

APRIL 1961

ATTACK

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TAC attack April 1961. The higher you go



THE HIGHER YOU GO



TACTICAL AIR COMMAND ATTACK

GENERAL F. F. EVEREST COMMANDER TACTICAL AIR COMMAND
LT GEN J. E. SMART VICE COMMANDER

FOREWORD

The other day I watched two of our fighters recover under exceedingly bad weather conditions. I recalled the days when the hazards of all weather flight often were met by grounding our aircraft when weather approached VFR minimums. Now, listening to the radio calls, I was struck by the calm atmosphere of everyday routine attendant to the whole operation. The fact is--it was a routine recovery. It was routine because the pilots were skilled, the approach and GCA controllers were skilled and the airplanes were in sound mechanical condition. Had any one of these things not been true, this routine recovery would have, at best, turned into an emergency.

By virtue of our mission, the type aircraft we fly, and the weapon systems we utilize, the inexperienced views tactical aircraft operations as hazardous. They are not. As long as the planning, the supervision, and the ability to execute a mission are up to our standards we can do with confidence what we otherwise should not attempt. A unit's capability must be measured both by its flying safety record and by its ability to perform its directed mission. The unit that can truly do this--accomplish safely as a matter of routine, that which would otherwise be hazardous, is the unit deserving the highest mark.

s/ T. R. Milton
t/ T. R. MILTON
Brigadier General, USAF
Commander, 41st Air Division

Reprinted from PACAF Flyer

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COVER PHOTO

F-104's of the 479th Tactical Fighter Wing fly it pretty near George AFB.

STOP THE F. O. D.

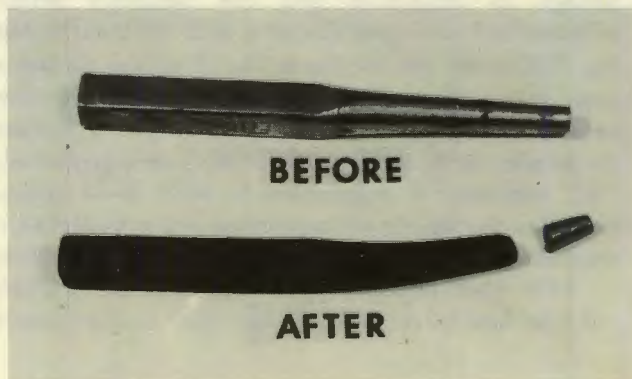


A FLIGHT OF FOUR F-100 aircraft departed the base for a coordinated air refueling and combat profile mission. Rendezvous was made with the tankers as planned, but number four experienced an AB malfunction and aborted. The other three in the flight refueled without incident and completed the low level navigation portion of the mission. However, as a climb was started for a dive bomb run, number three reported that his AB wouldn't light and that he would circle the target and wait for the others. Number one made his run with number two following at the normal interval. As two began his pull-up, he experienced a violent explosion, an extremely rough engine and severe vibrations. The utility hydraulic and number one flight control systems failed and the EGT increased to 710°C. The pilot immediately reduced his power to idle, zoomed for altitude, and established a glide toward a suitable emergency landing area. He extended the RAT and the number one flight control pressure increased to 3500 psi. As he debated whether to advance power from idle, he noticed that the oil pressure was 5-10 psi, the RPM was dropping, and the TPT was 725°C. He stop-cocked the throttle and then attempted an airstart which was not successful. It was apparent that without power the aircraft could not reach the selected emergency landing area so the pilot ejected.

The engine and afterburner sections were

recovered from the aircraft wreckage and returned to the base for detailed examination. Investigators found the tip of an 8" drift pin near the ninth stage compressor disc. The rest of the drift pin was found near one of the inlet guide vanes.

In the past, most foreign object damage was caused by ingestion of foreign objects from ramps and runways. This is no longer the case. Now, many of our failures and malfunctions occur shortly after periodic inspections and unscheduled maintenance. This indicates that maintenance and inspections are not as complete as they could be. You say tain't so, but a review of FOD incidents indicates that the majority result from careless maintenance practices such as the F-100 involved in the above accident. The first photo shows the drift punch that was removed from its engine. The next photo shows what



happened when a fifty-cent wrench was ingested by another engine. The last intake duct maintenance on this aircraft had taken place three days before the accident, and apparently the wrench had been overlooked when the work was finished and signed off.



The third photo was included to show what was carelessly left in the wheel wells of another F-100. This conglomeration fell from the aircraft 7,000 feet down the runway during takeoff, and although not a threat to the aircraft that was carrying it, this materiel could have caused FOD or serious structural damage to other departing or landing aircraft.



Engine overhaul resulting from foreign object damage is expensive and can seriously affect efficient and safe operation of a unit. It is estimated that FOD costs the Air Force 14-15 million dollars a year. It is little wonder, then, that the Air Force has become vitally concerned. In an attempt to combat the problem AFR 66-33 and AFM 66-3 were published. TAC published a supplement to AFR 66-33 which amplifies the Air Force regulation and establishes a requirement for a foreign object damage report.

AFM 66-3 effectively covers the FOD problem and tells how to establish an excellent foreign object

damage control program. Among other things, this manual lists a number of prevention practices. We've jotted down a few of them and added a couple of others.

- Maintenance activities should account for and properly dispose of nuts, bolts, washers, safety wire, clippings, etc., during removal, repair and installation of aircraft and engine components and parts.

- Maintenance personnel should take inventory of hand tools used during aircraft or engine repair to insure that they have all been accounted for. Some units have already established rigid control systems to account for tools, supplies and anything that may find its way into an engine. These units require a red cross entry in the Form 781 each time the intake duct is entered. This red cross entry notes the number of tools used in the duct and the supervisor who signs off the entry verifies that all tools have been removed.

- In some maintenance units, personnel are wearing the latest in men's wear whenever they enter the intake duct. It's a little gem called a bunny suit.

- Personal effects such as pens, pencils, and identification badges should be properly accounted for. This should include buttons and other fasteners. The bunny suit is very effective in retaining such items.

- Flight line vehicle control will also limit the amount of foreign objects carried onto ramp and runways by vehicle tires. Designating specific areas for entering and leaving the flight line helps to solve this problem.

- Special waste receptacles for safety wire clippings and unusable bolts and nuts help to keep these items out of engines. These receptacles also help to remind everyone of the necessity for continuing FOD preventive practices.

- Runway and ramp sweeping and physical policing programs are excellent FOD prevention measures. The manual gives detailed instructions on proper methods.

Indications are that many of the jet engines being changed in TAC, though not reported as such, are caused from FOD, and that more positive and complete corrective and preventive action could be taken to reduce the number of engine changes if all incidents of FOD were reported.

With spring just around the corner, now is a good time to start planning a re-vitalized program. A good place to begin is by dusting off and re-reading AFR 66-33 and AFM 66-3.....and, everyone associated with aircraft operation should be impressed with the seriousness of the FOD hazard, and should be enjoined to exert their efforts to reduce it. ●



OLD

TAT

OLD TAT READ a blurb in ADC's superb flying fish wrapper, *The Interceptor*, about a young buck who experienced dizziness and hot flashes while bending throttles at flight level 350. He checked his cabin altitude and found it at 12,000, but still had the impression that he was experiencing hypoxia. The symptoms continued even though he pulled the green apple on his bailout bottle. After he descended to 20,000 feet, everything returned to normal.

