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ATTACK

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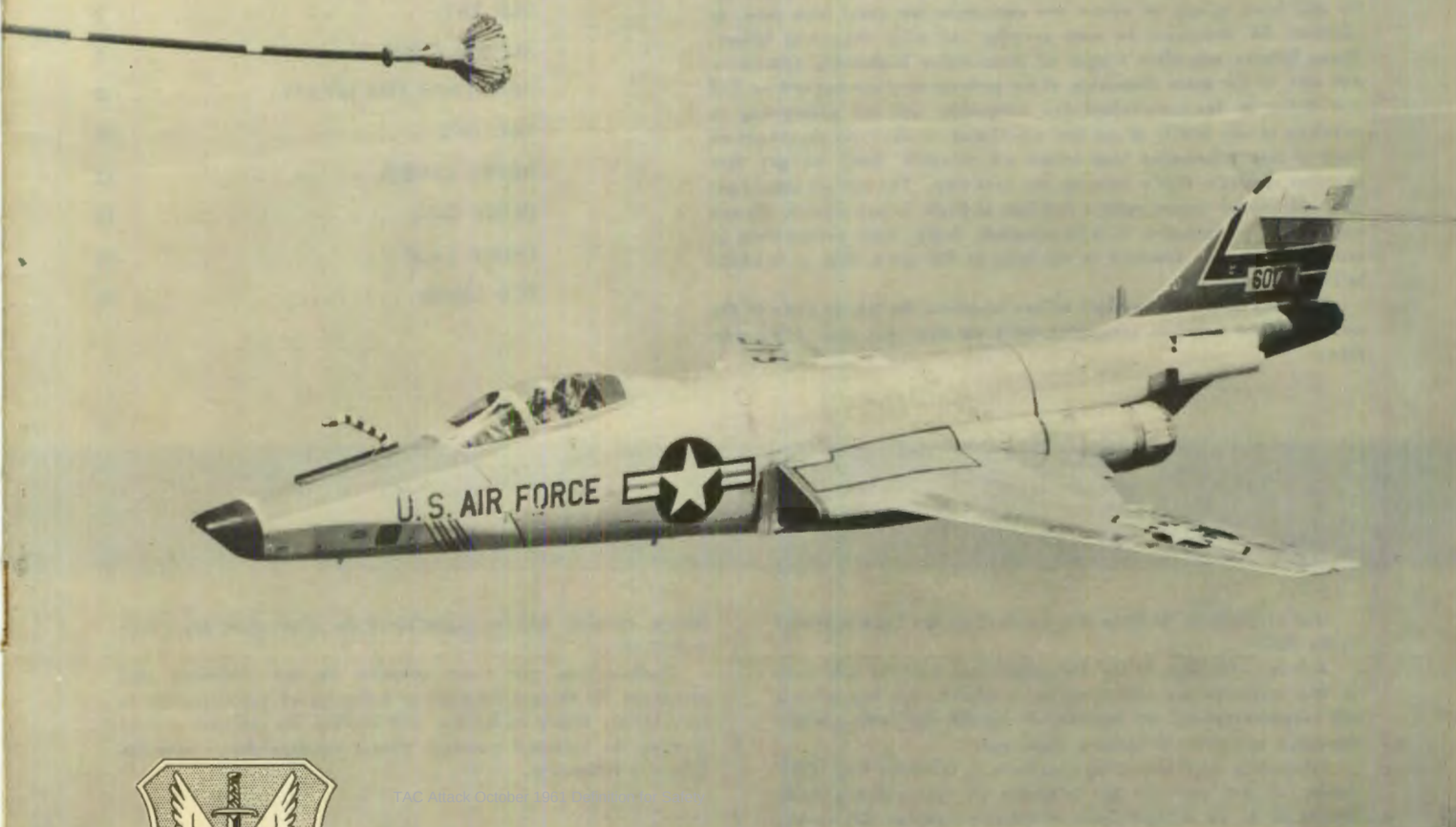

TACTICAL AIR COMMAND

DEFINITION FOR SAFETY

TACTICAL AIR COMMAND

ATTACK

GENERAL WALTER C. SWEENEY JR. COMMANDER TACTICAL AIR COMMAND

LT GEN G. P. DISOSWAY VICE COMMANDER

EDITORIAL

Every time we have a close call with an automobile we mentally go over the preceding events, trying to find out what went wrong. Usually we find that we pulled a boner, got careless or failed to anticipate another driver's actions. We then make a determined effort to correct our driving habits. Most of us use a system such as this to correct our faults not only for driving but for flying as well. But flying isn't as simple as driving. We still have to rely on others and anticipate the worst from them. In addition, the equipment is more complex and more subject to failure. These failures can often trigger off some rather frightening sequences. Add this to the extra dimension of the airborne environment and we find that flying is too complicated, too demanding and too unforgiving to permit us to rely totally on our own experience. In short, we should get as much of this information from others as possible. Some we get thru accident reports --- that's learning the hard way. The rest we should get from operational hazard reports and from in-flight failure reports. We can only get this information if it is reported. Sadly, such events often go unreported because someone is too busy to fill out a form or is afraid he'll appear foolish.

The OHR report, the in-flight failure report and the UR are three of the most important accident prevention tools we have--but only if WE use them.

THIS ISSUE

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COVER PHOTO

Thirsty RF-101 pulls in for a load of fuel

USAF Recurring Publication 62-12

DIGGER WRITES AGAIN

DEAR JOHN:

AS YOU KNOW I've been flying the T-bird quite a bit lately. Like they say it's a good stable bird . . . if you like good stable birds. Personally I'll take the centuries. Was feeling really at home in it and it never entered my mind that I'd be taking the same nylon route that I did out of that 100F a few months ago – BUT I DID!

I was scheduled to fly with a young lieutenant. He got down to operations first so was assigned as pilot and I crawled into the back seat. He was well-qualified so I had no complaints, besides I needed some hood time.

We flew in the local area for awhile and then came home for some practice SFO's and ILS approaches. The lieutenant made a touch and go out of one of the SFO's and started a max climb toward high key for another. As we passed 2500 feet, the engine started to rumble and growl and it started to get a little sweaty in the cockpit. I took a quick look at the instruments. Everything was in the green. No red lights were on and the TPT and RPM were in limits.

When the rumble first started I instinctively grabbed the controls but the lieutenant said he had it, so I let him have it . . . the airplane I mean. He retarded the throttle to idle and almost immediately the temperature started up, so he stopcocked and said we had a flame-out. By then he was already turning toward the runway.

I wondered when he started the turn what his plans were but thought that he was going to take it right on in because we were at a good low key position. I was quite surprised when we arrived over the end of the runway at 2200 feet.

Naturally, the boost wasn't working so when he started a 360 he only used about 20° of bank. He

said that if we weren't in good position at 1500 feet we'd eject. Fifteen hundred feet came all too soon and our position wasn't so good. He said, "Go." I said "GO?" and he said "GO" . . . I went! He followed soon after.

The whole trouble started when a chunk of the turbine cooling fan busted off and fell between it and the diffuser assembly. Pieces broke off and got into the number four bearing causing it to fail. From there things went from worse to worser.

