curtain until it went to salvage at Erding, Germany in early 1949. We then flew a borrowed C-47 from Tulln AB in Austria, but were no longer allowed to base our bird in Budapest. However, at the time of "Salty" Rishel's story, there were a number of aircraft based and operating behind the Curtain. The U.S. Mission in Bucharest and at Prague had a C-47 and C-45, respectively. And I, as well as others, of old Air Transport Command and later European Air Transport Service, EATS, flew into Budapest, Bucharest, Sofia, Prague, and Belgrade as early as 1945. However, only three Army Air Force aircraft were based behind the Curtain, at Budapest, Bucharest, and Prague. By the way, the original aircraft based in Hungary was a B-25 and "Salty" flew that, too.

The young lad, Johnny, was the son of Lt Col "Doc" McClain, our mission doctor. The cow pasture we flew from in Budapest was called Budaors, located on the east edge of Pest on the east bank of the Danube. Every landing and takeoff was a true STOL operation. A commercial radio station, together with our own devised beacon approach, was our total navigation aids. Weather information was virtually non-existent and always old. By the way, I also flew with "Salty" to Berlin with witnesses for the trial of the Captain he writes about. We also made a near zero-zero landing at Gatow, and then moved the aircraft to Templehof the next day. I made the approach and landing at Gatow but I had already received flight training and GCA familiarization with the Air Transport Command at Orly, Paris, France, in January 1946. It is here that my memory and his story become somewhat confused in a jumble of many flights with lousy weather, poor radios, and few or no alternates.

After "Salty" left Budapest, I also flew our C-47 without a copilot, authorized by USAFE, but I had a qualified flight engineer and radio operator and the flight engineer was in the right seat on ALL takeoffs and landings and during any adverse condition. USAFE didn't have to direct this, believe me, I needed and wanted him there. To my knowledge, and my memory is good, an engineer and radio operator were assigned at the time of "Salty's story.

I lost contact with Col Rishel about 1949-50 and heard little about him for some years. Believe me, my time serving and flying with him were memorable and eventful. For one thing, he taught me to become an expert at the game of Backgammon. Those days in that part of Europe were truly "stranger than fiction" and hard to believe, even in my memory and note material.

Respectfully,

Colonel Gordon Y. Bowman
USAF Special Operations Force, Eglin AFB, FL.

LOST CENTURYS FOURSHIP

Here is the fourth F-109! "The D-188A or XF-109 was designed by Bell Aircraft Corporation as a fighter-bomber weapon system under a joint Navy/Air Force contract and developed between 1957 and 1959.

"Although it progressed only through the mock-up stage, the concept has been proven successful since in the VJ-101C aircraft built by a West German development group and which flew in Europe.

"During the US program, a complete set of design analysis layout drawing and subsystem specifications were prepared and extensive wind tunnel, jet impingement, aeroelastic, and structural testing programs were completed. The contractual efforts were completed and the mock-up reviewed by Navy and Air Force personnel in February 1959.

"The single-place D-188A resembled a conventional jet fighter. It had a long wasp-waisted fuselage and short knife-like wings. Powered by eight (8) J-85 turbojet engines, two mounted at the tip of each wing, four located in the fuselage, it was designed as a deck-ready interceptor for the Navy and as a tactical fighter-bomber for the Air Force.

"Wing-tip engines rotated to a vertical position for takeoff, supplemented by two lift engines in the forward fuselage and by diverting the thrust from the rear fuselage engines. Transition to horizontal flight could be made in 60 seconds."

This information, with a photo of the mock-up and a three-view layout drawing, was included on a publicity release from Bell.

I would appreciate it if you would send me the November 1972 issue in which "Lost Century Series Aircraft" appeared, as I missed it and was aware of the article solely because of Captain Kramer's letter in the March 1973 TAC ATTACK.

Thanks a great deal, and I hope this information is helpful to you and your readers.

Mark Sublette
69 Meigs Drive
Shalimar, Florida

Thanks for completing our F(XF)109 fourship. The November 1972 issue was a very popular one and our stock of extra copies has been wiped out by requests such as yours. However, the article has been faxed and is on its way to you. Ed.