On landing, the aircraft oxygen supply was given a thorough going over along with the regulator and this lad's personal equipment. Everything checked out in the green, except for one small item. Seems this fella habitually wore a scarf tied 'round his neck. The APC administrators concluded that this restricted the supply of blood to his headbone, causing the dizziness and hot flashes. His efforts to cure the problem were effective only because the cockpit activity loosened the offending piece of cloth and restored circulation.

Apparently this is one more peril the scarf and swagger stick set must contend with. Incidentally, until reading this, Old TAT was wondering if beer and old age were finally exacting their toll...now we know it's just the civilizing influence of a necktie after having spent three tie-free years in Hula

land. Oh well, Summer isn't far off and by next winter we may have wrangled our way back to the Land of the Aloha Shirt.

WITH DISGUSTING REGULARITY old TAT will strap himself into a bird having one of the older type automatic belts and find that some good Joe, in a misguided attempt to be helpful, has tied a spare key for the belt release onto the belt. Our procedure seldom varies. We haul out our survival knife, snip off the attaching leader and hand the key to the shocked crew chief...along with a big toothy grin. Then we explain that having the spare key handy is potentially dangerous because some idiot pilot might use it instead of the one attached to his chute and that this defeats the purpose of the auto equipment. In case some pilot doesn't have a key on his chute, having to find one will remind him that he won't have an automatic chute should he have to bail. Admittedly a spare key needs to be available for the rear seat lap belt in two place jets. But it does not have to be kept with the belt. Best cure is to replace all old type belt latches with the newer type.

While on this subject, we also note a few outfits still mistrust ejection or canopy jettison equipment to the extent that ground handling safety pins are kept inserted until the aircrew arrives. This isn't good. Someday someone will overlook one of these pins and that's the very day the engine may decide to

convert itself into the raw material for pots and pans at, say, 200 feet over rough terrain. The good book tells which pins are to be left in 'on the ground. If you don't think the book is right, UR it. However, you have to weigh the possibility of a bird being damaged or someone getting hurt in an accidental firing on the ground against the risk of someone being killed because they couldn't use the equipment for its designed purpose.

We've also noticed that some units attach the streamers together. Although we have no objection to this, troops must be careful in some birds else they are apt to send the canopy into orbit. This occurs when the streamer gets fouled in the canopy jettison T-handle and someone yanks on 'em to pull a pin. Whenever you find maintenance procedures that conflict with aircrew procedures, do a little squawking to those who can correct the situation. If nothing else, write out an ops hazard... could be their TO conflicts with yours, or is not being followed. Speaking of squawking, twice in the past few weeks TAT has gone out to fly a T-33 which was left with the gun bay door closed but unlatched. This is a booby trap if there ever was one. Apparently these machines had just returned from boondoggles and their occupants hadn't wasted any time removing their gear and galloping off to renew acquaintances with their little women. They each prepared the trap while each crew chief baited it by leaving 'em unfastened. TAT, who long ago learned never to trust anyone, unset both traps. But... supposing something exciting had walked out onto the ramp in a pair of tight short

shorts just as we'd reached that part of our check list... and supposing in the excitement, we'd moved around to the opposite side of the aircraft in order to improve visibility and then dropped our check list. Isn't it possible that we'd overlook the latches? Of course you don't see many short shorts on a military flying pasture... but there are plenty of other distractions almost as bad (or good). When you leave your aircraft it should either be fit to jump in and fly... provided it has been reserviced... or it should be written up in the form.



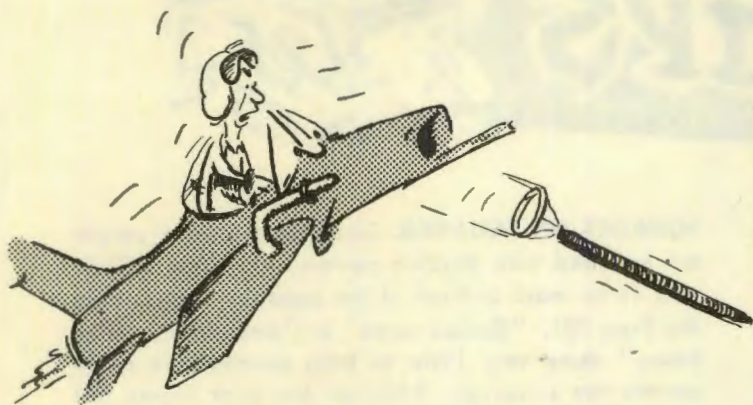
OUT WHERE TERRY has been chasing pirates (female, naturally) for the last 20 years, a C-130 tried to chop its way to New York via the direct route. Seems the pilot of the critter was making his run-up check in the parking area to... he has a nice way of saying "corner cutting" so we'll quote him, "Facilitate an orderly formation taxi and takeoff."

The bird was headed east during this run-up with a 25 knot wind gusting to 40 knots whistling out of the northwest. During the crossover point in the propeller check, with power applied to all four engines, the left wing went up, the right wing went down and the number four prop started digging. This possibility is not covered in the TOs so was quite a surprise to everyone involved.

You Herk drivers are now warned, so don't use this technique to go digging the other direction.

AFTER TAKING on a fair load of fuel, an F-100 fell off the hose. The tanker established a descent and the F-100 driver made another hook-up, but the hose snaked and broke the probe. The mishap was assessed to a combination of pilot factor (excessive overtake speed) and slow KB-50 reel response. TAT couldn't help but choke on the pencil he munched as he read the AMA man's reply. This character defended the reel take-up response (it worked on the initial hook-up) and said the present take-up speed of eight feet per second is fast enough *provided the receiver*





does not close faster than three to five knots.

Hoo boy! Nuthin' to it; just keep your closure rate between four and five knots, like the dash one says, and connect a machine that is within a few knots of falling instead of flying to a hose being dragged downhill by another machine. After all, it's what you get paid for...but TAT can't help but wonder about the tolerances – and the possibility that some pertinent changes could improve 'em a bit.

A TAC DRIVER (no pun intended) managed to get airborne even tho the left main tire on his F-100C came apart while he was still rolling. He landed successfully aided by a right cross wind and full right rudder. Only sweat was having to unbend some of the right rudder in order to pick up nose gear steering. Aircraft weight was 22,000 pounds and the tire had only accumulated eight points . . . but before you start scratching your headbone, TAT hastens to add that those final points were mighty points indeed. Seems this pilot made a no chute landing to test the anti-skid brakes, taxied two and one half miles, asked someone to check his tires for smoking, then promptly started the take-off which caused all the excitement.

Apparently this fella figured taxiing would be no hardship on the tires provided he kept off the brakes... frankly, TAT used to believe this too until he read a fine type article in the March 1960 Interceptor by Mr. E. L. Turner of the Goodrich Co. Just in case you don't have this article handy, we'll quote an interesting tidbit from it.

"In a recent tire test conducted on an F-106 at Edwards AFB, the aircraft was towed out to the end of the runway on a dolly. After making a normal take-off and landing, the aircraft was stopped at the end of the runway and given a thorough tire check. No damage or abnormal heating of tires was found. The

aircraft was then taxied back to the line and the tires again checked. To the amazement of maintenance personnel, tire temperature had increased to the extent that additional flights were not advisable, and a tire change was necessary."