Yeah, I know the dash one says to pull the power back to 80-96% for a rough engine, but there wasn't anything I could do. He had it back to idle before I knew it.. From then on I rather gathered that he was a little behind the bird.

We probably could have made a gear-up landing from 2200 feet over the end of the runway and we may possibly have gotten the gear down. It would have been close though and would have taken some real bending.

I don't know why I keep getting teamed up with these hard-luck guys, but it sure does seem like I do and I'm getting kinda tired of walking home. You know you've got it made flying those beasts with the single seat.

Write when you get time old buddy.

Digger

DEAR DIGGER:

Still "winning" those caterpillars I see. Two are enough in any man's book.

My deepest sympathies are with you on this one,

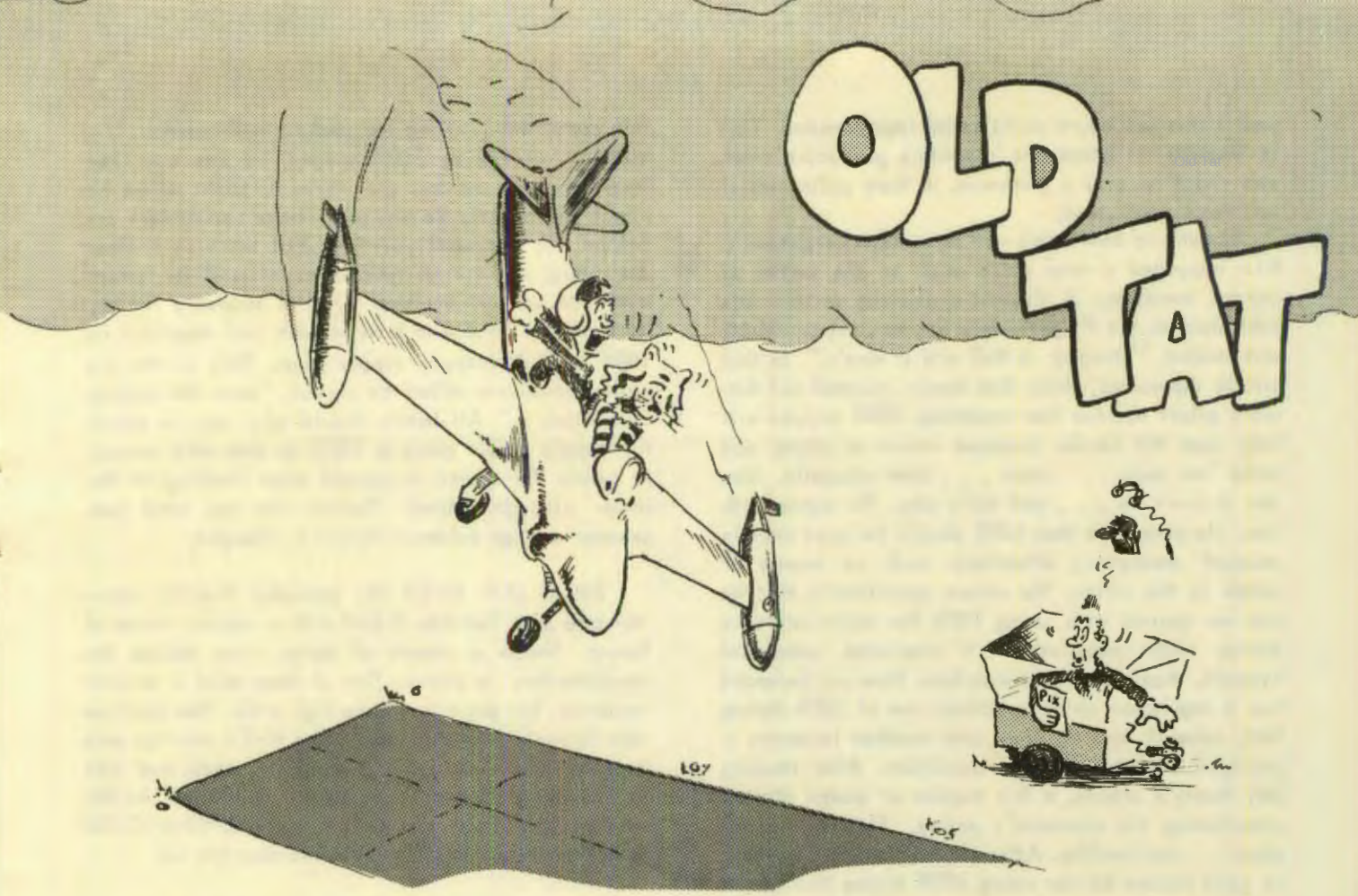
old boy, but I can't understand why you just sat there and let that young fellow goof up. You said in your letter that you were in a good low key position when the trouble started – then, man, why didn't you open your mouth and say, "We're at a good low key, shall I put the gear down?" or something like that. I realize he said that he had the bird, but if I had been in your shoes you can bet that I'd have let a few of my thoughts and ideas trickle across to that lad.

He wouldn't have had to accept the advice, but look at it this way – if you had been in instrument conditions and he had let the aircraft get in a steep descending turn when it was supposed to be straight and level, you'd have told him to watch his heading and altitude, wouldn't you? Or are you so proud you'd let him plant you firmly in terra firma?

Your thoughts about bending it around from the 2200-foot high key might have some merit but, personally, I think the cause was lost when you didn't use a perfectly good low key. Your accident was pretty well jelled right soon after the lieutenant headed for that low high key – that's when you should have made your pitch.

Sounds like you fellows could use some additional SFO practice too. I'm a believer in shooting them from all possible positions high key, low key, low-high key, high-low key and using different methods to control rate of descent like delaying gear extension, playing flaps, etc. This practice makes you confident of just what you can expect from the bird. Try it for me . . . and let me know when you make a normal landing again will you?

John ●



OLD TAT TRIES his blamedest to keep an open mind on this business of flying . . . and although we have a stubborn streak almost wide enough to cover the yellar streak down our backside, we do manage to modernize our procedures from time to time. Sometimes we ain't too happy about it. Take the matter of GCA's in the good ole rusty T-bird. For years we've flown our approaches with 20° of flaps at 115 knots using speed boards and a 2% power reduction to establish our rate of descent. Then some clown sells everyone on this business of slowing to 115 with 20° flaps and extended boards on final, but using full flaps to establish the descent.

Reluctantly we changed over--cursing the fact that this made us hold a wee bit more back pressure during final . . . and trying our best not to admit that everything else felt more at peace with the world. Recently, we flew with a sharp buddy of ours on an instrument flight. He had flown both types of approaches and knew that we had resisted the change. As he eyeballed the gauges down the slide towards homeplate and a 200-foot ceiling, he asked what type GCA we wanted. We said we didn't give a hoot, that we'd make our usual concrete crusher regardless of flap setting as soon as we saw the runway--all he had to do was get us to it.

He says, "OK, I'll see how well you can land it with 20 degrees."

