

FEBRUARY 1963

TAC ATTACK

TAC Attack February 1963 Corrosion



CORROSION

TAC ATTACK



GENERAL WALTER C. SWEENEY, JR., COMMANDER
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COL JAMES K. JOHNSON, CHIEF OFFICE OF SAFETY

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COVER PHOTO

4505th CAMS corrosion control team working a KB-50

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Eddie Rickenbacker ...on SAFETY

Eddie Rickenbacker... on safety



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MEMBER OF THE
NATIONAL SAFETY COUNCIL

OFFICE OF THE
CHAIRMAN OF THE BOARD

December 10, 1962

Colonel James K. Johnson
Tactical Air Command
United States Air Force
Langley Air Force Base
Virginia

My dear Colonel Johnson:

I regret the delay in answering your letter of November 26, due to my absence from the city. Naturally, I am delighted to have contributed in my humble way a lifetime of experience in developing safety, not only in military aviation but also aviation transportation.

Through the hard way I have learned that human nature is the same the world over, from one generation to another, and there were always four major projects in my activities with reference to safety in the cockpit. Number one, the elimination of financial worries; number two the elimination of sex problems; and number three, to reduce the paper work in the cockpit to a minimum, and number four, constant training and refresher courses brought up-to-date since, here again, human nature is the same - prone to forget.

I hope the above will be of some value in your approach to such a worthy effort.

Most sincerely,

Eddie Rickenbacker
E. V. Rickenbacker
Chairman of the Board

EVR:bm

SAFE WAY OUT

Safe way out

DEPARTURE WAS NORMAL and we were climbing thru 20 or 21,000 feet when Lt Able in the number four slot reported a vibration and engine surges. Red Lead told him to make a 180 and for me to escort him back to Bayon AFB. Lt Able leveled at that altitude and after completing the turn reported a couple of explosions. I observed flame coming from the tailpipe extending about eight feet behind..." Capt Bradley paused to light a cigarette.

The flight safety officer turned to the slender lieutenant standing quietly by the window, "Jack, what did it sound like from the cockpit?"

"Sir, the first vibration and surging were what I'd call moderate. They only lasted between two and four seconds. Right away I checked the engine instruments and they were normal. I didn't want to take any chances because I'd never felt an F-100 vibrate like this before. I called the colonel, who was leading. He didn't understand me at first. The vibrations came again and I repeated the call, then he told Capt Bradley to escort me to Bayon.

"The vibrations came again during the turn, followed by three rapid explosions which felt like compressor stalls. I guess this was when Captain Bradley saw the flame coming from the tailpipe."

"What happened, next, Brad?"

"Well, Neal, we went to guard and squawked emergency. I'd say we were about 50 or 60 miles out...we contacted the tower and told them about it and then I sweated him out." He inclined his head toward the lieutenant, "You reported more compressor stalls and high EGT and each time I could see flames coming from the tail pipe. Apparently you were losing thrust because my airspeed dropped to 220, then we started down."

"Right. At first the EGT re-

turned to near normal following each series of compressor stalls but the vibration interval became more frequent and so did the compressor stalls. Pretty soon the EGT stayed at 700 degrees. This was when the oil pressure went up to 55. About 30 miles from Bayon, compressor stalls were almost continuous and Capt Bradley told me to try the emergency fuel system"

"Yeah, when he did, the flames immediately came out in a steady stream that shot about eight feet



hind his aircraft."

The flight safety officer nodded his head. "Probably gave a higher overschedule of fuel than the normal system, considering everything. You turned it back to normal right off?"

"I sure did. I also hit the airstart switch but the engine flamed out shortly afterward. Oil pressure at the time was 70, EGT about 900° and the equipment overheat light was on. I stopcocked and tried an airstart at 40%."

The flight safety officer frowned. "That wouldn't do much for you, Jack. With all the overtemp prior to flameout, the engine would have been beyond that."

"I guess so" the lieutenant replied, "But I had time, and didn't want to miss any chance to save the bird. I did get a re-light on about the fourth try..."

"That's when flame again me out the tail pipe in a steady stream and the skin started to discolor. I wasted no time telling him to shut it down. I might add that he dropped his external load just before flameout. The type seven pylon didn't go, but before I could advise him, he was flamed out and too busy to drop it. Besides it was obvious he'd never make the field. He made the ejection at about four or five thousand. I was about 50 feet above him when he went and that rocket seat put him well above me. It was real effective. He was almost 200 feet above the aircraft when the chute opened."

"It sure was. Before ejecting I put everything loose in the data case except the clipboard and checklist. They wouldn't fit. I put them on top the C/P altimeter then trimmed the aircraft and slowed to 150 knots. After I made sure it would stay headed for a clear area, I checked the zero

lanyard to see that it was attached, made sure my chin strap was tight, got my feet well back, chin tucked in then pulled the handles. Windblast was surprisingly mild. I squeezed both triggers. The seat started out real slow, just like the TV shots of the astronauts going into orbit. It was real positive without any jolts or discomfort.

"The windblast increased and I closed my eyes, but soon reopened them. When I reached what looked like peak trajectory, just after rocket burn-out occurred, the seat started to tumble. I concentrated on releasing the handles and pushed free. Parachute opening shock was mild.

"The risers were twisted but were easy to straighten and I saw the aircraft go into the trees right where I had pointed it. My landing was moderate and I used the quick release to keep from being

you're jump qualified aren't you?"

"I sure am, and that really helped to keep me from getting excited. I knew just what to expect."

Capt Bradley grinned, "He was a darn sight cooler than I was... when I saw all that fire coming out the tail pipe... whew!"

"I couldn't see the fire. I guess that helped."

"By the way," the flight safety officer observed, "You took an unnecessary chance when you hooked your zero lanyard. That thing is real good below, say, 2000 feet. Above that altitude you really shouldn't use it."

Capt Bradley raised an eyebrow, "Why's that?"

"Well, the chute opens too quickly and is far more apt to get tangled in the seat. Also there is more danger of being struck by the seat than there is when using the normal delay feature.



dragged by a stray gust of wind. Two farmers drove up on tractors and a chopper arrived, and well, I guess that's about it."

"Good show." The flight safety officer observed. "By the way,

A small point, and I hope you don't need to apply it."

"Yeah, but well taken, it's the small points that cause the big troubles."



TAT'S YOUNGUNS ARE a rather air minded bunch and were right enthusiastic the other weekend when we blew the dust off our commercial license and took 'em out to the local air pasture to give 'em a ride.

The local operator owns a Mooney Mark 21 and having heard several good reports on the machine, we decided to give it a try. As luck would have it, the manager was up in another bird when we arrived and his assistant informed us we'd have to have his boss's O.K. While we waited, he volunteered that we'd need 200 hours total time. When that failed to discourage us, he said we'd need 50 hours of retractable time. We allowed that we could qualify.

When the boss man finally arrived, he asked how much retractable time we had and we gave him a conservative estimate. The assistant whistled and said, "That ought to satisfy the insurance people!"

Frankly, he almost got a chance to find out... but leave us not get ahead of ourself.

Preflight was short and sweet - but delayed by TAT's natural curiosity toward aircraft. A curiosity that gets more pronounced just prior to flight. The interior check was also short and sweet. Although the little machine isn't much more complex than some late model automobiles, the cockpit was strange and

the instrument arrangement more so. Another character was waiting for the aircraft and the checkout pilot was going through his explanations at a right rapid clip - interrupted only by our questions. So, before we knew it, the engine was purring nicely and we were fumbling with the strange radio and strange frequencies trying to get taxi clearance.

Two quick trips around the pattern completed the check out. The bird handled beautifully, but we had a little trouble mastering the manual gear retracting system. It works simply enough, but takes some getting used to. Fortunately, it is extremely quick.

We got out to help load the wife and kids, and with everyone strapped down, restarted the engine. No sweat. Had trouble with the radio and had to use an alternate one. Got out to the active and couldn't get the tower. Fussing with the strange radios and trying to memorize frequencies made us wish for our trusty knee board and pencil...but eventually we got squared away, pointed the Mooney down the active and whipped up the horses. At about 55 or 60, we came back on the wheel and were soon airborne. At about 20 feet, climbing nicely, we muscled up the gear, eased back the throttle and reached for the prop pitch. That's when the engine quit. No, we hadn't.

oved the prop pitch, so it couldn't have been a use of getting the mixture by mistake. We made a hurried sweep of the office, but it was too much of a stranger...we didn't see a thing!

Fortunately, there was still some runway in front...just enough...we started to concentrate on a landing, then remembered the gear and whumped it down some seconds before touchdown.

What happened? Blush, your old TAT or one of his kids had bumped the fuel selector part way out of the notch! It let enough fuel by to run the engine in idle and little else. We were operating on the theory that when everything was set correctly for the first flight, we need not recheck everything... a rather bum theory.

Lesson learned cheaply this time...except for having to listen to a bunch of disappointed kids grumble.

OVER THE RT the other afternoon... "Andrews tower, would you advise the Gooney bird in takeoff position that he still has his rudder lock on?"

How about that! And in this day of check lists, standardization and professionalism. Just for kicks TAT checked the Gooney dash one. These troops overlooked item number one of a two item exterior inspection, and item 13 (very appropriate) of a 24 item before takeoff check. What we least understand is how anyone can taxi a Goon any great distance without noticing a locked rudder.

CLIMBING THRU 13,000, severe fuel flow fluctuations forced an 86 pilot to declare an emergency with the Air Defense sector he was working. They obliged with a vector to a nearby Marine Air Base. The pilot asked if he should go Guard, received no answer and remained on the tactical channel. The controller gave him an approach control frequency - weather was clear but visibility was two miles - and he contacted GCA on that channel. They advised that he was number two in the GCA pattern. He declared an emergency and requested a flameout pattern. GCA told him to try the tower on channel one. He made contact, but was told to go to another frequency. He complied, but someone was reading off a lengthy clearance. Very patiently, he returned to channel one, declared an emergency and requested the active runway... eventually landing without any more sweat.