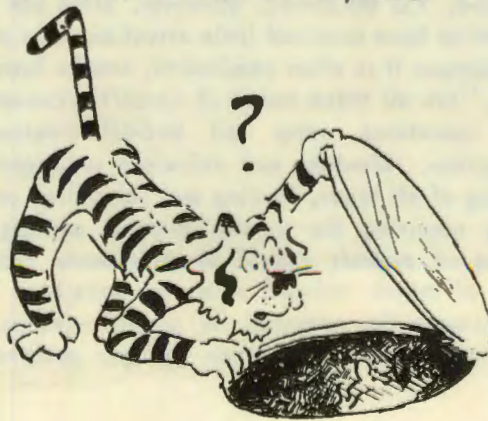
How about that? Incidentally, according to Mr. Turner, tires are cured (vulcanized) at about 270° and if heated above this temperature, are doomed to come apart before their allotted time... and rubber won't smoke until heated quite a bit higher.

AN F-86 JOCK reported "three wheels, pressure up" after turning base and then made a smooth, tho lower than normal, landing. He had a little trouble taxiing since the wheels were still neatly retracted. The drop tanks took most of the licks, and damage was below the accident level.

The pilot picked up the tab since the safety snoops couldn't find anything wrong with either the gear system or the warning circuit. The mobile controller – who was Yehudi's first cousin – contributed, according to the investigator... and then the rebuttals arrived and the fun started.

Two captains were unlucky enough to have been hanging around Ops at the time and had to face the finger for failing to fill mobile. Both protested. One pointed out that the captain who triggered this tragic tableau had completed transition, and that mobile control was not required. He cited a local reg which backed him up. He also observed that current practice was to have the nearest body monitor landings; therefore, it was not an assigned duty. He concluded by recommending some pertinent and obvious revisions to existing procedures.

The other captain, who was the senior, pointed out that he had not been definitely placed in charge. He further stated that the Ops officer had left for parts unknown at 1430 even tho as Duty Officer his tour wasn't over until 1615. All he did was tell the captain that he was taking off. And so with that interesting glimpse at slovenly supervision, TAT gently lowers the lid on the cesspool. ●



TAC TIPS



GIMMICK FOR OXYGEN MASKS. SSgt Joseph B. Kelly of the 326 Fighter Interceptor Squadron, Richards-Gebaur AFB, Mo, faced with the problem of installing the headset cable retaining rings on the oxygen mask hose after the 30-day disassembly inspection, decided that it could be done more easily and quickly. He made a tool by vertically securing an 18" section of 1½" o.d. pipe to a base. The mask hose is pulled over the pipe and the retaining rings are positioned automatically. Total cost, 37 cents and ten minutes of work.

—ADC Interceptor

TILTED T-BIRD. While refueling a T-33, an observant maintenance man noticed that one leading edge tank was full and that the other was not. He checked and found an inoperative boost pump on the side with the full tank. This malfunction is a definite hazard since it results in 50 gallons of fuel being trapped. The discrepancy would not be noticeable to a pilot during any phase of his preflight or during his taxi check of the boost pumps. An on-the-ball maintenance refueling crew is just about the only effective method of detecting this condition, and the only way they can is by comparing the amount of fuel needed to fill the one side with that used in filling the tanks on the opposite wing. Incidentally, this is a good item to review during POL maintenance meetings.

—5th AF Flight Safety News

GROUND MOVEMENT OF AIRCRAFT. Towing and taxiing are accepted as part of every unit's operation and a great amount of material has been published on this subject, including directives such as AFR 62-10, AFM 32-3, TO 00-25-172. However, there are still areas which have received little attention. One which is so obvious it is often overlooked, can be found by asking, "Are all these moves of aircraft necessary?" Local operations, ramp and aircraft clearances, construction, refueling and defueling requirements, servicing of all types, loading and unloading, or any activity requiring the towing, taxiing, parking and securing of aircraft should be considered and the number of moves reduced whenever possible. This will decrease the potential for ground mishaps and result in an overall reduction in their occurrence.

SQUAWKS ON SQUAWKS. Until maintenance people are endowed with psychic powers, all pilots will do well to be more critical of the squawks they post in the Form 781. "Brakes weak" or "aircraft flies wing heavy" does very little to help maintenance types correct the situation. Although the pilot knows full well what was wrong (or believes he does), he has to communicate this on paper in sufficient detail to let people who were not on the flight understand what took place. Take the write-up, "Brakes weak." Were both weak? Was pedal feed back pressure normal with an abnormal reaction? Or was pedal travel and feed back pressure abnormal? Did the abnormality occur at all taxi speeds or just at high speed? In short, if the pilot describes what took place and gives the conditions which existed at the time, maintenance can usually diagnose the difficulty without having to fire up the machine... or in case of an inflight malfunction, send it up with a test pilot for a better appraisal.



FOUR STAR CINEMA. Flight Safety Film Report #10, which depicts the Tactical Air Command Flight Safety Program, is now available at Base Film Libraries. The 25-minute color film excellently portrays the planning and execution of a CASF deployment by a typical TAC unit.

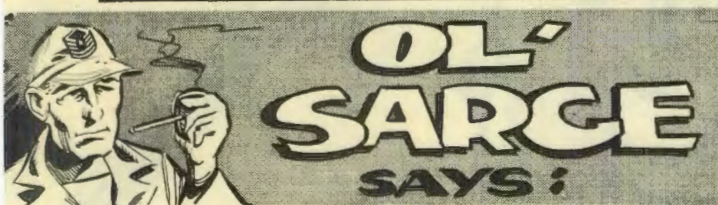
A CHOCK FOR THE STICK - F-100. As I rotated the nose for takeoff something fell from the top of the instrument panel to the floor. At this point my

full attention was required to fly the aircraft; consequently, I did not see where the object came to rest. As I started a climb, I looked on the floor and observed the wooden block for the camera magazine near the right footrest. This is the second time this has happened to me. I recommend removal of this block before it falls behind the stick and causes an accident.

—5th AF Safety News

NEW TWIST, OLD HAZARD. A pilot unfastened his oxygen mask to light up a popular brand... instead of relaxing to the smooth aroma, properly filtered, his face and neck burst into flames. He had been using a face lotion which left a greasy residue and his

mask was leaking 100% oxygen...and that was enough for one of the hottest smokes on record.



Lieutenant Green, the assistant maintenance officer, listened to rain being lashed against the side of the maintenance office and gloomily wondered how much longer it would last. He'd planned on a fishing trip over the weekend and with Friday half over and no noticeable letup in the rain... well, he'd been happier. Glancing out the water-streaked window he saw the old Sarge nimbly making his way from high spot to high spot on the water-covered walk. His frown disappeared when he saw the old Sarge reach the last remaining puddle, hesitate, then leap mightily for the other side. A huge splash followed while the old Sarge skidded precariously, waving his arms in a successful effort to regain his balance. Shortly afterwards he came through the door, water draining from his clothes to puddle on the floor around his soaked shoes.

The lieutenant grinned and said, "I see you didn't make that last puddle either." He shoved one drenched shoe out around the edge of his desk. "Don't tell me you've been poking around the flight line on a day like this?"

"Do I look like I was that crazy?" chuckled the old Sarge. "I was over at the 13th hangar doing my snooping inside where it was dry." He rubbed at the corner of one eye, leaving a dark smudge. "Obviously, I didn't stay that way. You know, it's amazing what you can find in people's tool boxes these days." He took his inverted pipe from his mouth and started knocking out the cold residue.

"How's that?" asked the lieutenant, hoping to delay the inevitable smog as long as possible.

"Well," replied the Sarge, "I was making a

routine check of some tool boxes and found one that still has me wondering. This guy had a complete set of drills and taps..."

"What would he need those for?" interrupted the lieutenant.