It was a lucky approach, airspeed was with the book, we were on the centerline and within ten feet of glide slope at minimums. By looking straight down your old TAT could see terra firma and in two seconds we broke out above the overrun. Wanting to paste it on the end, we made what our Navy friends call a 'low dip.' Dumping the nose and flaps at the same time, speed picked up and consequently we scooted over 1000 feet of good hard wet runway before making a firm three-point arrival. Had we been in a fully dirty configuration when we broke clear, as is currently taught by the USAF Instrument School, the low dip would have had much less effect on airspeed and our landing could have been effected either slower, sooner, or both. Which could make a marked difference on a shorter runway. We now see why all the stan hands bought the new system.

Whenever anyone sets up a procedure or writes out a policy, they have their reasons. These reasons aren't always apparent. But, the procedure producers don't have a corner on the art of thinking. That's why it pays to sound off when your reasoning tells

you that a procedure could stand improvement. This is healthy. It keeps the procedure producers alert, and could uncover a weakness in their policy which has been overlooked.

Sometimes both sides will have sound argument... this happened a wee while back on the matter of oxygen handling. A thought provoking article was published in the Flight Safety kit for January which was called, "Oxygen: It Will and It Won't." In this article the author, Major Sam Neely, pointed out that many pilots believe that breathing 100% oxygen will help cure the bends, increase vision at night, and make 'em more . . . yawn . . . alert mentally. Sam sez it isn't so . . . and tells why. We agree with him. He also says that 100% should be used only in unusual emergency situations such as smoke or fumes in the office. He states specifically that he has no quarrel with using 100% for short intervals during night penetrations to overcome unnoticed hypoxia. Again we agree with him. Now our command has a regulation which specifies use of 100% during taxi, takeoff, and on night and weather letdowns – provided enough oxygen is available. After reading Maj Neely's article, a fair number of troops started questioning the command's policy. This is reasonable . . . and healthy. After all, as Neely said, there is good reason for not using 100% during this phase of flight, since all the holes in your head get filled with pure oxygen. This is absorbed later, causing ears and sinuses to block. Having more and bigger holes than anyone else, TAT agrees that this is so. However, we've never experienced more than a slight discomfort some hours after flying--even after making many a two-hour flight on 100%. In short, Maj Neely gave some reasons for both sides of the argument and left the subject open. Since there are a few more reasons pro and con, your old TAT is going to toss two of them on the table to show you why our command procedures are as they are. First off, use of 100% oxygen during a night or instrument approach won't sharpen your thinking or make you see any better if you've been getting normal oxygen... but if you haven't been getting proper oxygen, *it will surely help*. Remember, hypoxia is a rather insidious beast . . . most of us are able to recognize its symptoms in the daytime. At night or when quite busy flying an instrument approach, it can easily go unnoticed. Also, mild hypoxia symptoms are difficult to perceive.

Secondly, an approach and landing is a busy time of flight and is accompanied by pressure changes and power changes which can readily induce a sick air conditioning system or other ailing component to fail completely, filling the cockpit with smoke. If a pilot is already on 100% oxygen, he has one less item to attend to during a phase of flight where he needs all the help he can get. These two factors are behind the command position. But there is another disturbing occurrence that is guaranteed to disrupt even the coolest boulder. This is suddenly finding that you are unable to breathe with your regulator on 100% with the oxygen supply gone. This is why the policy producers added the phrase, "provided enough is available." All hands should take care to check the supply before going to 100% for this very reason, or return the system to normal after leveling at the lower altitude. Moral: Follow the reg until you present enough evidence to get it changed.

FROM OUT OVER the peaceful Pacific comes the tale of a Terrible T-bird with a warped sense of humor. Seems a couple of troops were taking the machine thru its paces. One of them tried a vertical recovery, but got into a nose-high stall. His reaction was to apply full left rudder. The bird's reaction was to snap hard left, pitch down quite steep, and roll quite uncontrolled in a negative G condition. As the mad machine made its way down thru 10,000 to 12,000 feet, both pilots said farewell and punched out.

Satisfied, the bird recovered, circled the area as if to thumb its nose at its ex-crew, then plopped into the ocean.

We will not argue with the decision to get out at 10,000 feet, nor will we make nasty remarks because these troops were unable to regain control prior to reaching this altitude. Frankly, the gyrations this docile machine can go thru prior to settling down into a steady state inverted spin are enough to make even Coolstone sweat. However, we will take a crack at the hard left rudder bit. What kind of a reaction did the guy expect from the bird? He got precisely what the book says will happen if hard

control is applied under the circumstances. A shrewd stick and rudder man doesn't bang the controls around when he finds himself with his machine in the wrong attitude minus airspeed, no matter what machine he flys. No sir! Instead, he gently, ever so gently, eases it into a more favorable position. In the case of a nose-high stall, he'll smoothly roll it towards the closest horizon, let it fall thru inverted, and won't try to hurry it thru either. A good number of the troops we've flown with on 60-3 checks seem to get worried when they suddenly find themselves upside down with the nose hanging high in the sky during vertical recoveries. We have long since gotten over being surprised when they haul back on the stick with a heavy hand while the bird shudders and shakes.

Poor technique. Being primarily desk pilots, they aren't used to cutting didos – which is the main reason we think they should be exposed to vertical recoveries once a year. Never can tell, they might accidentally get into this attitude while looking around the area hunting up new golf courses or something. Incidentally, Section 6 of the pilot's handbook contains an excellent discussion on recovery from out-of-control maneuvers and spins. You less aggressive T-bird jocks should consider this mandatory reading at least once a year. The rest of us should read it more often than that!

SHORTLY AFTER TAKING on a load of fuel from a KC-135, an F-100 driver found that he could only get 88% with the throttle wide open. He immediately headed for the home drome, punched off his twin 450's and made a straight in approach and landing. No dents, no busted tires, not even much sweat. As usual, TAT finds it rather difficult to argue with success . . . However, we noted that this lad made no attempt to switch over to the emergency fuel system and as luck would have it, the malfunction was in the normal fuel control. Yes sir, the old mill ran nice and sweet in the emergency system during the inevitable ground check which followed this in-flight abort. Had this troop switched to the emergency system, he could have made a less hasty return home, and just might have saved us taxpayers the price of two tanks and two pylons. Actually, the cost of such items is insignificant and this pilot would have been perfectly justified in dumping them if he were returning to home plate on the emergency fuel system. The difference is, the emergency system would have given him a certain amount of peace of mind, with complete power control. Also there would have been less chance of a sudden loss of all available power. Remember, the system he used was sick, sick, sick, and could have been ready to expire.

Many pilots, including old TAT, have a tendency to shy away from using the emergency fuel system . . . just because of what its name implies. Perhaps we should start calling it the alternate fuel control system. Doesn't sound as drastic, does it?

WHILE MINDING HIS business at night at flight level 310, the wingman in a two-ship formation felt and heard a mild explosion which was accompanied by decompression, a severe vibration, and a high pitch noise. A quick look around the office told him that his engine instruments were in the green, but he stopcocked the unit anyhow since he figgered it must be throwing buckets or coming unglued. The noise and vibration continued, so he fired it up, but got worried and stopcocked once more. After lighting up the second time, he noticed a hole in the left quarter panel of the canopy.

Old TAT can well imagine how this troop felt, since being jarred to full alert this way would have been bad enough in broad daylight. However, just because we sympathize with him doesn't mean we ain't gonna criticize. Once more, troops, don't *act* before you confirm your trouble. Don't stopcock until you see the EGT heading for the high peg. . . even then, the smart joe tries to keep it under the red line by reducing power. Read this five by and remember it the next time a vibration or unusual noise starts the adrenalin to gush forth.