A loose lead to a fuel pump caused the emergency and a little loose thinking caused the radio runaround. We ask, why go GCA when you don't want GCA? Why go channel one for a Marine tower who monitors one

but may have it tuned down. Guard, here, would have been the logical choice. For an Air Force tower, we'd have gone to normal tower frequency. You can't make rules for this kinda stuff, so use common sense!



CALLING DOCTOR KILDARE! CALLING....

SHORTLY AFTER a TAC pilot raised the gear following takeoff, a thud, vibration and chugging told him the engine in his F84F was giving trouble. Exhaust gas temperature was up to 780 degrees, so he eased power back. At 90%, the EGT dropped within limits and the chugging stopped. He climbed to 9000 feet and called the command post for instructions. An IP in the command post correctly diagnosed the trouble as a partial turbine failure--he lost 27 buckets--and advised the pilot to land from an SFO pattern. The pilot followed his advice with good success.

As we have said before, it is rather difficult to argue with success....but....something bothered us about this emergency even tho no one broke anything. A dull thud will startle us, but will induce no action. Vibration will do the same. Either will make us get concerned about instrument readings. Finding EGT over the limits would then tell us that the thud, chugging and vibration were due to some sort of engine failure....and we would proceed without haste, but without wasting any time, to a high, wide base while keeping power at the exact spot this troop kept his.... just as high as possible without inducing an overtemp. If we reached low key, fine. If not, we'd settle for a high base leg. Our radio calls would be oriented toward getting other traffic clear of the area.

Using the command post to help diagnose an emergency is fine thinking when things aren't crucial... but not all emergencies are going to stand by long enough to permit using this approach, and as pilots we must never forget that the ultimate decision on the correct course of action is always ours.



YOUR OLD TAT went out to the local flying pasture the other afternoon for his weekly chance to cheat death . . . was scheduled for two go's at it, the second at night. Number one went smoothly enough except for a duel with a U-3. Everytime we turned final from an SFO or no flapper, there he'd be. We were working different channels and it was quite hazy. Neither helped . . . but we're still wondering why we were always the one who took the wave off.

As the sun made its bleary way toward the horizon, it got harder and harder to see . . . we had a slight tail wind during landing . . . and certainly no one was enjoying looking into said sun, but no one bothered to suggest to the tower to change runways. Guess we were all too stupidly proud. The tower could have taken the initiative, but us fly boys were the ones being bothered. The tower could see no sweat!

After completing the mission we left the bird for servicing. A fuel truck even pulled up just as we walked away. It was still there half an hour later, so we briefed a little longer. Finally, it moved on . . . we started our preflight, but found some eager beaver had come out to the bird next to ours and talked the service people into filling it. The truck was after more fuel . . . it had run out. After it returned, we stayed around to make certain it didn't stray again . . . then the fuel pumper quit . . . they'd run out of fuel. Some minutes passed before a gas truck made it out and filled the pumper. When the troops got going again, they over filled a tank. About a gallon was puddled under the wing. TAT is no chance taker, so we called for a fire truck to wash off the ramp. By the time it arrived we'd finished our preflight and cockpit checks.

A long hour and a half after our scheduled takeoff time, the airman fired up the power unit and we very carefully (this is the time for caution) continued our check, then pressed the switch to "start". Nuthin' happened. We made a real fast recheck of the circuit

breakers . . . all were in. We had the colonel (this' never happen to a Lt!) try his start switch from t aft seat. Still no response. Long pause . . . finally, from the rear seat, "TAT, let's call it quits. When this many things go wrong it isn't wise to fly."

We agreed 100 percent . . . if we'd wrangled another bird we might have hurried our checks and skipped an item . . . or at the very least gone the whole flight wondering if we had forgotten something. Altho the colonel didn't get his instrument ride, we didn't really need the night time . . . Sour grapes?

A NAVY PHANTOM pilot started a gradual climbing turn from 1500 feet at 300 knots. Suddenly, a control malfunction caused the aircraft to rotate about all three axes. The pilot turned off the STAB-AUG, but gyrations about the lateral axis increased, leaving him up against the top of the canopy. From this doubtful vantage point he noticed both generator warning lights were on and extended the emergency generator. He then ordered the R O to eject.

The R O complied, but negative G forces kept the pilot from reaching the face curtain until the next pitch oscillation. After the pilot punched out, the aircraft righted itself and flew for 26 miles before it crashed.



HOLD 'ER NEWT! SHE'S A REARIN'

TAT took one look at the altitude where this bird started its bronc act and scrubbed all thoughts we might have had about making the usual arm chair evaluation of the pilot's evaluation of this emergency. Besides, last year some right fine TAC pilots killed themselves because they stayed with their birds just a little too long. It looks like two more have done

same thing already this year.

At the very least, these Phantom Pushers are around to be embarrassed by their birds' sudden decision to fly solo... and they can always remind critics of the KC-97 crew who abandoned their burning bird only to have it fly almost halfway across Canada.

OLD TAT was preflighting for a night flight the other evening when all the fire trucks rushed to a nearby taxiway. We could see a T-bird... but the gear appeared down and no one was squirting any foam, so we went back to our preflight.

Shortly, a couple of pilots came riding by in a maintenance pick-up. Being curious, we stopped 'em to find out what was up.

"Threw a bucket on takeoff. Aircraft started shaking and grinding just after we raised the gear. I gave the tower a call that I was turning downwind for a closed pattern and brought it on in... tried to add power to taxi, but it shook so bad I shut it down. Funny, sometimes you can throw a bucket and never know it, but not this time."

This is the third aircrew we've talked to in the last three or four months who've had a bucket let in flight. Considering that this is from one outfit, flying perhaps eight to twelve sorties per day, and that we only heard of these more or less by accident, and it begins to be apparent that a problem exists. A serious problem.

Checking, we found that fifteen T-33 bucket failures were reported during the first eleven months of '62. We suspect that this is unrealistic and low. We know for certain that at least one such mishap was never officially reported as an incident.

The local unit has been complying with the suggested engine operating restrictions... 98% climb power, 96% max cruise... etc. It will take new buckets to cure the problem, but they are still in the distant future. Meanwhile, you can help prevent a failure by faithfully recording all over temperatures (anytime the temp goes over 900° during start, or stays above 715° more than 20 seconds on start or in flight). You can stop many over temperatures by moving the throttle slower on all ground accelerations. We've noticed that almost all pilots send the temp up past 700° just moving out of the parking area... obviously this is completely unnecessary.

Don't go to extreme altitudes if you can keep from it... if possible, back off your power anytime the

temp gets in the upper 600's... in short, baby the old brute. Many of these engines could wear a star and some could add the wreath... but if we aren't careful, the wreath will be on someone's grave.

One additional item. Bucket failures are reportable incidents. You help yourself by reporting them.



THE PHONE RANG, "Flyin' Fish Wrapper, TAT talking."

"Who?"

"TAC ATTACK, Major TAT, ah sir."

"Sir, this is Airman Jones from the 4500th CAM... were you flying that T-bird that flamed out taxiing to the runway last night?"

"Affirm."

"Which cockpit were you in, sir?"

"Aft."

"Sir, would you mind bringing us back the seat pins. We gotta work on that thing and, well, the damn seat is hot!"

Proof of how a minor distraction can lead to a simple error which in turn can have major consequences. Yeah, the critter flamed out during the emergency fuel system check. We were giving the troop up front transition and were reading off the check list over the interphone as per local policy. He was making the checkout on the taxiway, also as per policy, when everything got very, very quiet. We immediately dropped the check list, warned him to leave the switch in emergency, to stopcock, turn off the ignition, and such. Ho! We should have paid equal attention to our own chores. Anyway, we got another free reminder to proceed with utmost caution whenever our normal routine is shattered or molested by the unexpected.

—TAT—

feathered



WHILE INSTRUCTING a few years ago, I pulled an engine on a student as he was practicing a turn pattern. Seconds later, with the aircraft on its back, I managed to turn the fuel selector on again. We recovered from the maneuver after losing 4,000 feet and I vowed to forever refrain from giving a single engine while in a steep turn.

Some months later, while practicing stalls and slow flight, I gave a routine single engine. In just a few seconds we stalled and fell off in a flat spin. I turned the

fuel selector back on and using rudder boost and full power from the engine on the inside of the spin, we recovered after losing 5,500 feet. That was the last single engine I've ever given in slow flight.

The next spring, while flying along straight and level at 7,000 feet, I reached up and turned off the right engine fuel selector. My student unhesitatingly carried out single engine procedures. After agreeing that the right engine was dead, he reached up and feathered the left engine. I immediately turned the right engine fuel selector on, reduced power and unfeathered number one. We lost 2,000 feet. I then decided to give single engines by securing the fuel selector to the left engine so I could protect the right engine feather button.

Later in the spring, I initiated single engine practice by securing the left engine fuel selector. My student carried out the procedures perfectly until it came down to turning off the mag. He reached up and turned off the mag to the good engine. With cat-like alacrity, I reduced throttle and turned the mag back on. We lost 1,000 feet. From that time on, I have protected the right engine and associated controls like a watchdog.

Summertime was upon us as I gave a bright prospect a routine single engine. I sat there and marveled as he methodically carried out the checklist with professional adroitness. When it came time to return the engine to the line, things went to pot. The feather button hadn't popped out after the engine was secured and all the oil had been pumped into the engine from the tank. My bright prospect took us home single engine. Thereafter, I

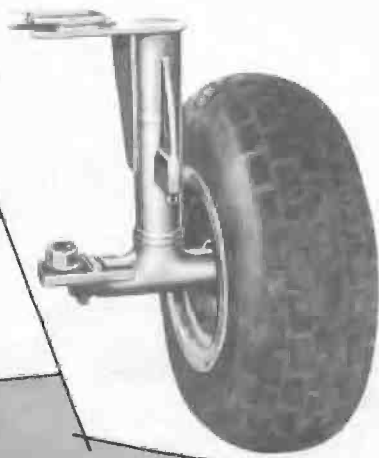
checked to see that the feather button returned to neutral with 10 seconds of being actuated.