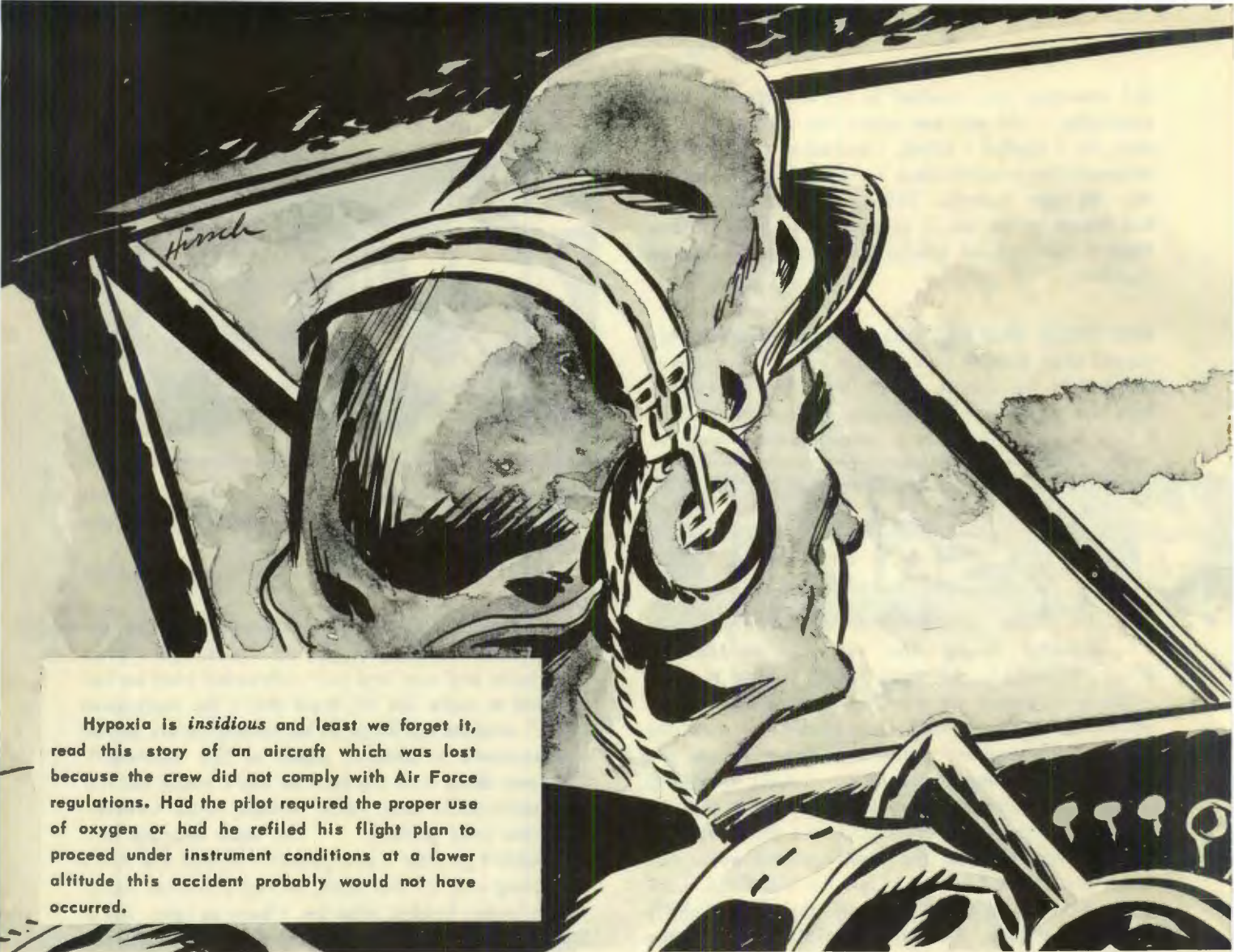
"Darned if I know. He was supposed to be just an aircraft mechanic. Maybe he didn't want to run after bolts and nuts and just rethreaded what he had on hand to make 'em fit; least that's the implication I got," said the old Sarge as he fumbled in his pocket and withdrew a battered pouch of Old Barnsmell. "Anyway along with the taps he had a whole hat full of unserviceable nuts, bolts, screws, crush washers, and even used gaskets... You know doggone well he wouldn't go after a new gasket if he had one that'd fit. Along with all that stuff, he had a rawhide mallet with a broken handle; what for, I have no idea. All of his tools were rusty and in very poor shape. He had a leaf feeler gauge that was so rusty I had to tap it on the floor to get it open..."

The lieutenant said, "Maybe that's what he kept the mallet for."

"Might be at that," chuckled the old Sarge. "Blades on it were so rusty he'd be oversize on anything he measured. He also had several full spools of various sizes of safety wire. I told him if everyone kept spools of wire each squadron would have ten years' supply of wire."

"Sounds like he was quite a mechanic," said the lieutenant.

"Yeah," sighed the old Sarge. "Just came into the outfit. I figger Old George will have him shaped up in two, three months, or promote him to some job well away from aircraft and ground handling equipment." He started packing the old corn cob, glanced at the lieutenant, and said, "Say, Lieutenant, if you're still going fishing tomorrow, 'bout all you'll have to do is drop a line off your front porch, open a can of suds, and have at it." ●



Hypoxia is *insidious* and least we forget it, read this story of an aircraft which was lost because the crew did not comply with Air Force regulations. Had the pilot required the proper use of oxygen or had he refiled his flight plan to proceed under instrument conditions at a lower altitude this accident probably would not have occurred.

THE SHORT STOCKY CAPTAIN took a sip of coffee and leaned back in the battered green arm chair. He was in his early forties, ordinarily pleasant and rather easy going. Right now he appeared to be under a strain...and was surrounded by a small group of pilots. Some were sitting, others standing. All were listening intently to what he had to say.

His voice sounded flat and dispassionate. "We went back to the waiting room and drank coffee until around nine. Stan came in after looking at another sequence and said he was going to file, that we could make it. John and I went and refiled. We filed IFR, VFR on top. Cloud tops were supposed to go up to 12,000 near Roundstone."

Taking another sip of the dark liquid, he fumbled in his flight jacket and extracted a badly crumpled almost empty package of cigarettes. He offered them to the group, but no one accepted. "We didn't have any trouble getting off and everything seemed normal.

After takeoff we contacted departure control and got instructions for the climb. Near Johnson Intersection they lost us, but regained contact after we made an identifying turn."

Someone held a lighter, and the Captain got his cigarette going, then continued, smoke dribbling from his mouth as he talked, "We were on top at 10,500 feet, but as we continued the cloud bank got higher and we had to climb to stay on top. At 12,000 we went into high blower and from then on we just managed to climb with the cloud bank, occasionally running into thin scud. It looked like one continuous incline and it didn't look like we'd be able to stay on top. When we reached 16,700 feet we knew we couldn't top it. Around 12 or 13,000 feet I had begun to get kinda blurry, so started to use oxygen. All three of us sucked it out of the hose itself. I had my mask, but didn't have a helmet."

"The airplane had been normal during the climb except for carburetor temperature. We used heat and

THE HIGHER YOU GO



brought that up to normal. Just before reaching 16,700 I requested a lower altitude. I asked John what altitude he wanted and he indicated 12,000. So I asked for it and they cleared us to descend after Bluestone. I think it was Bluestone. The next is kind of hazy. John reached up to get the throttles and pulled them back to cruise, I think, waiting for time to descend. The next thing I can remember I was hanging on my belt talking with radio and at the same time watching John and the instruments. We were pushing forward as hard as possible and we still seemed to be climbing. Then both engines seemed to completely run away. According to the instruments we were in a stall, no breaks, no shuddering, just a complete downward movement of the aircraft. We caught this... both of us on the controls. We hauled back and reduced power and it seemed to happen again. We seemed in a steep climb and all of a sudden both engines began to rev as if running away, indicating another dive. We tried to hold the

airplane and I noticed my window had broken completely out. It was not too clear for some seconds as to what was going on. Looking out I checked the number two engine. The front of the cowling had broken loose and was hanging on the governor control on the front section of the engine."