UNTIL BIG CAT Two landed the flight went real cool like. After that things went from good to indifferent, from there to bad, then to worse. There are days like that. His landing was in front of mobile with gear, flaps and speed boards extended. He lowered the nose, pressed the nose gear steering button and pulled the drag chute handle. No chute.

He tried again. Still no chute. He tried the binders and the obstinate F-100 veered to the right. Left rudder had little effect, so he depressed and held nose gear steering, put in full left rudder and applied a generous amount of left brake. The aircraft straightened. Symmetrical braking was tried again . . . another right swerve . . . more work . . . trouble slowing, trouble staying straight . . .about 3000 feet to the barrier . . . called for the barrier. The mobile controller called and advised to clean up the bird so he pressed the panic button, then placed the tail hook down and pulled throttle off. The aircraft overrode the barrier because the MN-1A dispenser was still on. Big Cat turned off the engine master switch and stood on both brakes while the aircraft slowly turned to the right and ran off the hard surface just 50 feet short of the end. It ran into three mounds of dirt where the nose gear folded, and then slid to a halt against a tree.

To make a long story short, right after the dust settled an investigator looked at both brakes and found the right one quite hot and the left cool enough to touch. But, on checking out the system, investigators were unable to duplicate the failure or find

anything that would induce it. It was doggone well evident that a failure had occurred but they didn't know where, nor could they pinpoint it. Regardless, Big Cat Two was criticized for not turning off the anti-skid with a suspected brake failure. He was frowned at for not jettisoning external stores soon enough to permit a barrier catch. The crew chief was criticized for not pulling the drag chute retainer pin – which very neatly explains why this piece of equipment didn't work.

After all is said and done, TAT thought Big Cat Two had done a fair job trying to salvage a bad situation. Like most of us, he pays taxes. Therefore, he wouldn't want to needlessly dump his external garbage, but would keep it until it was fairly obvious that things were approaching a critical stage. Unfortunately, it has been our experience that once a landing emergency has progressed to a

recognizable critical stage everything seems to need attention at once. When this happens, everything doesn't get done when it should be done. This, then, is something you can file in the back of your head, along with such wise advice as getting your stopping started early. As for the crew chief, we'll withhold comment. We don't know the man, he might be a real sharp mechanic who got in a hurry and overlooked one item. If so, he will appreciate a guy we once knew who once lamented, "I've been painting houses for 50 years and I picked one man's pocket, but do they call me a housepainter?"

WE PICKED UP four materiel failure accident reports from another command and immediately noticed that three of the four pilots involved had to deploy their parachutes manually. Now that's a trend if we ever saw one! We point it out to again emphasize the need for following thru behind the automatic equipment. Causes of these malfunctions? One troop apparently snagged his sleeve on the lap belt while tumbling and opened it. As near as we can tell, the other two troops failed to properly install the gold key onto their lap belts. At least, they were still carrying keys, orange apples and such on their chutes when they landed.

This is a rather dumb trick, rather on a par with forgetting to fasten one's parachute leg straps . . . an oversite attributed to a certain red faced, slick headed old tiger we're rather well acquainted with. Fortunately he was still strapped to his aircraft when he landed. Moral: Take the time to strap in right. With that we'll scat, TAT. ●

AIR MUNITIONS

SPECIAL WEAPONS URS. If you are making out a UR on a War Reserve Special Weapon or on a bolster, do not enter the quantity affected in Block 5 of AFTO Form 29, unless you have to give this information in order to explain the extent of the problem. If you do give the quantity, you will automatically have to give the UR a security classification.

Trailers, clip-in assemblies and other items not provided for each weapon on a one-for-one basis do not fall in this category. In other words, you can give the number affected without necessarily having to classify the UR.

MACE MISSILE RECOVERY. As taxpayers, we should all be interested in methods used to save money. In line with this, the USAF Tactical Missile School at Orlando AFB is utilizing a system of missile recovery in its training launches which allows completion of a realistic mission and still saves the missile for future use. Under the old concept of training, a missile was tested to destruction; in other words it was flown once and destroyed at the end of the mission. Since a TM-76A MACE costs about $400,000.00, training over a period of years obviously would be extremely costly.

Under the recovery system concept, a missile is launched in the same manner as before and goes through the same programmed maneuvers. After the tactical phase of the mission is completed, the missile is brought down by parachute. To accomplish this, the missile is taken off its primary mode of guidance, altitude and airspeed are reduced, and a ground controller guides the missile to the recovery area where three 100-foot cargo parachutes are deployed. A trigger mechanism shuts the engine down and prior to striking the earth, two pillow-shaped bags automatically inflate on the underside. When the missile strikes the ground, these bags deflate to absorb the shock, the parachutes are released to prevent rolling, and a recovery crew stands by to retrieve it. In most cases the missiles are not damaged, but if they are the damage is easily repairable.

TALK! LOOK! THINK!!! The development of tactical surface-to-surface missiles began with the first operational USAF missile, the TM-61C Matador. This missile, "the talker," relied upon two-way electronic communication with a ground station for its guidance to the target. There were some disadvantages in having to maintain this constant communication, so the Air Force proceeded with the development of a new tactical missile. This development resulted in the creation of the TM-76A MACE which does not require assistance from ground stations. By scanning the terrain along the flight path and comparing it to information programmed into its guidance system, the MACE is able to follow the proper course to the target. Hence, "the looker." Still striving for improvement, the Air Force authorized development of a new missile, the TM-76B, containing a completely passive guidance system. This system is capable of computing its own course to the target without any electronic emission or assistance from external sources. Thus, "the thinker" was created.

PRACTICE BOMB MOD. When you modify BDU-10/E practice bombs with T.O. 11N-PB (BDU-10/E)-501, ship the parts that were replaced to AFSWC, they need them to use on the remaining bombs. If you drag your feet, these bombs will be delivered without the modification. Paragraph 5-1.5 of the T.O. gives the shipping instructions. ●

If you've wondered how to apply safety to the mission read . . . . . .

DEFINITION FOR SAFETY

TO MANY OF US, Flying Safety is little more than a bunch of posters hung on a bulletin board, some magazines to read in the latrine, or being bored for an hour each month down at the base theatre. We read the poop, we listen to the lectures, and go on about our business confident that this has made us safe.

But has it? Let's say the old man tags you with the chore of writing an ops order for a mission which is more complex than the garden variety of mission. He outlines what he wants done, and as a parting remark says, "Be sure you include flight safety in that plan."

"Yes sir!" you answer, silently wondering how in thunder you'll ever manage that. Chances are you'll end up writing a short paragraph to the effect that flight safety will not be compromised in order to complete the mission. This sounds good and safe, and seems to satisfy all hands, including the old man. At least he doesn't say anything.