FAC REUNION '73

The first big time 0-1, 0-2, and OV-10 slow-moving FAC reunion will be held in Ft Walton Beach, Florida, on October 17, 18, and 19, 1973. For information, write to FAC REUNION '73, Box 517, Mary Ester, Fla. 32569, or call "GIBBER" Autovon 872-6864.

REUNION

The 30th Tac Recon Sq is celebrating the 30th Anniversary of its formation with a Reunion/Open House at RAF, Alconbury, England, August 31 – September 2, 1973. All former members are invited to attend. Former members are also encouraged to loan or donate any materials that may be of interest. For further information contact: Captain James A. Cummings, 30th TRS, Box 308, APO New York 09238.

☆ U. S. GOVERNMENT PRINTING OFFICE: 1973-514.011/11

TAC TALLY

MAJOR ACCIDENT RATE COMPARISON

	TAC		ANG		AFRes	
	1973	1972	1973	1972	1973	1972
JAN	5.0	0	8.5	0	14.9	0
FEB	5.2	1.6	8.6	0	6.7	0
MAR	4.9	3.0	7.0	16.5	4.8	0
APR	4.3	3.2	6.3	8.1	3.2	0
MAY						
JUN						
JUL						
AUG						
SEP						
OCT						
NOV						
DEC						

AIRCRAFT ACCIDENTS

UNITS

	THRU APRIL 1973 ACDTS	THRU APRIL 1973 RATE	THRU APRIL 1972 ACDTS	THRU APRIL 1972 RATE		THRU APRIL 1973 ACDTS	THRU APRIL 1973 RATE	THRU APRIL 1972 ACDTS	THRU APRIL 1972 RATE
9AF	3	3.4	1	1.2	12AF	4	3.5	4	3.2
1 TFW	0	0	0	0	27 TFW	1	13.1	1	12.8
4 TFW	0	0	0	0	35 TFW	0	0	0	0
23 TFW	1	16.0	0	0	49 TFW	0	0	1	10.3
31 TFW	0	0	0	0	58 TFTW	1	5.2	1	5.1
33 TFW	0	0	0	0	67 TRW	0	0	0	0
68 TASG	0	0	0	0	71 TASG	0	0	0	0
316 TAW	0	0	0	0	313 TAW	0	0	0	0
317 TAW	0	0	0	0	314 TAW	0	0	0	0
354 TFW	2	12.0	1	13.7	355 TFW	0	0	0	0
363 TRW	0	0	0	0	366 TFW	0	0	0	0
					474 TFW	2	19.8	1	8.6
					463 TAW	0	0	0	0
					23 TFW	0	0	0	0

TAC SPECIAL UNITS

1 SOW	1	9.0	0	0	4410 SOTG	0	0	2	18.9
2 ADG	0	0	0	0	4485 TS	0	0	0	0
57 FWW	1	13.5	0	0	4500 ABW	0	0	0	0
ADS	1	–	0	0	OTHER	0	0	0	0

SUMMARY

TAC APR 73	TAC THRU APRIL 1973	TAC THRU APRIL 1972		ANG APR 73	ANG THRU APRIL 1973	ANG THRU APRIL 1972
1	14	14	TOTAL ACCIDENTS	2	7	8
1	10	8	MAJOR	1	6	7
1	9	15	AIRCREW FATALITIES	0	1	1
1	10	8	AIRCRAFT DESTROYED	0	3	6
0	9	9	TOTAL EJECTIONS	0	3	5
–	4	5	SUCCESSFUL EJECTIONS	–	2	5
–	44%	55.6%	PERCENT SUCCESSFUL	–	66.7%	100%


FLEAGLE
WHATTA YA THINK OF TAC ATTACK ?
TAC ATTACK
C.&M. A GOOD
BAD
HARRISON
LIKE IT ?
HATE IT ?
NEVER HEARD OF IT ?
© Stan Hardison 1973
WE WANT TO KNOW SO WE CAN MAKE IT BETTER.
FILL OUT, CLIP OUT, AND SEND IN READER RESPONSE FORM PAGE 27.