Came the fall and on a climb-out from the night bounce pattern, backfiring and associated swerves served notice that everything was not normal. As the rudder boost was turned on and the props shoved forward, the backfiring ceased. The student pilot, certain that backfiring had come from my engine, added full throttle to number one. I looked at the gauges, saw 50 inches on number one and 30 inches on number two and asked the pilot if he was holding left rudder. He confirmed that he was holding left rudder and I announced, "I'll feather number two!!" Home field was four miles ahead and we started a straight-in to the duty runway. Over the threshold, number one engine froze from oil starvation. We glided to a landing and a short while later discovered we had made it with the aid of an eight-cylinder engine after having feathered the good number two engine.

In early December, while flying along in very cold air, I was demonstrating the use of the de-icing equipment. With all systems going, I gave the pilot a single engine. He secured the left engine with great skill. Suddenly, the ICS and all radios went dead. I had put all that electrical load on the starboard D.C. generator and it had sheared a shaft. We had a dead battery, too. After landing single engine I decided to check the electrical load before giving single engines.

I then went on Christmas leave. When I returned, I was made a ground training instructor (and just when I had learned all the angles to giving a single engine!)

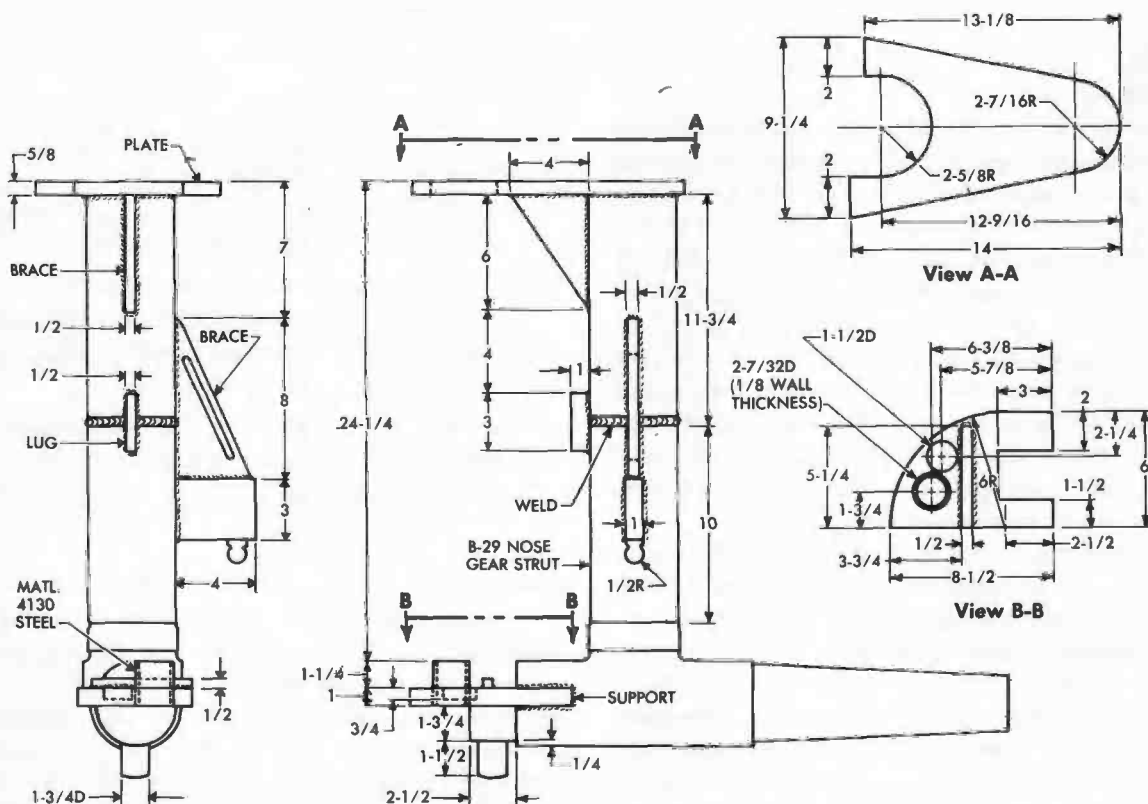
—USN Approach—



"CRUTCH STRUT"

Changing an F-100 tire on a busy runway can be almost as dangerous as changing a flat on a busy freeway. Back in 1958, a couple of sharp troops from Wheelus Air Base, Tripoli, solved this problem by improvising a crutch to speed up getting flat-footed F-100s off the runway. The need is still here . . . yet few units have elected to make this

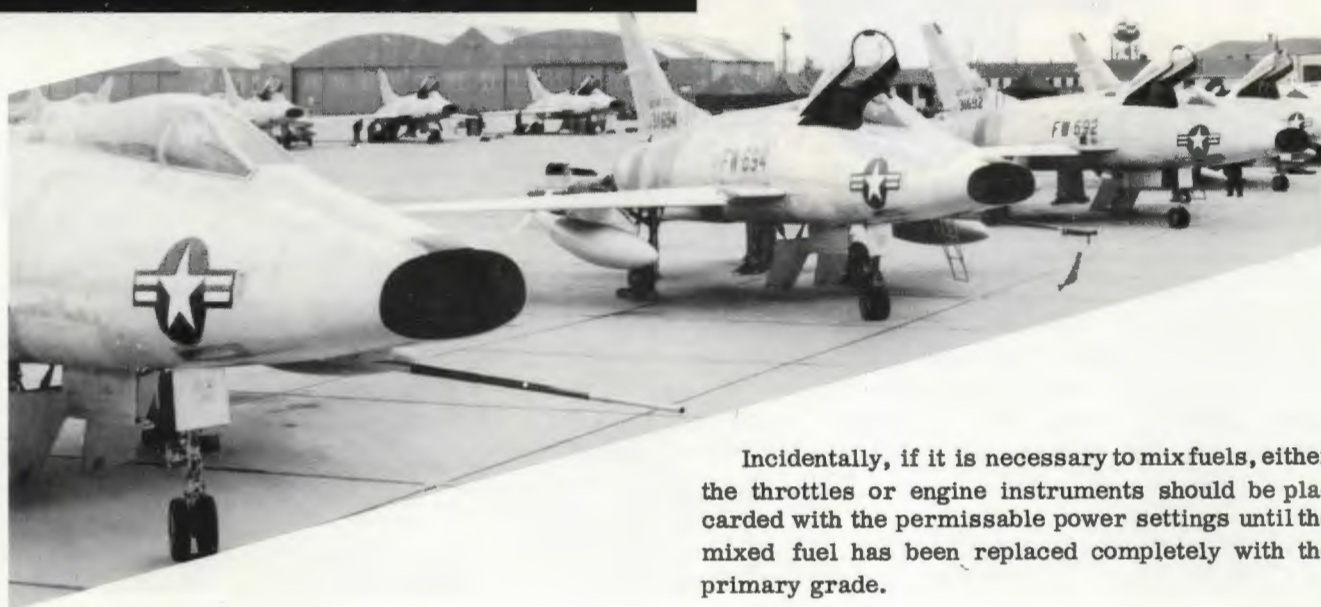
rather simple device. We're reprinting plans for the crutch, which were originally printed in NAA Service News, in the belief that a couple of them might be handy around your base. Incidentally, the original crutch was made from a salvaged B-29 strut and axle assembly . . . other salvaged units could be used.



NOTE: Material 1020 steel except where otherwise noted.

Chock Talk

chock talk



Incidentally, if it is necessary to mix fuels, either the throttles or engine instruments should be placarded with the permissible power settings until the mixed fuel has been replaced completely with the primary grade.

MIXED DRINK

Two engines of a C-123B from another service were overboosted and had to be changed because of mixed fuel. The aircraft was reserviced at a transient base with 100/130 aviation gas because 115/145 was not available. The pilot compensated by operating the engines at lower power settings. After returning to homeplate, most of the remaining fuel was drained out and the aircraft refilled with 115/145. On the next flight, the pilot knew about the situation, but thought that the percentage of low grade fuel was small enough to give the equivalent of 115/145 grade fuel. He used normal power settings for takeoff and a low torque reading at liftoff spelled out the mistake.

When changing from one type of authorized fuel to another, it is not necessary to drain the aircraft fuel system before adding the new fuel. However, the engine operating limits should be for the lowest grade of fuel in the tanks, regardless of the percentage of mixture. We haven't determined how many subsequent refuelings with the primary grade fuel are necessary before normal power settings can be used... therefore, if the mission demands full rated power, all fuel should be drained right down to the last drop. Engines cost more than a tankload of fuel.

CONTROL CHECK

Here's a simple way to check the proper operation of the relief valve installed in the F-105 flight control system by T.O. 1F-105-711:

- * After completing the RAT check, move handle to midposition. P-1 pressure should drop to zero.
- * Stick should move freely in pitch.
- * Stick should move freely in roll after initially forcing it thru full travel to push trapped hydraulic fluid out of the system.
- * Return RAT handle to full aft position. P-1 pressure should return to normal.
- * Check stick for full travel in all directions.

SUPERVISION

During the next few years many of our senior supervisors will be retiring. The aircraft maintenance field can be seriously affected, since it is essential that we have qualified and experienced personnel working on our aircraft. We must be extremely careful and on the alert for unsafe conditions and practices if we are to prevent an unfavorable accident trend. Don't retire supervision!

MINISTER SELECTOR

Out at Nellis a test pilot found a fuel selector switch on an F-105 that would rotate fully clockwise back to the OFF position. There is supposed to be a mechanical stop to keep it from going past the MAIN TANK position clockwise. Needless to say, the pilot wrote it up and the particular bird is fixed, but it could happen again in another bird which could be embarrassing in flight.