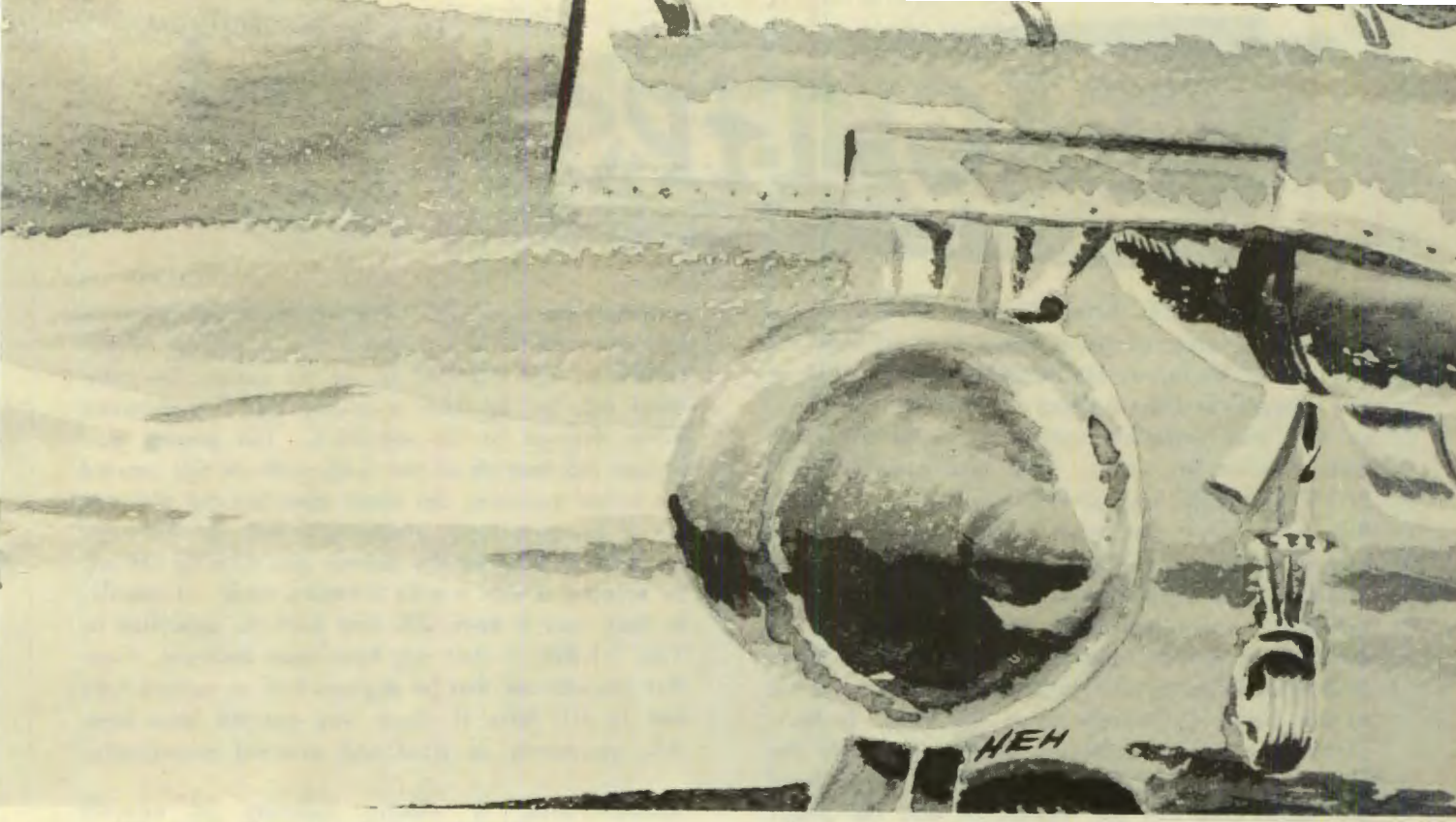
The mission goes off O. K., with no accidents. However, suppose you overhear a conversation such as one we overheard the other day . . . . . .

"We sure had a close one last night . . . " a muscular dark-haired Major said to a wiry weather-beaten fighter pilot we know.

This was enough to bring us to full attention as he continued, "We were taking off over the water, making single ship take-offs with our 105's well-loaded. In fact, we were carrying both external wing tanks, the belly tank, and bomb bay tank chock full of fuel.

"Shortly after old Willie Two got airborne he called and said his AB had gone out. At the same time he'd lost the air turbine motor and AC generator. So there he was with no flight instruments on a pitch dark night just feet over the water. He lost his navigation lights so we couldn't even see him, much less help him, and as he told us later, his airspeed had dropped way down to about 190 knots. He was certain that he was behind the power curve and it was all he could do to keep what little altitude he had. Right off, he tried resetting the air turbine and got it back. Then he reset the AC generator and it came on the line. But at the low airspeed he was still in trouble. We heard him say that he was going to try and climb out of it, and if it didn't work he'd eject. What he'd decided to do was to try the AB . . .It lit, and he was soon fat."

The old fighter pilot interupted, "Doesn't the AB on the 105 act like the 'hundred'? I mean don't you get a momentary loss in thrust before it lights?"



"Certainly," replied the dark-haired one.

"He sure took an awful chance," said the older pilot. "I'd have punched off those tanks."

The dark-haired major frowned and turned a little red. "Well, it was a real good mission," he argued, "and Willie wanted to go awful bad . . . . "

The old fighter pilot shook his head as he again interrupted. "To hell with the mission. It couldn't have been worth taking the risk. If he had been over a populated area, I could understand his reluctance to dump the tanks. But in the position he was in, a slow light or no light would have finished him. It just wasn't worth the risk. He should have dumped off all that weight, let the aircraft accelerate, then grab a little altitude before experimenting around with AB. It's just plain common good sense."

The old fighter pilot's automatic reaction to this story hints at the true meaning of flying safety . . . one reason why he's still around. Basically then, he achieves flight safety through his approach to flying. He has a safe attitude. He has learned to weigh available courses of action and instinctively select and follow the one with minimum risk. If you are alert, this narrative should give you some other ways to achieve flying safety. For example, the old pilot's decision to dump tanks was predicated on the aircraft being over a relatively uninhabited area. In setting up a mission requiring heavyweight take-offs, you should anticipate someone getting into trouble. Whenever possible, wind direction and velocity permitting, specify that max load take-offs will be made on a runway that directs the aircraft over a sparsely populated area. Also brief your troops to keep the pickle button well in mind should they ever have to abort, have an AB malfunction, or such.

It takes a certain amount of imagination to include flying safety this way. It also takes free exchange of information. Willie Two's scare should have been reported as an OHR, or even as an incident. That way others could profit from his experience.

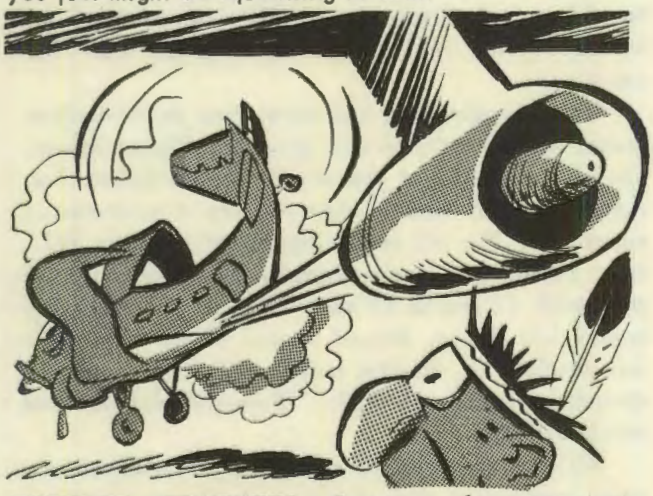
Using imagination, and developing an instinctive proper safety attitude will give you Flying Safety. This isn't limited to operation's people either. For instance, we'll assume that you are a maintenance supervisor. You are reviewing the AFTO Form 781A on a multi-engine recip aircraft. You read, "During go-around #3 engine oil temp went off scale hot and engine lost torque. Manual control of oil cooler door was ineffective. Engine feathered." You check the corrective action. It reads: "Removed and replaced actuator."