He paused and took another drag on his cigarette then absent-mindedly ground the rest of it on the edge of his cup, letting it fall into the remaining liquid. No one spoke, so he continued, "At that time we knew we were pretty well in trouble, and it seemed the same thing happened again. I went up in the air and back down in my seat. The engine controls all vibrated from full on to full off. I reached up and caught them, then got back on the flight controls. By then we could see breaks in the clouds and recovered from the stall about 1000 feet under the clouds. Then we noticed that number two was out. Fuel pressure, oil pressure and RPM were ZERO. Manifold pressure was up, but I didn't know where. Still the prop was spinning like it was running away. The engineer and I both had to make up our minds as to which was out since we were still confused. We pointed it out and John reached up for the feathering button. I don't know if he pushed the button or not, but it didn't feather.

"That much I remember. I had a feeling that everything would be alright if we could get it feathered. We had full RPM and full throttle on the left engine, but were still going down. John said to get ready for a crash landing. I was standing by to assist him but oddly, he never asked for anything." He sighed as if recalling a bad dream; then, speaking a little slower, continued, "We made a turn towards this field but lost too much altitude. I remember trees hitting the fuselage and seeing a power line. I was sure we'd hit it and closed my eyes. After that things got groggy..."

Someone asked, "What altitude did you start using oxygen?" He frowned as if in thought, then answered, "Somewhere between 12 and 14 thousand. I had been talking to radio and noticed my handwriting was becoming erratic and things were hazy. It dawned on me that it was from lack of oxygen. I reached for the oxygen hose and the engineer handed me his. We punched John and showed him what we were doing. He used his the same way."

One of the group had been going over a smudged Form 21A. He looked up and said, "Frank, from what I get off your flight plan, you were at 16,000 for almost 20 minutes and above 10,000 or almost 30."

"Yeah, I guess if we had expected to stay at altitude that long we'd have gone ahead and used masks."

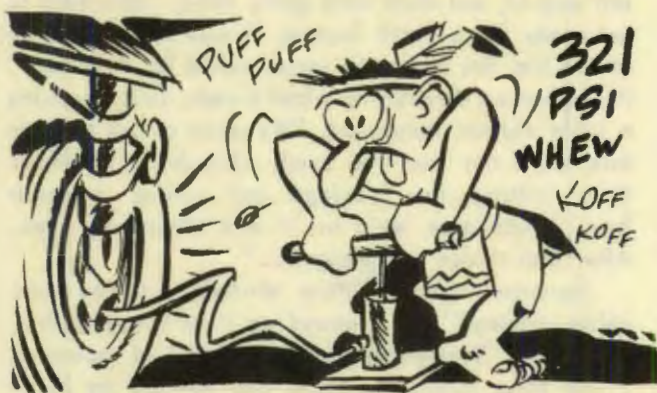
CHOCK TALK

F-100 TIRES AND HOT WEATHER. With summer weather rapidly approaching, now is the time to re-review tire handling procedures. This summer, the tire failure problem should be easier to control since considerable effort has been expended in the development of a 21,000 pound 22 ply rating tire for use on F-100 aircraft. This tire will have a maximum inflation pressure of 320 PSI. In addition to the new tire, OOAMA is procuring a new 21,000 pound rated wheel. The new wheel and tire will have tubeless capability. Incidentally, the new tires can be used on existing wheels until replacement wheels are available. F-100 C and A models will get the job of using the current supply of wheels and tires. Effect of the new equipment on the point system is not known at this time... it should help... but will not be a cure-all for all the problems which have plagued us in the past. You will still have to pay strict attention to proper tire handling procedures and will have to make certain that tires are maintained at the proper pressure for aircraft gross weight. Right now the tire failure rate is low; keep up the good work and it will stay that way through the summer months.

way, changing the tires and towing it back to the area. I saw upon returning that the aircraft I had taken the down locks off had collapsed. I parked the tow mule and aircraft in the fuel pits and reported what had happened."



WHY MURPHY GOT MAD: A major accident occurred because the azimuth bar to hub rods were installed in reverse on an H-43B. A one-time inspection of other H-43B's was called for and one additional aircraft was found with the rods installed improperly. An ECP has been requested from the manufacturer which will provide changes to the azimuth hub control to prevent incorrect installation. The dash-six has been revised to require a maintenance flight control response inspection following every reconnection or installation of azimuth to hub bar assemblies. In addition, a dash-one change has been recommended to require a preflight check by the pilot. Maintenance men should always be on the alert for items that can be installed incorrectly, and recommend appropriate changes.



SHOULDA STOOD IN BED. If you think the Air Force has *all* the trouble, read this extract from a Navy Accident Report: "I was working in the fuel pits when an F8U had a blowout on landing. I took the tow mule and went to the line shack to pick up the jack and main tires. Upon leaving the line shack, I stopped at a nearby aircraft and took the down locks. I took the down locks from this plane on the line because it was the nearest plane to reach and I had to have down locks for the plane on the runway. After taking the down locks I went out to the aircraft on the runway and assisted in towing it off the run-

AFM 66-1 DATA. Many maintenance people have probably wondered what happens to all of the information entered on AFTO forms. To show how closely this data is sifted, these reports are analyzed for the number of incidents, time of occurrence, number of replacements, nature of the discrepancy and whether or not there was an increase or decrease in man-hour requirements. Objectives of this system, according to Middletown AMA, are to increase aircraft reliability, improve inspection standards, reduce man-hour costs, improve maintenance standards and obtain maximum useage of parts without jeopardizing safety

of flight. Results of data processing are reflected in revisions to TO-6 handbooks, 06 code books, sequence charts and work cards.

EVOLUTION OF A WEAPON SYSTEM. A weapon system is conceived when a unit or command decides it needs newer or better equipment in order to accomplish its assigned mission. This can be a requirement for a new troop transport, an all weather fighter bomber, a new missile, a world-wide communications system, or perhaps a local communications system. Once such a requirement has been determined, it has to win Hq USAF approval. To get this approval, the major air command submits a Qualitative Operation Requirement (QOR) in narrative form. The mission or function is stated along with present capability to accomplish the mission. Characteristics of the desired equipment are also given along with a description of where it will be employed, the desired performance and any special instruction or suggestion that may assist the developing agency in meeting this requirement.

If Hq USAF approves the QOR, it is forwarded to ARDC for action. This is when the system starts its "R&D" - Research and Development. By this time, several civilian contractors have studied the requirements and have their proposals in various stages of development.

Once a specific contractor (it can be more) has been selected, the system test programs are normally conducted in three categories:

Category I - Subsystem Development Test and Evaluation.

Category II - System Development Test and Evaluation.

Category III - System Operational Test and Evaluation.