PREVENT PIN PANIC

Have you ever tried to insert the gear pins at night after landing with an unsafe gear or with hydraulic failure? In a letter to the Approach magazine, a Navy airman suggested marking the holes or clamp spaces with orange reflector tape or paint. Sounds like a good idea—might even try the same technique on the ejection seat safety pinholes. Some of those holes are hard to find at night, even with a flashlight!



F-105 LID LOCK

A needless abort was caused when an F-105 pilot taxiing out for takeoff found that one of the canopy locks was installed backwards . . . Murphy's law figured in. Seems that another pilot on a previous flight had noticed one of the cockpit flood lights improperly attached to the canopy lock bracket and wrote it up. A mechanic removed the canopy lock to reposition the light and then reinstalled it backwards.

He slipped-up when he forgot to check the canopy lock mechanism after completing his work.

TAC ATTACK

TRAIN TRAINING

From the Nellis AFB QC Comment: "Saw an MA-2 pulling two trailers down the flight line. The trailers started to whip a little and then one of them tipped over! Maybe a little too much speed? If you see a combination like this coming down the flight line, give it plenty of room! Then report it to the man in charge."

SCAVENGE ONE

A crew chief at one base tried to schedule an F-100 for a test flight with one of the wing scavenge pumps inoperative. The discrepancy was carried on a red diagonal in the aircraft forms. This should have been a red cross item and corrected before trying to schedule the test hop.

DEFICIENCY REPORTING

Judging from UR's, Ops Hazard Reports, Incident Reports, Accident Reports and similar correspondence from you people in the field, not all of you know the correct way to report deficiencies. To help you, we've listed the more common problems along with a brief description of how they should be reported or a reference to the regulation that tells how.

- * When a piece of Air Force equipment or a supply item gives trouble because it was poorly designed or was not built or maintained correctly, UR it using T.O. 00-35D-54 and AFR 66-30 as a guide.

- * If you believe an aircraft or missile system, piece of equipment or component should be modified, submit a modification proposal as per AFR 57-4.

- * To change a Flight Manual or Stan/Eval manual, follow AFM 60-2 and send in AF Form 847.

- * If you receive a shipment that was damaged, in poor condition because it wasn't packaged well enough, or was loaded, unloaded, handled or marked incorrectly. . . report it on Form 6 after checking AFR 71-4.

- * Shortage? Overage? Wrong condition, status, identity? or just mis-shipped? Haul out AFM 67-1 and squawk on AF Form 67-1.

- * Something wrong with a standard item of medical supply or equipment that is listed in the Medical Stock List, USAF Stock List SL-6500? Report it to the Chief, USAF Medical Material Field Office in accordance with AFM 67-1 (Vol. V, Chap. 10.)

- * Something wrong with a subsistence item? Weevils in the flour? Make your report in accordance with AFM 145-1.

* To propose a new allowance document or change an existing one, check Volume XXI, AFM 67-1. It is your guide.

* When cryptographic equipment is troublesome or not made right, use Volume 1, AFCOMSECM 3 as your guide.

* To correct or improve an established administrative system, procedure, method, publication or form, write a letter thru channels to the office of primary interest.

* If your problem concerns real property as defined in Paragraph 1-2, AFM 93-1, make your report in accordance with AFR 88-10.

* An offshore contractor under contract to AMFEA creating problems due to poor workmanship? A letter to the Commander AMFEA (EFPD-Q) is the cure. Use AFTO 29 to give detailed info, if you wish.

* Faulty equipment purchased locally off-the-shelf from a local merchant should be made right by the merchant even tho such items are designated in a supply catalog or stock list for base procurement. This does not apply to Special Purpose Equipment as designated by Air Force or Technical Services, or to items procured thru GSA or other services.

* To process a civilian suggestion use AFR 40-12 as your guide. To forward a military suggestion use AFR 35-12.

* To correct an inaccurate T.O. follow T.O. 00-5-1. Policy changes to the system require a letter thru command channels.

* Stock list or supply Catalog in error? Try AFM 67-1, Chapter 7, Part 1, Volume 1 and USAF S-1 Paragraph 8.11.

* When something is wrong with an Administrative Motor Vehicle, report on DD Form 1362 as per AFM 77-1.

* To report illegible, incomplete or conflicting technical information on drawings, specifications and standards write a letter to the Standardization Branch, Material Service Division of the AFLC installation responsible for the item. .or as noted in Supply Publication S-1-5.

* To get safety information passed around the command, write the editor of this magazine!

FOR WANT OF A NAIL

Once upon a time we assigned a crew chief to each of our airplanes and issued him a tool box stuffed with an assortment of tools which he could use to inspect, repair, replace or adjust almost anything on his airplane. In addition, we told him how

to use and care for these tools.

When we transitioned from the crew chief to specialized maintenance system for maintaining aircraft, we were faced with many problems. Some have not been solved and one of the unsolved ones concerns tool procurement, issue and replacement. . getting the proper tool at the proper place at the required time. We continually encourage our mechanics to use the proper tools but in too many cases don't insure that they are readily available. Many times mechanics and specialists arrive at the aircraft without adequate tools or test equipment to accomplish the job. They attempt to complete it either with a substitute tool, such as water pump pliers, or waste valuable time going to and from the shop or tool crib to get tools they need.

Sometimes when tools and test equipment are not available, specialists will take reparable from the aircraft to the shop when they could have repaired or adjusted them more efficiently on the aircraft. There are, of course, many cases where it is more desirable to take defective or suspected components to the shop for bench check, repair, or adjustment.

Our primary problem area is probably in the flight line maintenance function because this is where we are most susceptible to unsafe acts. For example add together a scheduled aircraft, a scheduled crew and an unscheduled maintenance malfunction. A dedicated ground support crew attempts to correct the malfunction with the least possible delay, but without proper tools. . . perhaps building an unscheduled accident. We should provide these mechanics with the best tools and equipment available, since they are the ones who in most cases will make the "go," "no go" decision.

Quoting AFM 66-1: ". . . Not only are more specially calibrated tools (torque wrenches, etc.) being used daily by every mechanic, and an increased number of labor-saving power-operated tools have taken on increased significance. . . The quantity and cost of the tools are such that they may be placed in a tool room and issued as required. . ." There are ways to justify changes to tool authorizations; however, the road is rocky and not traveled too frequently. But since we make maintenance supervisors responsible for finished products, operationally-ready air vehicles, why not give them the necessary tools to do the job?

The present system can be improved to provide increased efficiency, more savings, better morale and certainly more safety. Let's all work toward this end.

UR's AND UR's

Many units still do not understand how to request engine teardown deficiency reports, how to report technical order discrepancies or when to submit unsatisfactory reports.

Attachment two to AFR 127-4 tells how to request a TDR. In effect, when investigators and technical advisors cannot determine the specific cause of a failure or malfunction, they should request a priority TDR from the prime commodity AMA.

T.O. 00-5-1 tells us to use AFTO Form 22, Technical Order System Publications Deficiency Report (RCS: AFLC-K114) to report deficiencies in official copies of publications.

Section II of T.O. 00-35D-54 tells how to submit a UR to report a critical safety hazard. Section IV tells how to submit Quality Control Deficiency URs.

If you will conscientiously follow the instructions contained in these directives, the deficiencies you report will receive prompt attention.



F-101B BRAKE FAILURE

The pilot of an F-101B stopped the aircraft with the emergency brakes when the normal brakes failed as he was taxiing from the parking area to the runway. The antiskid accumulator was 40 psi below

normal, although on the preflight, two hours earlier, it had been all right. Maintenance recharged and checked for leaks. None were apparent and the brakes worked satisfactorily so the pilot taxied out and took off. The brakes failed again when he landed. The accumulator still registered 130 psi, but investigators found considerable air in the brake lines. Apparently the accumulator had not been adequately serviced or the brakes adequately bled when one of the struts had been previously removed for inspection.

COCKED NOSE GEAR

A T-33 nose gear indicated unsafe after takeoff from a slush-covered runway. The gear was cocked about 35 degrees to the right. The pilot tried unsuccessfully to straighten it by making a touch and go landing. He then landed the aircraft in a foam strip. The nose gear straightened as the aircraft left the foamed area. Investigators found approximately one-half inch of water in each shimmy damper.

A CROSS IN TIME

A pilot aborted a test flight in a T-33 because the UHF radio was inoperative. The maintenance section could understand the pilot aborting, but couldn't understand why he put the aircraft on a red diagonal. If a discrepancy is serious enough to cause an abort, it is surely serious enough to deserve a red cross in the forms!

FOULED U-BIRD

A reminder to U-3 owners...spark plugs should be inspected and rotated top to bottom every fifty hour postflight to reduce plug fouling. Fuel octane has little effect on fouling; however, too lean a mixture, incorrect timing and carrying high power settings for extended periods all cause it.

QUESTION OF THE MONTH

The handbook for general torque wrench instruction is:

- | | |
|------------------------|--------------------|
| (a) T.O. 32B14-3-1-101 | (c) T.O. 32A-1-502 |
| (b) T.O. 33H-4-4-1 | (d) T.O. 44B-1-1 |
-

Unlike most units faced with a serious corrosion problem, the 4505th CAM Squadron grew tired of waiting for adequate corrosion control facilities and decided that the only way to control a continually worsening problem was to get busy and do the job with the materials at hand.

Very shortly, after reaching this decision, the 4505th had in being the best corrosion control program in Tactical Air Command even tho they still have no wash rack! There was no magic formula . . . just hard work and close adherence to T.O. 1-1-2. The two airmen who started the program had no special background or training. One is an aircraft mechanic, the other a sheet metal man. Altho corrosion control procedures require parts to be brushed clean, scrubbed with steel wool, washed with various chemicals then painted with zinc chromate or treated with alodyne, these men were able to master the strange environment. As a matter of interest, the alodyne they use turns aluminum tubing a sexy shade of gold, so the 4505th KB-50's often sport what appears to be gold plated plumbing.