Will you go on to the next item? Or will you use your imagination and visualize that engine getting hot enough to lose torque and throw the oil temperature to the peg? If you do use your imagination, it's a pretty good bet that you'll have the people who signed off this write-up standing in your office getting a little information on how to use their imagination. That is unless they gave that engine a pretty thorough going over and failed to note it in the write-up. ●

TAC TIPS

DEADLY SQUEEZE. At this writing, all G-suits are supposed to have the check valve removed from the filler hose. While you are thinking about it, look to see if your G-suit has a check valve on it. If it does, go see your personal equipment people and have them remove the valve. TAC message TOTN-SP 07-1522 dated 20 July, gives the authority. Although the check valve may seem to be a small item, it helped cause an F-104 pilot to lose control and crash during a demonstration flight. He reported that his G-suit valve had stuck open just prior to the crash. With this malfunction, the check valve makes it impossible for a pilot to bleed off the excess air in his G-suit by disconnecting the hose. In fact, should the hose accidently disconnect while the pilot is pulling G's, the suit would be left inflated and could give him the impression that the G-suit valve had malfunctioned.

SQUAWK EMERGENCY. Did you know that you are supposed to select Mode 3, Code 77 when squawking emergency on SIF equipped aircraft? Well, you know it now . . . and don't forget it in an emergency, else you just might be squawking in vain.



RUFFLED FEATHERS. Quite a few transient aircraft were on a TAC base to take part in an exercise. For this reason, the ramp was crowded when the crew chief of a visiting B-66 went out to start his machine and move it to another parking area. He had two airmen with him who helped check the aircraft over and start the number one engine. When number one stabilized in idle, the crew chief switched the crossover valve and increased power to 75% so he could fire up number two. A warrant officer rushed up and signaled to cut the power. The crew chief did, but by then, a gooney bird had received minor damage to its elevators. The gooney was parked 160 feet aft of the B-66, with its tail toward the newer machine. Jet blast wrenched the elevator out of the gust locks slamming it full up. Although the crew chief knew the gooney was directly behind, he thought it was a safe distance away. It wasn't. In fact, had it been 200 feet back as specified in T.O. 1-1-309, it still may have been damaged. From this you can see that jet engines kick up quite a fuss and it will help if those who operate them keep this constantly in mind and proceed accordingly.

SIMULATORS. A weekly summary of aircraft accidents published by the Navy told of two pilots who were confronted by practically identical emergencies. One pilot was an IP with over 400 hours in the aircraft while the other had only nine. One pilot handled the emergency like a pro and did everything strictly by the book. The other misinterpreted the emergency symptoms and wasn't familiar with the proper procedures.

Which one was the professional?? Unfortunately, it wasn't the experienced man. True, he had become quite skilled at bombing, gunnery, formation and such, but hadn't been in a simulator for over a year and had put little effort into keeping emergency procedures fresh in his mind. On the other hand, the inexperienced pilot had just completed a simulator course and was thoroughly familiar with all emergency procedures.

This state of affairs is not restricted to our floating friends, as a close review of many a TAC accident report will show . . . and it can't be cured with a lecture program. At least, lecture programs are not nearly as effective as well-planned regular simulator drills. Are your simulators being utilized? They are? How *well* are they being used?

SHIPMENT OF TDR EXHIBITS. After an oxygen regulator was lost while being shipped to Brookley AFB as a TDR exhibit, the Air Force Logistics Command was asked to help prevent future losses. In reply, AFLC recommended that such items be

shipped by LOGAIR. This will assure hand-to-hand receipts throughout the shipment. AF Form 127 is used for this service and procedures are outlined in AFR 76-34. AFLC also stated that it would be OK to use railway express protective signature service for items not considered suitable for shipment by LOGAIR.

FILM FARE. The following films recently released by the Air Force should be of interest and should be available now in base film libraries:

- FTA 461a – High Altitude Refueling – F-100D/F Aircraft.
- FTA 461b – High Altitude Refueling – F-104C Aircraft.
- FTA 461c – High Altitude Refueling – F-105 Aircraft.
- FTA 461e – High Altitude Refueling – RB-66 Aircraft.

Installations not having film libraries should submit requests on AF Form 253 to the Air Force Film Library Center, 8900 South Broadway, St Louis 25, Missouri.

DISTURBING SILENCE. A recent survey showed that 75% of all aircraft radio failures in the United States occurred in T-33 aircraft. This mute fact should be considered by pilots operating these aircraft, and should be a governing factor in planning instrument flights during marginal weather.

STIFF STICK. An F-105 driver had trouble moving the stick while making a flight control check after start up. He decided to abort, raised the seat to install the ground safety pin . . . and found that the stick operated normally. The partial pressure suit hose had been wedged between the seat and the stick well cover. This is an old hazard which can have rough results. So, regardless of the machine you fly, keep the area around the control stick clear.

IT BLINKS, BUT . . . About 45 minutes after liftoff, a TAC pilot felt sleepy and had trouble reading his Form 21a. Suspecting hypoxia he started to turn the regulator to 100%, then noticed the oxygen quantity gauge on zero and went to a lower flight level instead. He had been checking the blinker and seemed surprised to find it still working even tho the system was empty. He wouldn't have been surprised had he known his equipment a little better. The blinker was indicating correctly, since all it tells a pilot is that he is connected properly and breathing thru the regulator. If the regulator is set on normal, cockpit air will be drawn thru the regulator when oxygen supply is exhausted and the indicator will still blink. If the regulator is set on 100% nothing will come thru once the oxygen supply is gone. The blinker won't work . . . but if this happens to you, the blinker will be the least of your worries since you'll find that you can't breathe.

ATTENTION RECIP PILOTS. The engineering types did some experimenting and found that you can cause spark plugs to foul just by making a rapid power increase. Any rapid increase, such as from idle to normal run-up power or from lean cruise to climb power will increase the danger of plug fouling. Here's what happens. During use, the ceramic nose core and other parts of a spark plug are normally coated with a lead salt deposit. At idle or low cruise a certain amount of carbon is laid down over the lead salt. If power is suddenly advanced, the temperature of the nose core rises rapidly and a chemical reaction takes place between the carbon and the lead salt. This reaction forms molten lead which runs down the nose core and shorts the electrode. In most cases the lead temporarily shorts across the gap, then breaks off. When the temperature rise is slower, the reaction between the carbon and lead salt is also slower and the engine is able to scavenge this material out the exhaust. So take the hint – add power smoothly and evenly and your engines will respond in kind.