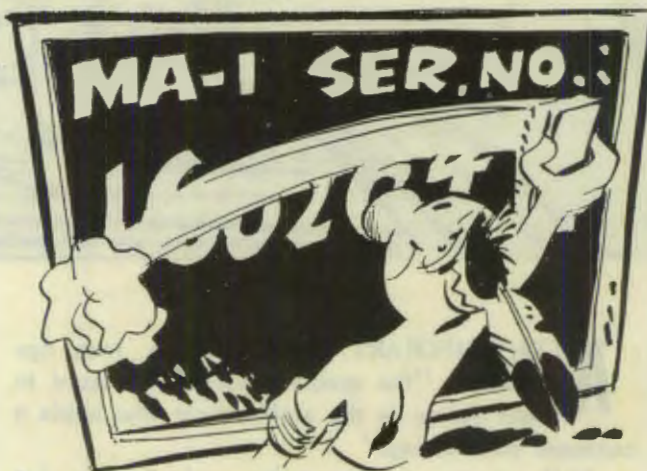
ARDC has the main responsibility in the early development of the system. However, by the time the system enters Category III testing many other commands have become considerably involved, usually these are AMC, the using commands and ATC. Meanwhile, Hq USAF continually reviews the entire program. Other organizations may also become involved, such as AFSWC, IG, USAF Security Service, etc., depending upon the system being developed.

During R&D staff maintenance personnel of the using commands monitor the development of the system to insure that it doesn't get too complex to maintain. Some of their recommendations cannot be incorporated because of cost. Others are introduced after the system is deployed, such as the TM-76A Bench Test Sets. And some are introduced as Class

V modifications. Regardless, the maintainability continues to be increased. In the headquarters of the major commands, the limitations and restrictions under which maintenance personnel at the using level must operate are recognized. It's not all honey or syrup, but the end objective is always there--a maintainable weapon system in the field.

The day comes when the system is declared operationally suitable and a C-130 takes off on its mission, a F-105 squadron is deployed, or a TM-76A is launched from its pad . . . to represent years of work by thousands of people financed by millions of the U.S. taxpayers' hard earned dollars.

This is a brief idea of how a weapon system is introduced into the inventory. For those of you who wish to learn more about this subject, the 80- series of Air Force Regulations contains the story in detail.



OFF WITH THE NUMBERS. TAC has directed removal of the registration number from MA-1, MA-2 and MA-3 multipurpose servicing units. These units are no longer reportable as a vehicle under AFR 77-6. Instead, TO 35-1-511 has been revised to include them in the AGE serialization program. This will incorporate these units into the maintenance data collection system and will make Tech Order Compliance by serial number easier. When you receive TO 35-1-511, complete AFTO Form 26E and submit it as per the instructions.

HI-VALUE LABS GYROS. When LABS vertical or yaw-roll gyros are turned in for repair, units should make every effort to determine whether or not these gyros can best be repaired by the depot or by the contractor. Gyros should then be shipped without delay to the appropriate facility. Prompt forwarding will help reduce critical pipeline time, and save money by reducing the number of gyros needed for an adequate supply level. ●



MATTER OF HUMILITY

By: Captain Donald G. Millard

A CONTEMPORARY SAGE not so long ago observed, "the greatest potential hazard to flight safety is the staff officer who holds a command pilot rating."

Well, in some instances this might be true, but as a generalization it could be ripped completely to shreds. Statistics will show that a large percentage of accidents occur in highly qualified operational organizations, and that it is the younger, less mature (emotionally and flying-wise) pilot who buds the accident columns under "operator error."



But let's journey to the other end of this aviator spectrum. Let's look at the older, more mature (emotionally and flying-wise) pilot, the man who has amassed an impressive amount of flying time in many diversified aircraft. A pilot who has in the neighborhood of 4000 hours total time with about 420 hours of instrument time. And of these 420 hours, 200 might be in actual weather. This man has probably held every job from Squadron Ground's Beautification Officer to Squadron Commander and has had various stints in odd jobs at the old Group and Wing level. After several professional schools, he finds himself behind a big, awesome desk at a major command performing staff duties which tax every bit of his long and varied experience. He now begins to see the whys and wherefores of what he scornfully tossed off in the past as mere irrelevancies.

It is fairly obvious from this man's Form 5 that he has an insatiable love for flying. He prefers the newer, hotter aircraft, but will settle for almost anything with wings. However, he soon discovers that it is increasingly more difficult to get out to smell the kerosene, and a paradox develops. It has happened to all of us. The less we are able to fly, the harder it is to get us into the cockpit, even

though once behind the stick or wheel, we are ready and eager to go. And so it goes, month after month.

But while our conscientious staff man is busily reorganizing and rewriting the Air Force, a lot of changes and innovations are occurring. The airways are being altered radically; procedures are changing; old reliable aircraft are undergoing major modifications; a lot of new blood is being injected into old arteries and this pilot of ours is changing. He is growing older and he finds himself a little too content to rely upon his past knowledge and experience (the old cliché... "it got me this far, why change?"). He is slowly drifting farther and farther into right field, out of play. It is an insidious but relentless movement, and it probably comes as quite a shock to our lad when he first realizes what is happening. With some alarm he will make a rapid, conscientious effort to catch up. But with other seemingly higher priorities he finds himself bound more and more to the swivel chair than to the cockpit. Unfortunately, this pilot cannot afford to take a few weeks or a month off to live in flight suit. Instead he is subjected to what he considers tortuous and time wasting periodic refresher courses and occasional flights with highly competent IP's.

A good pilot normally possesses a moderate supply of pride and self-confidence. This brings us to our second paradox: These qualities will, nine times out of ten, keep a staff pilot from utilizing the services made available to him at flight operations. Our pilot doesn't want to appear ignorant; consequently, his pride won't allow him to ask questions. His conscience tells him he should know of certain changes and he will try, with a prideful and nonchalant air, to pick what he can out of causal conversations or through desultory reading of the many bulletins, manuals, pamphlets, newsletters, and other things that pass across his desk. He

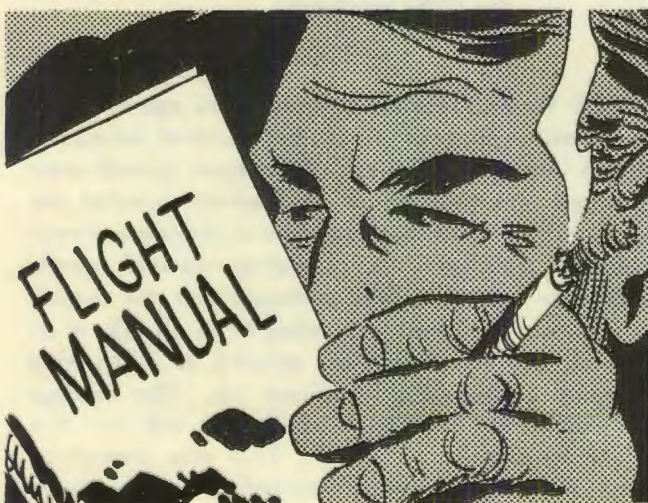


should know that ignorance can be illuminated where stupidity cannot. Stupidity might be a very harsh word, but what else is it that keeps a man from asking questions whose answers might save him an untold amount of embarrassment and possibly even his life? To be redundant, "what you don't know won't hurt you, it will kill you."

This totally unwarranted pride and self-confidence gives birth to another serious problem. Our pilot has never faltered when he received the "go" signal. He scoffed at other pilots who questioned their own ability to complete a certain mission or crack a lowering ceiling. But not this intrepid aviator! He was a young tiger and a man well-qualified in his aircraft. He knew the sky and was as at home in the clouds as in the Officers Club. But notice the past tense. He was a young tiger, he was well-qualified, he knew the sky, he was familiar, etc., etc. Some people refuse to realize that "then was then and now is now." To put it very bluntly they are not always as sharp as they used to be.