Benefits are many - varying from stronger, safer aircraft to easier maintenance and better inspections. It is with a great deal of pride we publish the photo highlights of this operation.



Chemistry equipment and materials in the corrosion control section.

CORROSIVE CHALLENGE

BY MAJOR JESSE L. TRENT
4505 CAM SQUADRON

MALIGNANCY IS a physical condition dreaded by the human machine. The same applies to aerospace machines, since they too are threatened. With them, the malignancy is a costly and insidious condition known as corrosion. Unlike the human malignancy, we know what causes most corrosion and can do much to control it.

With this in mind, the 4505 CAM Squadron established an aircraft corrosion control program for KB-50 aircraft in March 1962. Tech Sergeant James C. Lilly and Airman First Class Hillery M. Hill were assigned the task and were soon delving into the mystery that still surrounds the problem of corrosion.

Soon, they were training personnel and equipping their section with strange beakers and flasks along with appropriate chemicals and related materials.

The KB-50 is an excellent subject for a program of this type. Its world-wide travels carry it into every climate . . . a condition that does much to start new and speed up existing corrosion. This was the challenge faced by Lilly - Hill and company.

First, they consulted that old standby, the T.O. file. Strange as it may seem, almost all problems and questions concerning aircraft corrosion are answered by the T.O.'s . . . all one needs do is study them and apply their instructions.

Most of the technical problems were solved thru the T.O.'s with some help from the ATC school. The matter of obtaining supplies for the program was not so easily solved. After much screening and aggressive follow-up on requisitions, the necessary minimum equipment was obtained.

The actual working part of the program was then



S/Sgt Jones points to a newly treated fuel line in KB-50 flap well area.



T/Sgt Lilly discusses T.O. 1-1-2 with Airman Hill. Hill is holding the corroded flap track sway brace shown in inset. The sway brace has severe intergranular corrosion.



started, with a complete corrosion inspection of all aircraft in the fleet. The result of this inspection made it obvious that more people would be needed in the corrosion control section. Manning was then increased to eight.

From August 1962, the corrosion control program has operated quite successfully... in fact, the TAC Inspection Team commented that the 4505th CAMS corrosion control section is the best they have seen in Tactical Air Command. If so, it is the result of closely scheduled aircraft, an extraordinary amount of wet, handscarred, hard work, plus interest and initiative.

Some of the more serious conditions found and corrected by the team were: Serious intergranular corrosion of wing flap sway braces, serious corrosion of fuel and oil plumbing, especially in flap wells,

the radar section and bomb bay sections. Corrosion of load bearing areas, bearing races and around the filler valve of aircraft wheels. Intergranular corrosion of stringers, spar areas and aluminum fittings on the cowl flaps and access doors. Intergranular corrosion of wing flaps.

The program has taught that:

- * It pays to give aircraft a closer look than is normally considered necessary - you may be shocked!

- * Aircraft corrosion is not an insurmountable problem, but it must be recognized and treated with due respect by those in authority.

- * A corrosion control program requires command support in many areas, otherwise it will never get the equipment and people to do the job effectively and safely.

* A worthwhile corrosion control program cannot be operated on a haphazard basis. Constant review and research, coupled with the high potential of modern nondestructive inspection techniques using X-ray and ultrasonic devices, can greatly increase the effectiveness of all USAF corrosion control sections.

The 4505th still has a long row to hoe in their corrosion control program before the malignancy in their aircraft is completely contained...but they have made a significant contribution to the overall USAF effectiveness with a small but efficient corrosion control section.



Airman Britner mixes a chromic pickle solution to treat magnesium. Cleaning solutions are strong, and make rubber gloves and other protection necessary.



Airman Morris treats a fuel line in the KB-50 flap well area. Many of the treatment processes require painstaking hand labor.



Airmen Whitney and Parkinson remove a wheel from chromic pickle bath.



KB-50 wheels before and after receiving their corrosion treatment. Treated wheel on the left is more pleasant to work with and easier to inspect for defects.



the Last Cigarette

NICOTINE IS ONE of the most widely used drugs in modern life and, to many pilots, a cigarette seems as necessary as an oxygen mask or parachute harness. This may seem like an exaggeration, but how near the truth is it? How many pilots light up and relax while flying at 10,000 feet or more? If you are one of them or if you smoke just before going out to your bird, read on.

Tobacco smoke contains at least two poisons... nicotine and carbon monoxide. When you inhale cigarette smoke, carbon monoxide is absorbed into your blood at lung level and combines with the hemoglobin of your red blood cells. Hemoglobin has 200-300 times greater affinity for carbon monoxide than it does for oxygen. If you're a fairly moderate smoker as much as 10% of the oxygen in your blood will be replaced with carbon monoxide. This produces two effects which are important to you as a pilot... it reduces your tolerance to altitude hypoxia and decreases your ability to see, especially at night.

Normally, a non-smoker can go to a cabin altitude of 10,000 feet without having his performance seriously affected by altitude hypoxia. But if you are an inhaling smoker, your performance will decrease to a dangerous point. The amount you smoke in the hour prior to flight and during flight determines how much you will be effected. If you are bothered byague headaches, undue fatigue, and listlessness when flying at low



cabin altitudes, you may be experiencing this problem, but will seldom make the correct diagnosis. Experiments show that you inhaling smokers have far less useful consciousness at altitude. This is particularly noticeable following rapid decompression.

Your night vision may be reduced as much as 25% after smoking three cigarettes. Three seems to be a magic number to the researchers... Their experiments show that three cigarettes will give you the same effect as being 8,000 feet above your cabin altitude. They also note that if you can tolerate altitudes of 20,000 feet in an altitude chamber you will only be able to tolerate 16,000 feet after heavy smoking.

Nicotine, the second of the two poisons is more insidious. It does not burn as was once thought, but is absorbed through the mucous membranes of the mouth and through the linings of the lungs. The smoke of each cigarette contains an average of 6.8 mgm of

nicotine, and 3 or 4 mgm are absorbed from puffing just one. The nicotine causes your metabolic activity to increase, which in turn increases the amount of oxygen you will use while engaged in any given activity. How about that; the carbon monoxide you inhaled with that cigarette replaced some of the oxygen in your blood and then the nicotine sets up a reaction requiring still more oxygen. That's pretty much like nailing the lid on the old coffin. Guess that's where they got that nickname.

Since altitude tolerance and good night vision are so extremely important, it would seem wise to cut down on smoking if you want to prolong your flying career and maintain a high degree of flying fitness. However, if you must continue the habit, do not inhale heavily for at least an hour prior to flying.

No one, not even the cigarette manufacturers claim that smoking is beneficial. The Air Force has banned free distribution of cigarettes to aircrews and hospital patients, so don't look for them any more in your in-flight lunch or on the Red Cross hospital carts. The Surgeon General banned distribution of free cigarettes because he didn't want anyone to think that the Air Force condoned smoking despite ever increasing evidence relating cigarettes to lung cancer, circulatory ailments and other pulmonary diseases. The Navy is also considering a similar ban.

For those astute individuals who would like to know more about the long term effects of smoking, there is an excellent article on the subject in the July issue of the Scientific American Magazine.

You can break the habit— if you want to.



THE CAPTAIN was anything but his usual pleasant self. He had delivered his passenger at six o'clock Eastern the previous day, and had been advised by the command post to RON, so as not to violate crew rest.

The fact that he felt fine, had only flown a little over three hours, and would be returning in VFR weather, beautifully lighted by a full moon, had no bearing on the matter. It would take a half hour to turn the bird around and exactly two hours and seven minutes to fly it home . . . he'd arrive exactly 12 hours and 37 minutes after he'd reported for work that morning and this was just 37 minutes over the magic number ordained by regulation.

"I'll launch at 0600E," he'd snapped at the none too sympathetic major in the command post . . . so here he was, stumbling out of operations into the bitter morning chill headed toward his trusty T-bird. He felt worse than he had yesterday, thanks to a sway backed pad in the VOQ and all the grease he ate with the eggs he had

for breakfast.

The weather paralleled his feelings. Sometime after midnight a frontal system had passed thru leaving behind a thin layer of glaze ice on trees, automobiles and aircraft. Fortunately, the ground was warm enough to keep it melted off the airfield itself.

Arriving at his bird, the captain found it deserted. He opened the canopy and checked the forms. It had been serviced, but not preflighted . . . worse, the wings and tail were coated with ice. Not much ice, but it doesn't take much to cause serious trouble. He was headed toward the alert shack when he intercepted an airman on his way out. "Would you mind preflighting 806? While you're at it, clean the ice off the wings and tail, please."

"Yes sir. Ahh, captain, are you sure you want that ice cleaned off?"

The captain frowned, "Of course I want it cleaned off." He stalked toward base operations to warm up while waiting for the maintenance preflight to be completed.

Twenty minutes later he was back at the bird. The preflight was signed off, but the ice was still

there. When he mentioned it to the alert crewman, that worthy remarked that most of the pilots weren't bothered by such a small amount of ice and that it shouldn't be necessary.

"Look!" the captain exploded, "I wouldn't have asked you to deice that bird if I didn't think it was necessary. In this kind of weather, with no more flying than I get these days, I need every break I can get. I don't intend to take any needless chances. Now get that icing equipment out here and get busy!"

After the alert crewman retreated, the captain cooled enough to realize that he'd only scratched the surface of a potentially serious problem. He went back to base ops and reported the discrepancy to the airdrome officer.

The AO expressed his disbelief and was immediately invited to have a personal chat with the airman involved. He did.

"Why?" the AO asked.

"Sir," the alert crewman blurted, "one of our deicing units is down for repair and the other has a broken pump and is hard to fill . . . I was told not to deice any aircraft unless I made certain the pilot wanted it."