DIDN'T CHECK. When an F-100 pilot pickled off a practice bomb during a special weapons laydown delivery the bomb ejected from the dispenser and then the dispenser fell off. During the run, the armament selector was on special stores with mode selector on manual. The special stores handle had inadvertently been placed in the "out" position. Accuracy of the drop was not reported. ●

WATER CAPERS

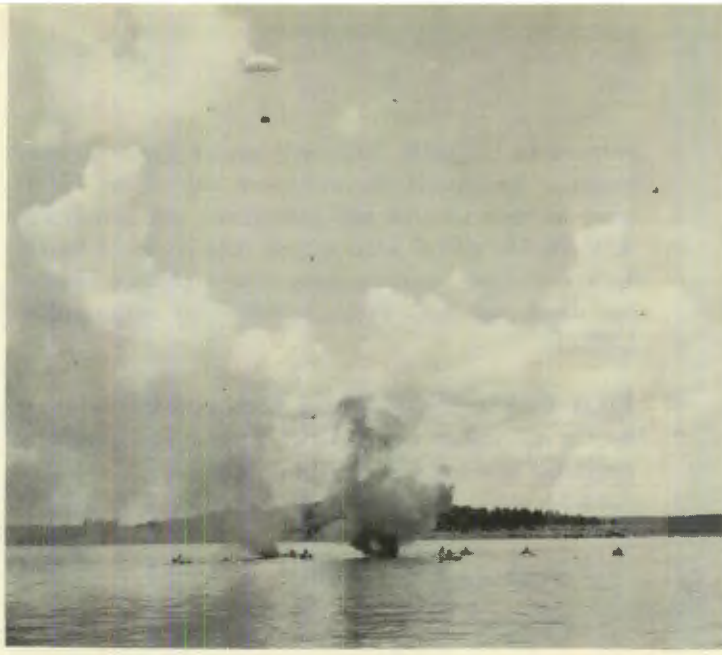
MEMBERS OF THE 65th Troop Carrier Squadron, Davis Field, Muskogee, Oklahoma, recently took part in a squadron water survival training exercise at Lake Tenkiller. The men completed an intensified ground course on water survival, which included films, lectures, and demonstrations of survival equipment, and then were tested to see how well they had learned their lesson.

As part of the exercise they were required to don parachute harnesses, underarm life preservers, and one-man life rafts, jump in the water, inflate their life preservers and board the rafts. All sixty of the one-man life rafts used in this exercise were over-age rafts which had been retained for training purposes. As a matter of interest, there was only one malfunction. It occurred when an airman jerked the inflating lanyard too hard and tore the bottle from his raft.

Twenty-man life rafts were dropped to the "downed" aircrew members by three different methods – deflated without chute, inflated without chute, and deflated with chute. All drops were made from C-119 aircraft flying at 130 knots. In each case the crew members were required to inflate, board, and set up the rafts, and then use the items in the accessory kit.

The first raft was allowed to free-fall from 500 feet. When it hit the water the kit remained attached and floated beneath the raft. The raft was not damaged and was inflated without difficulty. However, most of the fragile items in the accessory kit didn't fare as well. The inflation pump and URC 4 emergency radio were shattered and several emergency ration containers were crushed and broken open. One desalter kit container was crushed, but the desalter itself was undamaged.

65TH TCS crew members inflate, board and set up the 20-man life raft, dropped to them during water survival training exercise.



Deflated 20-man life raft dropped by parachute using harness developed by TSgt Lee R. Pease, 65th TCS, Personal Equipment Technician.

The second raft was dropped from 1000 feet. The inflation cylinder was actuated as the raft left the aircraft and the raft was almost fully inflated when it reached the water. The accessory kit came off the raft and hit approximately 150 yards from where the raft did. The sleeve containing the inflation cylinder ripped off upon impact but the cylinder remained attached to the raft at the valve. All hard items in the accessory kit were damaged about as badly as those in the first drop.

The third drop was made from 1000 feet using a locally-fabricated harness and a cargo-type parachute. The parachute was opened by a static line. The drop was perfect in every respect. The harness prevented the case from coming off the raft and only one quick release buckle had to be opened to remove it. None of the items in the accessory kit was damaged.

It was apparent from these tests that the 20-man raft should be dropped only by parachute.

TSgt Lee R. Pease, Personal Equipment Supervisor (ART), originally developed the para-drop idea for the 65th, to make it easier to find and board the raft should a crew have to bail out over rough water or at night. This new drop procedure for C-119 aircraft may soon be adopted throughout the Air Force. ●

FAILURE TO FOLLOW PROCEDURES AND SOME CONFUSION ON THE FLIGHT DECK RESULTED IN THIS

CLOSE CALL

It was the third mission of the day. The base was in the midwest. Field elevation was many feet. The weather was CAVU with the temperature of the runway at 90°F. The bird was a KB-50. Shortly after take-off at approximately 1500 feet above the ground the engineer advised the pilot that one outboard engine accessory overheat light was on. The pilot decided to feather the engine. After the feathering check list was completed the pilot called for landing instructions since they were only a few minutes from the home base.

Coming down the final approach the jets were shut-down and the before landing check completed. As soon as jets were cut, RPM on the recips was advanced to 2550. The aircraft seemed to settle more than usual and power had to be applied to maintain a proper rate of descent. As the bird came closer to the ground it appeared that the touch-down would occur on the overrun. The pilot popped the throttles of the three operating engines to full METO power, causing a momentary directional control problem. This caused the bird to skid to the left of the runway, so at an altitude of 15 to 25 feet the pilot elected to go around. The gear was retracted and max power was left on the three operating recips. At this time the A/S was 10 knots below the minimum recommended for an approach or go-around. Due to the high field elevation, and the fact the recips were operating without turbos, only 53-inch M.P. was obtainable. This resulted in a critical shortage of power and the bird would not accelerate.

The pilot called "start the jets and jettison fuel." The fuel had already been jettisoned from the bomb bay tanks so only the jets were left. The co-pilot hit both air start switches and moved the throttles out of stopcock. But he was in a hurry and inadvertently opened the throttles too far causing the tail pipe temperature to zoom off scale high. The pilot noticed the over temperature and pulled the throttles back to stopcock. Realizing what he had done, he then moved them to midway between start and idle. The RPM at this time was approximately 20%. The instructor engineer on the nose wheel hatch noticed the trouble and leaned across the aisle stand advising the co-pilot that he would bring number one jet in. At this time an instructor pilot in the navigation compartment suggested that the feathered engine be brought back in. The co-pilot and the engineer began the unfeathering procedure, leaving both jets to the instructor engineer. The instructor engineer brought both jets up to 100% while the pilot was steering the bird away from populated areas. As the jets were brought in, naturally, the bird passed flap retraction airspeed before the flaps could be retracted. Shortly, however, everything returned to OPS normal and the bird was landed uneventfully.

Now let's look back and see why things got out of hand. First, the engineer failed to check the voltage, as outlined in the flight manual, when the overheat light first came on.