There are still many instances when a staff pilot feels compelled to perform a flight for which he is not presently qualified when the wise thing to do would be to tell the scheduling people that he doesn't consider himself proficient enough to hack the mission. No one in his right mind is going to scoff. Instead, additional proficiency training flights may be scheduled.

There are many well-qualified instructor pilots on the flight line who are available for proficiency training flights and who can give assistance in flight planning or explain new procedures and equipment. Usually IP's understand the problem and are more than willing to answer, or to find the answer, to any question they are asked. The clue is that they must be asked. When in doubt bow to humility- bury pride and interrogate! ●





TAC EVAL

F-100 EJECTION. On page 12 of our January issue, we talked about low altitude ejection and mentioned that the trigger in the F-100 is not easy to reach. Well, it happened again! A second accident report has crossed our desk where the pilot experienced trouble finding the ejection seat trigger in the F-100. Again, we reiterate – the trigger in the F-100 is NOT easy to reach. Suggest you practice the ejection procedure on a disarmed ejection seat or ejection seat simulator as required by TACR 50-20.



EXPLOSION! A couple of T-Bird pilots were driving their machine at 41,000 feet one day recently when the occupant of the rear cockpit decided to lower his seat. This casual action triggered a chain of events that they will probably remember for a long time. When the rear seat was lowered it crimped the oxygen hose. The pilot realized what had happened and immediately raised the seat, but this had no effect on the oxygen hose--it remained crimped. He pulled the green apple to activate his bailout bottle and restore oxygen flow to his mask. During his movements in the rear seat he had unknowingly situated the lanyard to his life raft in such a position that it too was activated when he straightened up in the seat. The pilot in the front cockpit heard a loud explosion as the compressed air bottle inflated the dinghy and another explosion when the dinghy burst from over inflation in the confined area of the ejection seat. The second explosion was accompanied by a billowing cloud of white talcum powder which filled the canopy and both cockpits with what appeared to be smoke. The pilot in the front cockpit immediately stopcocked, figuring that the engine had exploded, or

some other failure had occurred that was equally serious. Of course the silence that followed was deafening. The pilots discussed their situation, accomplished an airstart and returned to their home drome for landing.
—5th AF Safety News

THUNDER BUMPERS. Airplane drivers will do well to review the following pointers regarding flight in, around, and near one of the less friendly summertime flight companions.

BECAUSE: The most turbulent area is usually in the middle third of the vertical cloud structure.

Hail is most likely to be encountered near the freezing level, but has been encountered at all flight altitudes, both in and out of clouds.

Heaviest icing is experienced when air temperature is about 0° to 10C.

Most static electric discharges occur near the freezing level.

THEN: Avoid flight in thunderstorm activity. If you can't get over, under, or around the thunder bumper and you must go through, fly at 6000 feet above the terrain or as high as possible within the safe operating limits of the aircraft. Remember to avoid flight at or near the freezing level and to slow the aircraft to the penetration speed prescribed in the flight handbook.

SPEED VS ALTITUDE. Several years ago the FAA took motion pictures of several hundred scheduled airline landings. All types of transport aircraft were involved. An analysis of the movies revealed two facts, both of which are important in the prevention of overshoot accidents. In computing required runway length for landing it was presumed that the aircraft would cross the runway boundary at an altitude of 50 feet. It was found that the majority of pilots were doing a consistently excellent job. The average altitude at the boundary was 21 feet and very few pilots were higher or lower. This was considered good. Also, in computing required runway length for



landing it was presumed that the aircraft would cross the boundary at a certain speed which was a function of the stalling speed of the particular aircraft. Of course, this speed should vary for gross weight and the FAA correlated the actual weights of the aircraft they photographed. The results showed that in contrast to the high level of skill demonstrated in crossing the runway boundary at consistent and safe altitudes, pilots were very sloppy about speed control. The spread of speeds was terrific even when headwind and turbulence were influencing factors. One in 20 pilots was going at least 20 knots too fast over the boundary and one in seven was going at least 10 knots too fast. Ten knots excess speed is equivalent to being 100 feet too high over the boundary. Most pilots would normally abandon their landing if they crossed the approach end of the runway 200 feet too high, but few realize that they are in the same fix if they cross the approach end of the runway at the proper altitude but going 20 knots too fast. Pilots should not get into the habit of making faster than normal approaches just because they have a lot of runway ahead. Someday they may have to land on a short field and it may be very difficult to break away from the fast approach habit. However, with turbulence and a headwind, it is generally necessary to use a little excess speed and/or power. The point is: pick the touchdown point and fly the proper airspeed all the way down to it or go around and try again.

F-100 SPINS. During the last two years, ten F-100 aircraft have been lost because their pilots were unable to recover from inadvertent spins. In three of these accidents the pilots were killed. Three additional fatal accidents appear to have been a result of this same cause factor although investi-

gators were unable to make an exact determination. Aside from the immeasurable loss in aircrews, these accidents cost the defense effort over nine million dollars. The problem of F-100 inadvertent spins is of long standing, has been well-researched, and is adequately discussed in the aircraft handbook. Most spins have resulted from an accelerated stall while attempting a steep turn, high G barrel roll, or scissors. The handbook specifically warns pilots to be aware of accelerated stall characteristics and to do their maneuvering short of the stalling point. It is reasonable, then, to wonder what flaw in the present system permitted these accidents to occur. So, the characteristics of the machine are known and safe operational procedures are established by the good book... and the unsolicited testimony of experienced F-100 drivers indicates that spins can be prevented if handbook procedures are followed... where, then, is the breakdown? The number of mishaps indicates that the breakdown does not result because of an occasional venture from established procedures. Instead, it appears that the handbook information is just not being stressed enough in our training programs - right down at operating level. How about it, Operations Officers?



ZERO OIL PRESSURE. Here's an incident we thought might be of interest to you T-bird drivers. While on a cross-country jaunt, a T-bird driver found that the oil pressure gauge was reading zero. Suspecting oil starvation, he made a precautionary landing, only to find that the bum reading was due to a pressure instrument inverter failure. If this inverter goes out, the fuel pressure gauge will also become inoperative, so a good cross check is to move your throttle. If the fuel pressure does not move after moving the throttle, then you know you have an inverter failure. If the fuel pressure moves, then you have a good possibility of actually having zero oil pressure.

-5th AF Flight Safety News

STUCK STICK. A safety officer reports that on two occasions pilots of his organization noticed that the controls on a T-33 became extremely stiff at altitude. Later they found that the cockpit drain had plugged, and water had collected at the base of the stick. After drain holes were cleared, there were no further write-ups.