. . . Fiction? Unfortunately not! If you 'think' this couldn't happen at your base . . . make doubly sure. The safety people and the chief of maintenance on the base featured in this narrative didn't 'think' it could happen there either!

...r transmissions before punching the button. Make our pitch and get off the line!

Maintenance personnel are not 'lily white' either. Many emergency calls have been chopped up by something like this: "Huff, puff . . . 330 requests permission to taxi from in front of the 999th maintenance hangar to the run-up area and then to the compass rose, Over?" Listen well before talking! Even though it is quiet at your base, there could be an emergency

at another airfield in the vicinity. You are on a BIG party line. Therefore, it is always necessary to keep your message short and specific.

Tower and controller types are in the business. It is their bread-and-butter, however they still goof too. Assistance from the ground is very desirable in most cases. Once an emergency aircraft has established contact though, it behooves all other stations to keep the airwaves unripped. In a tense

moment, a man has difficulty thinking logically. Any unnecessary interruption decreases the time he has available to take prescribed action. It should be the pilot's prerogative to converse with only that station, or stations, he deems necessary. Once he knows you are available, he will use you as dictated by the particular stage of his emergency procedure. Remember: Help, but do not hinder!



MAJOR LEWIS tested his coffee, closed both eyes and grimaced, "Man alive!" he roared, "That's what I call coffee!"

"Lt Green liked it too," the Old Sarge chuckled, "He took a big swallow and when we finally got his eyes pried open he said, 'That's coffee?' and headed for the water cooler."

Lt Green looked up from his work, "Awright you guys, that's the first and last time I do anything for you. From now on you can make your own coffee."

"The Lt has always been complaining about how strong I make it." The Old Sarge explained, "So he gave it a try this morning. Only trouble, he had to ask how much coffee I normally put in."

"He was afraid I'd get it too weak and added a fudge factor . . . I figured he would, so I only used half what he suggested. It still came out too strong."

Major Lewis grinned, "Too strong? I thought it was just right. Say, I took the boss down to Elite

Air Base yesterday and just before we got there the UHF quit channelizing. The radio people checked it out and had to change the whole unit. The troop who worked on it said we were lucky. A short while back they'd made 'em out out bench stock of all items like that. Instead they had to get 'em from supply. The reason we were lucky, they'd just inaugurated a new flight line supply branch which carried everything they used to have in bench stock."

"That's typical" Lt Green replied, "About the time everyone gets used to a system someone comes along and changes it and then everyone has to think up ways to get around it."

"They were probably having trouble with people carrying too much in bench stock." The Old Sarge reasoned. "I remember one outfit that had squadron bench stock then changed systems. They consolidated everything. This was right after they received a huge shipment of some small part, I

think it was a seal. At the time of the changeover, they must have had well over a hundred in each squadron. They only used about four or five per month. Anyway, when they made the changeover, all the units just handed these seals out to each crew chief. They kept 'em in their tool boxes and around. Anytime somebody needed one they'd go get it or borrow it from a crew chief who still had a supply. Finally they woke up one morning with some of their birds AOCP for a two-bit seal. They'd run out. The supply people hadn't been getting any calls for the item, figured no one used it, and deleted it from their stock."

"One thing's for sure," Lt Green decided, "We're in no danger of this happening with coffee procurement."

Answer to question of the month:

T.O. 32B14-3-1-101.

TAC TIPS

Tac Tips

MOBILE MIX

Four students entered traffic in a flight of T-birds. Three's left main gear didn't come down and mobile sent number 4 around by mistake. Number 3 continued but during flare decided things weren't normal and started a go around. He wasn't quite fast enough and the left tip tank dragged along the runway for a while before the bird got airborne. The pilot recycled the gear and made an uneventful landing. The mobile control office gets credit for the tip tank (had to be replaced, of course)!

C-123 WINDMANSHIP

Ever walk a tightrope? Pilots in Alaska claim they get a similar feeling anytime they taxi a C-123 on a windy day. After several years of experience, these troops have developed many tricks and special techniques to save wear and tear on props and wing tips. Alaska has more than its share of wind, but it doesn't have it all, so the rest of you C-123 people might be interested in their procedures.

They have found that the simplest way to avoid trouble is not to taxi the aircraft crosswind. This is easy on long runways, where a pilot can stop, off load and then take off straight ahead. Since most sites in Alaska have short gravel runways, the Alaska pilots find it safer to back down the runway rather than turn an empty aircraft broadside to the wind. This is especially true on sloping terrain. When forced to maneuver on the ground, they take advantage of heavier aircraft weight by doing it prior to unloading.

When they must make turns in strong winds, they make the turn as continual as possible to reduce exposure to the wind. When taxiing on sloping terrain, they insure the aircraft has enough momentum to carry it thru the turn. When the aircraft stops crosswind, they are careful not to add power on the upwind engine. To do so when there is tipping effect from sloping terrain will almost always guarantee ruining

a prop tip.

When turning, the wing opposite to the direction of turn comes down, so in strong crosswinds they keep the upwind wing on the outside of the turn. A turn in the opposite direction results in the upwind wing coming up even more, and increases the possibility for a prop strike.

TOUCHE'

After a local flight the pilot wrote this discrepancy in the aircraft form, "Something loose in tail." The next morning when he returned for another flight in the same bird, he found this reassuring corrective action entered by his write-up. "Something loose tail tightened." Reminds us of another one that was making the rounds a few years back. The pilot's write-up, "Number two engine missing." The corrective action was, "Number two engine replaced." Brevity is fine, but explicit elicit more efficient fix-it.

UNPINNED

After 30 minutes of straight and level flight at 35,000 feet, the left engine RPM of an F-101 decreased to idle. The pilot tried to increase it by moving the throttle but the fuel flow decreased to zero and the engine flamed out. After two unsuccessful airstart attempts on the normal system and two on the emergency system, the pilot declared an emergency and made a single-engine landing. Investigators found that the castellated hex nut (P/N AN 310-5) had loosened on the throttle shaft of the fuel control, permitting the throttle lever assembly and adapter coupling to disengage. The throttle moved to the idle position and subsequent throttle movements by the pilot in his attempt to regain engine control caused the fuel control to go to idle cutoff. Someone forgot to safety the nut with a cotter pin.

CHR

PHOTO STORY

CHR Photo Story

Major Bob Cherry of the 140th TFW, Buckley ANG Base, Colorado sent us an Operational Hazard Report on a potentially dangerous problem. After Bob and a few other pilots in the 140th very nearly bought large chunks of real estate a little east of Denver when they had trouble getting their F-100C's to flare for landing, Bob investigated. He found that the oxygen, G suit and anti-exposure suit hoses routed thru the

personal equipment lead clip IAW T.O. 1F-100-789/789A, were restricting aft stick travel, not just a little, but one helluva lot. The photos tell the story. The unit submitted an EUR and removed the clips pending investigation of the problem. TAC has asked SMAMA to re-examine the T.O. - meanwhile this problem can effect other F-100 users, which may explain why so many of these clips get "lost."



Aft movement of stick restricted by hoses with seat full up.



Total elevator deflection possible with clip installed.



Elevator deflection possible with clip removed and hoses rerouted.



Aft stick movement possible with clip removed and hoses rerouted.

KEY----RIPES! Have you ever had the unfortunate experience to be driving down the street with your wife or mother-in-law in the rear seat?

Sometimes it's only the annoying idle chatter over your shoulder. Other times it may be tips about your driving procedures. If you are really snake bit, the rear seat occupant will ask stupid questions: How fast are we going? Will we get there on time? Did you lock the back door? What did you think of Margaret's hat? Where are we? Reginald, WHY are you glaring at me?

G-r-r-r-eat balls of fire! By now you'd be going through traffic lights and making wrong turns. If you had a tire going flat or a gas gage on EMPTY and were sweating out a gas station, you'd be fit to be tied.



BY MAJOR RICHARD G. WEBER, HQ USAF

Some inflight emergencies are similar to this . . . no, we haven't started to take the family out in an F-104, but we do have back seat drivers. I'm talking about the inconsiderate BOOBS on the other end of the radio channel!

Testimony of pilots who were involved in accidents often discloses that during their emergency, the radio channel was saturated with unnecessary calls. Sometimes it was a mobile controller, other pilots, COC, or the tower. "What are your intentions? How much fuel do you have? Is your parrot squawking? What's your problem? Have you tried an airstart? Say again? How many souls on board? Roger. Are you descending?" Now, here's one you

can answer in the affirmative. "Yes, I am coming down!"

If you were in a Gooney Bird with many little beavers to help, this chatter would be humorous. It's not a bit funny when you are alone and busier than the proverbial cat-on-a-tin-roof, descending like a punctured balloon! One lucky driver flamed out at 38,000 feet. In the next SIX very tense minutes before ejecting at 500 feet, he had to make over 30 transmissions while trying air-starts and setting up his flame-out pattern. Admittedly, a pilot usually needs all the assistance he can get; however, there are times when he may be so busy in the cockpit that he cannot converse with others. He should, in most

cases, devote his complete attention to the emergency, rather than trying to keep inquisitive people on the ground informed.

Have you ever been engaged in a conversation when another individual walked up and interjected a comment without getting the gist of your discussion? I know you have. Usually, the guy's remark is entirely irrelevant. This can happen in the air also.

A few years ago I investigated a crash on a gunnery range. The student pilot had noted his liquidometer needles drop as he pulled G's on a dive bomb recovery. He immediately transmitted that his main and forward tanks were low. There were many pilots in the area who offered assistance. In addition, there was a zealous range officer. A flight leader at a distant position chimed in with, "Go to your wing tanks." Dutifully the student complied. Result: Flame out! He had already used the fuel in the wing tanks. Amidst many more calls that were intended to help, he ejected.

When I talked to him later, he said that there had been so much chatter on the air that he became thoroughly confused. Still another pilot shouted, "Shut up tower! Shut up tower! I'm trying to talk to someone else," then ejected because he couldn't get a radio channel in time. Ejection solved their back-seat driver problem. We are going to be flying for a little while yet, so let's consider some methods short of this.

Whenever a problem arises, we usually try to get the other guy to change, but here we have a problem that can be solved only by 'cleaning our own house first'.

As pilots we must abide by the rules. Monitor the channel before mouthing off. Keep those smart remarks for the bar! Think about

ACCIDENT PREVENTION

Aircraft accident prevention relies more on a well-developed training program than anything else. Aircrews generally get into trouble sometime during their career. This trouble may not always be serious enough to cause an incident or accident, but when the aircrew is poorly trained the scales may be tipped just enough to cause an accident. On the other hand, when an aircrew is properly trained and supervised, the scales may be tipped enough in the right direction to allow the aircrew to overcome difficulties encountered and prevent the mishap from occurring. A strong training program develops the root structure of a strong flying safety program.

ALL FOR APPEARANCE

The FSF reports that a pilot was killed when he landed downwind, overshot most of the runway, and couldn't stop the aircraft on the little that remained. The aircraft plunged into a drainage canal and the control column fatally crushed the pilot's chest during the sudden stop.

Shoulder harnesses were installed in the aircraft but couldn't be used because seat covers had been tied over them.

BUT DOC

"That chart doesn't prove I'm too heavy — it just says that I'm not tall enough."

UNPLUGGED

While climbing through 15,000 feet, the navigator in the rear cockpit of a T-33 raised his seat full up. He heard a mild pop on the left side of his seat, but couldn't determine the cause. Shortly thereafter, he began to feel woozy and his vision darkened. He noticed that his oxygen blinker was inoperative, so he checked hose and mask connections and switched to 100% oxygen. He tried all pressure settings on the regulator, to no avail. The pilot descended immediately and returned to home base. Investigators found that the aircraft oxygen hose had separated at the seat quick disconnect, P/N 450488-L, because of a design deficiency. A clamp, P/N NAS 397-20, described in the dash four, p. 2-276, figure 90, index 1, didn't hold the hose in the proper position as it is supposed to do when the seat is raised.

HYPOXIA

The pilot in the front seat of a T-33 began to feel a little dizzy while climbing to 40,000 feet. He checked the oxygen regulator and hose connectors, then went to 100% oxygen, but still felt lightheaded. The rear seat pilot noticed that the front seat pilot was not talking very clearly. He came out from under the hood and began a rapid descent. While descending through 15,000 feet, the front seat pilot began to feel better, and realized that he had been hypoxic. They abandoned the mission and returned home. Investigators found that the seat disconnect fitting tube assembly, personnel disconnect (P/N 450488L), was not engaged properly with the fitting mounted in the cockpit floor (P/N 451579-4L). The seat had been removed to repair a broken wire in the cockpit area. When it was reinstalled, the disconnect was misaligned. The pilot still received some oxygen and the blinker worked properly, but the system would not pass the blowback test.



TOO WELL OILED

Just after retracting gear, flaps and speed boards on a go-around from a low approach, the pilot of an F-101B detected strong hydraulic fumes coming from the ventilation system. Investigators found that the utility hydraulic system reservoir had been over-serviced. When the landing gear, flaps, and speed boards were retracted the hydraulic fluid spilled out of the reservoir and was forced into the engine intake, and from there into the pressurization system.

VOR ALARM

The FAA has installed test warning devices at 20 VOR stations. When the ground VOR equipment at these stations malfunctions, the pilot will hear a steady tone instead of the normal code identification. The tone continues until the malfunction is corrected or until the transmitter is shut down.

The FAA requests that pilots send comments about their experiences with these test installations to the Chief, Navigational Aids Branch, IM-150, FAA, Washington 25, D.C.

The warning device is installed on VOR's at:

Albany, N.Y.
Gordonsville, Va
Erie, Pa
Nantucket, Mass
Salisbury, Md
Des Moines, Iowa
Springfield, Mo
Hill City, Kan
Milwaukee, Wis
Duluth, Minn

El Paso, Texas
Mobile, Ala
Wilmington, N.C.
Augusta, Ga
Miami, Fla
Bakersfield, Calif
Lakeview, Oregon
Dillon, Mont
Sacramento, Calif
Spokane, Wash

CHANCE TAKER

The Chairman of a well-known air safety committee as recently quoted by the Flight Safety Foundation:

"Have you ever taken a chance or cut a corner on the ground or in the air? Maybe it was such a small chance it seemed natural to take and therefore unimportant. Maybe it was over something you are so accustomed to doing that it has become almost second nature and just cutting a corner this time was scarcely noticed. But can any of us ever chance it with complete safety? I believe the answer is, 'No, not on the ground and certainly never in the air. .'"

SAFETY OFFICERS

Do you regularly check all sections of the TIG Brief for safety items? Each item is published under the section responsible for action. For example, if a safety item concerns a maintenance problem, it will be published under the MAINTENANCE, SUPPLY AND SERVICES banner; if it concerns a matter of particular interest to commanders it will appear in the COMMAND SECTION. Since safety concerns all AF functions, don't neglect to check the entire Brief for matters of concern to your area.

CAN YOU SAY NO

Grandpa Pettibone of NAVAL AVIATION NE remarked, that as simple as it sounds and altho it has only one syllable, the hardest word in the world to say is "No." Every once in a while an accident report hints that someone didn't have the guts to say "No!" Perhaps it was a Commander or maybe the Ops Officer, Training Officer, or a Flight Commander, since they sometimes need a little more iron in their backbone too.

Conducting a safe flying program doesn't help anyone win a popularity contest. Somebody has to check the flight schedule to insure that each man progresses normally, and doesn't run before he can walk . . . to keep fledglings from expending themselves needlessly.

The pilot who flies early in the morning should never be cleared for a long cross-country that night. If the night hop is worth scheduling, the pilot shouldn't be required to report for duty until the time that night flyers normally come in . . . OR HE SHOULDN'T GO!

A tired pilot's instrument cross-check breaks down too often. He makes gross errors; he forgets to check NOTAMS; he collides with his wingman; he stretches his fuel too far; he pushes his skill weather; and takes too many darn-fool chance.

The younger pilots think we have too many restrictions and wonder why we must use military bases on cross-country flights. But did you ever see an aircraft barrier on a civil airport? Or a military-type crash crew? A pilot slowly smothered in his cockpit at a civil airport recently while the local fire department tried to figure out how to raise the tail of his overturned bird. Poor flight planning and lack of experience put him in a spot where no one could help him. Someone along the line should have said "NO."

"NO" should not be considered a disgrace for a new man, but a signal to work harder until he is fully qualified for an unrestricted go-ahead. When there is no supervisor around to make the go-no-go determination, the real professional pilot is the one who has the courage and judgment to say "NO" to himself.

According to the Flight Safety Foundation the flight simulator is by far the most important device for combating habit errors.

HELP YOURSELF

By
CAPT WALT BOSTWICK
TAC OFFICE OF SAFETY

I NEED YOU!



A FEW DAYS AGO I was reading some old Aviation Cadet propaganda and found something I have long since forgotten. On the big poster that said the good Uncle wanted me, there was a statement that went something like this, "Be the man who does the job." There was some stuff about how many men it takes to support each man in the cockpit, and how the free world depended upon the few fearless aviators who would meet the enemy alone and unafraid. After I wiped away the tears, one thought remained—a good part of what I had read was very true. The reason we have an Air Force is to maintain a selected group of combat ready pilots and crew

...a case for the OHR

members. Everything and everyone else in the Air Force must be secondary to this group and their mission. Regulations, policies, and procedures must be designed and interpreted with only one thing in mind: Will this help accomplish the mission in a safer and more effective manner? Every act must meet this criteria.

How does this affect you, the average pilot? Your job is to accomplish the mission, and every other person and agency is hired to support you.

Support personnel and agencies sometimes lose track of where they fit into the big picture, for example, if you were to ask, "What is the purpose of a control tower?"

The first answer that comes to mind is, "To control traffic."

WRONG! The prime function of a control tower is to help the pilot during an approach and landing! Controlling traffic is simply a means to a desired end. This misconception is not an isolated case, it is typical of many instances of the tail wagging the dog.

What can you do? A typical squadron pilot is not going to determine policy or establish procedures so he must do what he can to change and correct the existing conditions. By nature or by habit, the average pilot will tolerate almost anything before he makes a formal complaint. A recent survey of TAC pilots illustrates this point. 95% of the pilots questioned stated that radio frequency changes while flying the wing in weather or at night are a severe hazard to their longevity. Two—count 'em—two Operational Hazard Reports have been turned in on this problem! Only two pilots were irritated enough or scared enough to take the time to fill out an OHR. How about a break? Headquarters types, who are in a position to do some good, can't operate on word of mouth and suspicion. Stop bad-mouthing your FSO, and start doing your half of the job. Give Safety the facts and figures, and Safety will get the ant-stomping support types on the ball. The OHR may not be the answer to all the World's problems, but it is a step in the right direction.

Pilot of Distinction

Pilot of Distinction



Captain Roger J. Wichers, an F-104 pilot from the 435th Tactical Fighter Squadron, George Air Force Base, California, has been selected as the Tactical Air Command Pilot of Distinction. During a squadron deployment from George Air Force Base to Moron Air Base, Spain, an oil supply line in Captain Wichers' aircraft failed when he was 680 miles west of the Azores. This caused the exhaust nozzles to malfunction and reduce engine thrust so that he could not maintain altitude with full military power. While descending, Captain Wichers made several attempts to light the afterburner, but was not successful until the aircraft was below 20,000 feet. Although the afterburner provided enough additional thrust to continue flight, the fuel supply and remaining engine oil were now critical. The fuel problem was solved when he rendezvoused with a tanker and made a successful hook up using takeoff flaps and speed brakes to control airspeed. This was necessary since he had to use full throttle to keep the afterburner lit. Captain Wichers remained hooked up to the tanker until reaching the Azores where he was faced with another problem. Existing weather conditions required that he make a weather penetration rather than a precautionary pattern. This was most difficult with the afterburner functioning, but thru flawless technique he was able to land the aircraft safely. Captain Wichers' outstanding professional skill and judgment prevented a major aircraft accident and certainly qualifies him as a "Pilot of Distinction."