—ADC Interceptor

SHORT FLIGHT. Here is an accident which happened to a civilian carrier. This one, you don't have to figure out, because the word is in. Seems that the big bird got airborne and climbed normally to about 100 feet, where it gradually nosed down and continued a descent until it contacted the ground, no fatalities. Visibility varied from one-half to three miles in fog. Takeoff was away from a lighted, built-up area towards an unlighted, open area. Aircraft was operating normally, according to the pilot's testimony. Outside vision was obscured by the reflection of the landing lights against the fog. The pilot turned the lights off, the engineer prepared to reduce power, when the co-jock saw a fence ahead and shouted "pull it up." The aircraft hit the ground almost immediately and skidded 1,600 feet before stopping. CAB cited sensory illusion and failure of the pilot to maintain full vigilance over the flight instruments during takeoff! This accident is pertinent to our operation in three respects. First, it exemplifies an accident which can occur without an overly adverse condition. In other words, that which can't and shouldn't happen does! Secondly, it brings to light the possible effects of sensory illusions. Third, and

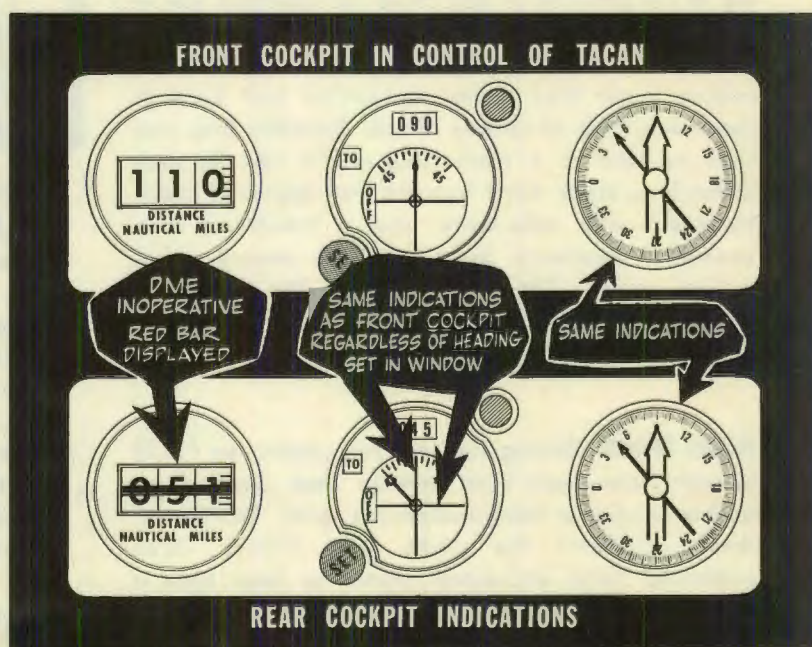
not least, fog would have to be brought in as a contributing factor. Incidentally, we are getting into that time of year when fog rolls in and the field can go from VFR to IFR conditions in a matter of minutes. It would be well to keep current with the tower on temperature — dew point spread during all night local flights.



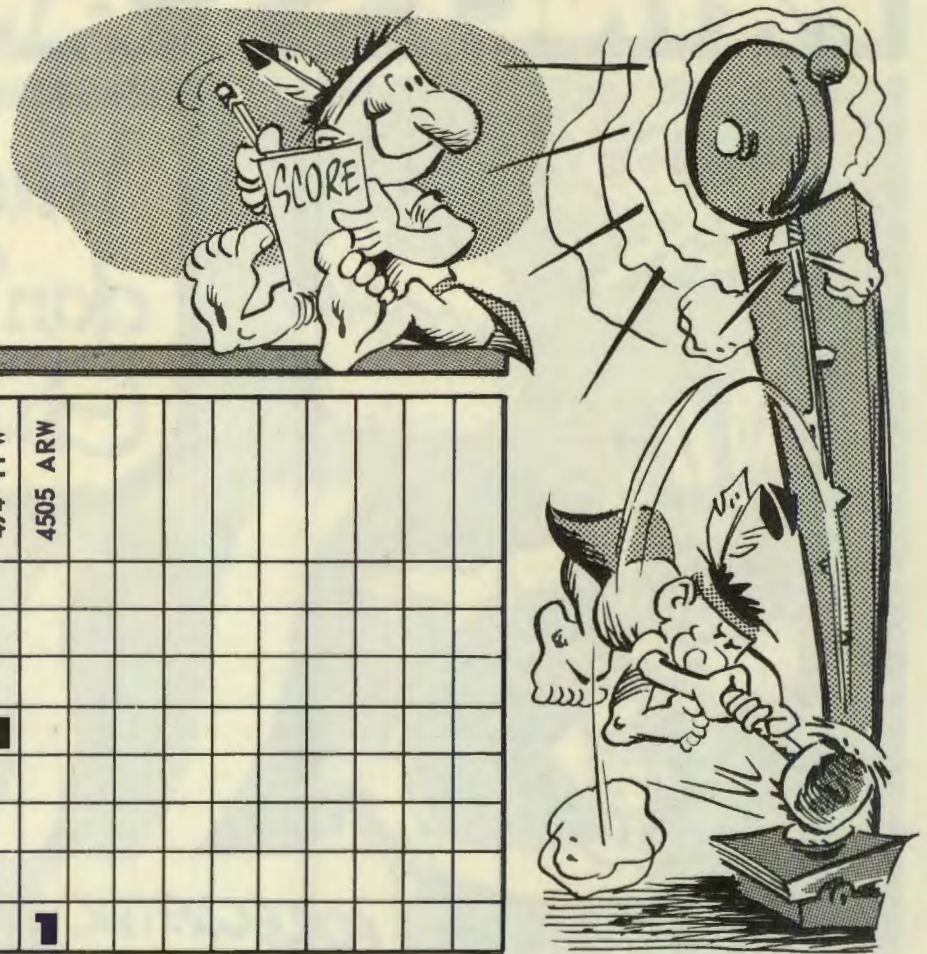
SOUND KNOWLEDGE. Here's a tip on VOR Ground Transmitting Stations. FAA operated stations shut off their station identification during periods of scheduled maintenance. This lets the pilot know that the facility is undergoing maintenance and the station may be unreliable even though everything appears normal on the I.D. 249 indicator. Stations that have no identification signal should be considered unusable.

TACAN TROUBLE. Many unnecessary write-ups have been made since the TACAN units were installed in "F" type Super Sabres. The diagrams indicate which instruments work together. We do not mean to infer that this is only true when you are inbound to the station on a heading of 090°, 110 NM out. Incidentally, after starting (F-100D/F), turn the TACAN selector switch to the receive position and allow the set 90 seconds to warm up before switching to the T/R position. The relay is likely to fail if this procedure is not followed.

—Maj Hall
401st Tactical Fighter Wing



TAC TALLY



FEB. ACDTS.	4510 CCTW	433 TCW	464 TCW	31 TFW	479 TFW	140 TFW	27 TFW	474 TFW	4505 ARW										
F-105																			
F-104																			
RF-101																			
F-100							21												
F-86						1													
F-84																			
T-33																			
CONV.			1						1										

ACCIDENT RATE

1 JAN. - 28 FEB.

TYPE	1961	1960
F-105	0	0
F-104	27.2	60.0
RF-101	0	0
F-100	16.7	15.1
F-84	45.7	0
T-33	0	7.4
B-66	0	0
KB-50	15.9	0
C-130	0	0
C-123	22.4	0
ALL	10.6	9.4

Many commanders have written the Editor asking why their units have not been included in the above listing. Each has been answered, but to make our reasoning common knowledge, we will restate. TAC has the aircraft accident prevention responsibility for over 100 units and there just isn't enough space to list all of them. Consequently, starting with this issue only those units that have experienced aircraft accidents during the calendar year are being listed. We hope that by the end of the year the space allotted will be sufficient. Current USAF statistics by aircraft type are no longer available; therefore, accident rate comparison in the future will be made with TAC rates for a comparable period of the preceding year. Accident rates do not include Reserve Forces aircraft since, at the present, flying time data is not available. When this data becomes available Reserve Forces rates will be included. Inclusion of a "Congratulations" page in future issues of the magazine is being considered. Units and individuals receiving USAF or TAC awards will be listed on this page.

PRINCESS ANN says:

When you Fly
don't rely on
Guesses ...

NOTAMS

FORECASTER
SERVICE

...use the
Facilities
your Base
Possesses