**CREW CHIEF
OF THE MONTH**



For his outstanding performance as an F-86F crew chief, Staff Sergeant Herman T. Hartman of the 4528th Organizational Maintenance Squadron, Nellis Air Force Base, Nevada, has been selected as the Tactical Air Command Crew Chief of the Month. Because of his exceptional mechanical ability and dedicated efforts, his aircraft completed all 38 sorties scheduled in November 1962 with an effectiveness rating of 1000. This commendable achievement was made without any deviations from the published flying schedule. Sergeant Hartman materially contributes to the Air Force mission thru efficient use of material and management of specialist support personnel. To increase his potential as an NCO, he actively participates in the off-duty education program and has completed a college algebra course, an aircraft mechanics course and a leadership and personnel management course.

RECOGNITION

**MAINTENANCE MAN
OF THE MONTH**



Staff Sergeant Arnold G. Thrash of the 4500th CAM Squadron, Langley Air Force Base, Virginia, has been selected as the Tactical Air Command Maintenance Man of the Month for his superior performance as a jet aircraft dock chief. During the Cuban crisis, Sergeant Thrash's dock completed periodic inspections on two T-33 aircraft in record time. This permitted the 4500th Air Base Wing to meet its operational commitments and gave them eight days of critically needed additional aircraft time. Quality Control inspectors found only five minor discrepancies on these aircraft after the inspections were completed and only one minor communications difficulty was noted during the subsequent Functional Check Flights. The quality of these inspections, altho completed expeditiously, attests to Sergeant Thrash's exceptional ability.

recognition

UNIT ACHIEVEMENT AWARD (Awarded 1 July thru 31 December 1962)

312 TCS, Hamilton AFB	76 TCS, Homestead AFB	731 TCS, L.G. Hanscom Fld, Mass
313 TCS, Portland Int'l Apt, Ore	77 TCS, Donaldson AFB	732 TCS, Grenier AFB
135 TCS, Glen L. Martin Apt, Md	78 TCS, Barksdale AFB	757 TCS, Youngstown MAP, Ohio
142 TFS, New Castle Cty Apt, Del	104 TFS, Glen L. Martin Apt, Md	353 TFS, Myrtle Beach AFB
328 TCS, Niagara Falls MAP, N.Y.	306 TFS, Homestead AFB	9 TRS, Shaw AFB
4432 ATS, Chanute AFB	326 TCS, Willow Grove NAS, Pa	106 TRS, Birmingham MAP, Ala
4433 ATS, Dobbins AFB	327 TCS, Willow Grove NAS, Pa	335 TCS, McGuire AFB
4434 ATS, Randolph AFB	524 TFS, Cannon AFB	776 TCS, Pope AFB
4435 ATS, Hamilton AFB	4524 CCTS, Nellis AFB	4 Ops Sq, Seymour-Johnson AFB
117 TRS, Hutchinson ANG Base, Kan	314 TCS, McClellan AFB	333 TFS, Seymour-Johnson AFB
154 TRS, Adams Fld, Ark	336 TCS, Stewart AFB	352 TFS, Myrtle Beach AFB
165 TRS, Standiford Fld, Ky	337 TCS, Bradley Fld, Conn	356 TFS, Myrtle Beach AFB
143 TCS, Green Apt, R.I.	355 TCS, McGuire AFB	758 TCS, Greater Pittsburg Apt, Pa
613 TFS, England AFB	357 TCS, Bates Fld, Ala	309 TFS, Homestead AFB
522 TFS, Cannon AFB	429 ARS, Langley AFB	700 TCS, Dobbins AFB
4500 Ops Sq, Langley AFB	701 TCS, Memphis MAP, Tenn	97 TCS, Paine AFB
20 TRS, Shaw AFB	702 TCS, Memphis MAP, Tenn	



Nuclear Missile Safety

A few years ago the Air Force established the Nuclear Safety Emphasis Program as a management tool. With it commanders can isolate problem areas or weaknesses that result in mishaps. Such mishaps, by their very nature, can have a serious impact on the entire defense structure.

Because the number of personnel error mishaps is increasing, the Nuclear Safety Seminars at the Third Annual Safety Congress recommended that the theme of the 1963 Nuclear Safety Emphasis Program be Personnel Error Prevention (PEP).

In February, as part of this program, the Air Force is stressing programming. Each Commander of a unit with a nuclear capability should publish a program that is directive in nature. It should contain sufficient guidance to insure that all personnel accomplish their duties efficiently and completely. If the commander does this, he will be paving the way to eliminate personnel errors. His Nuclear Safety Officer should be the eyes and ears of his program and should help him to insure that it is given the wholehearted support of all concerned.

A serious accident at one of our TAC bases again reminds us that handling and working with munitions is hazardous work.

An airman accidentally fired seven 2.75 FFAR rockets across a parking ramp while he was making a functional check on the gun solenoids of an F-84F aircraft that was loaded for strike. The rockets took a heavy toll. One F-84F was completely destroyed by a direct hit, a KB-50 and an F-84F received major damage and another F-84F was damaged when the nose gear collapsed as it was being towed from the fire area created by the other aircraft. Fortunately no one was killed or injured.

Investigators soon learned that the airman performing the check was not fully qualified and that there was a serious lack of supervision. Personnel in the unit were not following proper procedures and were not using approved check lists.

Rockets, guns, bombs and other munitions are primarily designed for destruction of enemy property and life, but they will function just as well against our own personnel and facilities if proper precautions are not taken. To prevent such accidents, individuals who handle munitions or work on weapons systems should very carefully follow prescribed safety rules and check lists.

Almost one-sixth of TAC's missile accidents and incidents last year were directly caused by someone making an error. Yes sir, that is 16% of 'em, which is 1% better than we did in 1961, but far from our goal of zero.

Here's a classic example caused, like most accidents, by a combination of things ranging from negligence and not using a check list, to overall poor supervision.

A tech rep installed static port covers on a TM-76B to test an experimental plastic shield. The covers were still on when the crew made an engine run-up. An eighth inch steel cable connecting the covers came loose and was sucked into the intake. The engine ground off about two inches before the crew shut it down. The impeller blades were nicked and damaged.

Here's another, caused by carelessness. When an armament crew slid a GAR-8 aft to the unloading slots, part of the umbilical wedged against the pylon rail. Then when the missile dropped free, the cable sheared off leaving the cable with the pylon. Our GAR-8 is now awaiting disposition instruction

TAC TALLY

A COMPARISON OF TACTICAL AIR COMMAND ORGANIZATIONS

MAJOR ACCIDENT RATE 1 JAN - 31 DEC

TYPE	1962	1961
ALL	12.6	14.6
F-105	32.8	23.9
F-104	40.2	71.8
F-101	20.1	5.6
F-100	17.9	19.8
F-86	61.7	35.5
F-84	17.6	32.2
B-66	0	22.6
B-26	34.4	0
F-39	0	0
T-33	3.0	5.4
T-29	15.2	0
KB-50	7.6	5.6
C-130	1.4	6.6
C-124	0	21.7
C-123	11.7	5.5
C-47	4.4	0
U-10	46.3	

TAC Tally

DEC TALLY

GUARD AND RESERVE

UNIT	MAJOR	MINOR
445 TCW	1	
122 TFW	1	1
130 TCG	1	
108 TFW		1
123 TRW		1
127 TRW		1

ACCIDENT FREE

(MAJOR & MINOR)

JET			
ACTIVE	MONTHS		ANG
4411 CCTG	11	18	113 TFW
354 TFW	6	16	102 TFW
CONVENTIONAL			
ACTIVE			RESERVE
314 TCW	41	73	434 TCW
463 TCW	19	62	94 TCW

DEC TALLY

ACTIVE UNITS

UNIT	ACDNTS*	INCDTS
4 TFW		8
12 TFW	1	5
15 TFW		1
27 TFW		12
31 TFW	1	11
354 TFW		12
355 TFW		2
388 TFW		2
401 TFW		
474 TFW		10
479 TFW	1	14
363 TRW		3
4411 CCTG		
4510 CCTW	1	27
4520 CCTW		24
64 TCW		
314 TCW		
463 TCW		
464 TCW		
4505 ARW		4
4442 SSQ		
1 ACG		

*MAJOR & MINOR

December was another quiet month with three major accidents for regular forces and three for the reserves. The regulars had one minor while the reserves had four. There was one fatality during the month. This occurred when a highly experienced F-104 pilot lost an engine on final approach. He apparently attempted an airstart instead of ejecting...his aircraft crashed just short of the overrun.

An F-100D pilot ejected after the turbine failed some distance from a suitable airfield. An F-84F pilot hit trees on a live ordnance run, pulled up and ejected from his damaged aircraft. An ANG F-84F pilot ejected following an engine failure while an ANG crew escaped injury after crash landing on SA-16. An engine failed and refused to feather which caused the aircraft to lose altitude.

A reserve crew undershot their approach and wrecked the gear on their C-123 when they hit a six-inch lip on the end of the runway during a single engine landing.

Two of the minor accidents involved F-84Fs. One went off the runway following a brake malfunction. The other was damaged by a partial barrier catch which terminated an actual flameout landing. Two B-57s received minor damage - one after hitting a snow bank, the other from an accidental gear up landing.

An F-100C was damaged during barrier engagement from an aborted takeoff.

PRINCESS ANN

... EXPLOITS HER ROLE IN ACCIDENT PREVENTION THROUGH **COMMAND AND SUPERVISION!**