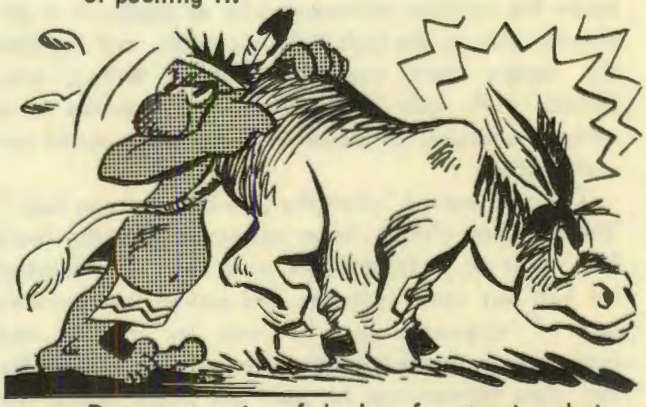
Although the decision to feather was according to the dash one, the book states that the engine will be restarted if the light remains on after the engine is feathered, and it did. Next error came when the pilot cut the jets approximately one mile from the end of the runway. The flight manual states that the jets will be cut when the aircraft touches down. The pilot also let the airspeed drop several knots below the recommended approach speed for the weight of the bird. Directional control was not maintained when power was applied, resulting in the bird skidding off to the left of the runway. The pilot called "going around" but did not call for max power. The engineer called "going to max power" a few seconds after "going around" was announced. All things considered this crew got into a hole that wasn't too hard to get in, but you'll have to admit that it took a lot of team work to get back in the blue again. Perhaps more emphasis should be placed on simulating below normal speed go-arounds, including stall recovery from low power, emergency jet starts, etc. However, if every one followed the handbook procedures, they wouldn't end up in hassles like this. ●

OILED STIFF. Some maintenance men have been using synthetic base aircraft turbine engine oil as a suntan lotion. If you are one of 'em, DON'T DO IT, THE STUFF IS DANGEROUS. IF YOU USE IT VERY MUCH, IT MAY PARALYZE YOU! You're better off to stay unoiled and burn . . . although the PX isn't that far away, or suntan lotion that expensive.

FIRE EXTINGUISHERS. CO_2 fire extinguishers may be weak and erratic when the temperature is below zero, unless they have been winterized. Air Force Manual 92-1 states that CO_2 extinguishers which are to be exposed to extreme cold should be winterized with nitrogen. T.O. 35E1-2-5-1 describes the winterizing process.

AIRCRAFT TOWING. Towing aircraft can get downright dangerous unless proper procedures are followed. Although different aircraft require special towing treatment, these general rules apply for all aircraft:

- Two people are needed for towing in open areas; one on the tractor and one in the cockpit. In congested areas with large aircraft, five people are required; one on the tractor, one in the cockpit, one watching each wing tip for clearance; and one watching nose and tail clearances.
- Where practicable, move all objects from the path of the aircraft.
- Disconnect nose wheel torque links on tricycle geared aircraft; unlock tail wheel on other aircraft.
- Check landing gear handle in down position.
- Make certain that all landing gear locks are in place. If power is available on the aircraft, check for a gear down and locked indication.
- Check hydraulic pressure for brake system. If hydraulic pressure is not available, then it will be necessary to station a man beside each main gear to chock them in case of trouble.
- Retract flaps. If flaps cannot be retracted on large aircraft, an additional man is required to relay signals from the person watching the tail or nose clearances to the person driving the tractor.
- Insure that no doors, plates, or other loose items will fall from the aircraft during towing.
- If towing at night, turn navigation lights ON.
- Do not exceed 10 mph. Do not attempt to make a turn that might cause tow bar and tractor to jacknife. Use extra care during adverse weather conditions.
- Operate tractor smoothly. Do not jerk tractor or put excessive strain on aircraft.
- Whenever practical, pull the aircraft instead of pushing it.

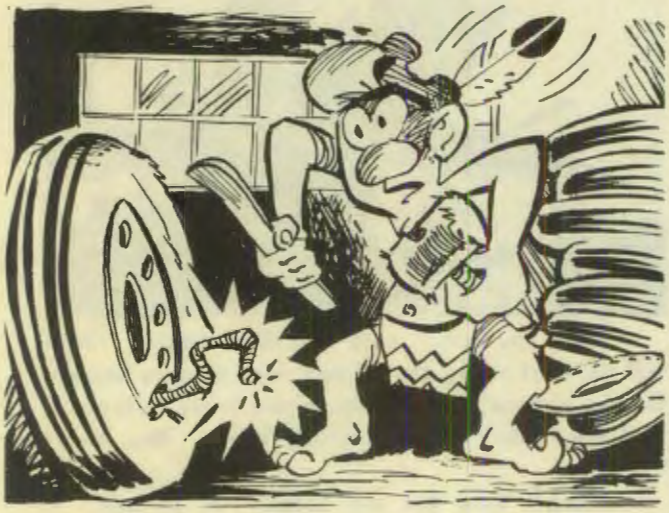


- Do not use aircraft brakes for steering during towing. If it is necessary to use the aircraft brakes for emergency, use them equally to avoid swerving.
- All commands between tractor and cockpit should be oral. No hand signals permitted. Wing and tail clearances to the tractor operator should be transmitted by hand signals.

- Whenever possible, keep the inside wheel or wheels turning slightly during sharp turns to reduce stress on the gear and tires.
- Chock wheels before disconnecting tractor from aircraft.
- Turn navigation lights off if used.
- Use good common sense during all towing operations.

—FSF Aviation Mechanics Bulletins

DISCONTINUED SUPPORT SQUADRONS. The 2d, 3d, and 4th Strategic Support Squadrons listed in Attachment A-1, Chapter 18, Parf One, Volume I, AFM 67-1, have been discontinued. They will be deleted in the next revision to Chapter 18.



TIRE BOMBS. Working with tires is not hazardous if done in accordance with established rules and procedures. Don't take unauthorized short cuts . . . and remain alert, even though the job may seem dull and routine. Every step in tire build-up and tear-down is important. Compare the aircraft tire to a short-fused bomb. The step you omit, or the precaution you fail to take, is all it takes to light the fuse.

CORROSION CONTROL. Corrosion control requires great care and much work but it is relatively simple. Keeping the aircraft clean and thorough, systematic inspections are the keys. Check all unpainted areas; any area where moisture collects and areas where dissimilar metals are in contact. Remove exhaust stains, food, fuel, urine, battery acid, and other spillage. Give special attention to toilet areas. If the aircraft is exposed to salt air or salt spray, wash it frequently with lots of fresh water. If intergranular corrosion is suspected, check with ultrasonic testing equipment.

KB-50 HEATER EXHAUST DUCTS. Since the materials used on heater ducts by the IRAN facility seemed to burn when a cigarette lighter was held under them, OCAMA investigated to determine their suitability. They found that the white material was impregnated asbestos cloth reinforced with wire. When it was heated in the open air a portion of the filler oxidized but the asbestos retained its characteristic properties. When heated between two plates the material would withstand temperatures above 600° F and the filler material at these higher temperatures would melt forming a tighter seal. The black material became brittle and cracked when placed in 400° F hot dry air, but retained its flexibility when placed between heated plates for several hours at 400° F. The tests indicated that these materials are satisfactory when used as shown in figure 71, page 191 to 1B-50(K) –4.

LOST CONDITION TAGS. SAAMA (DSW) is receiving some material from the field without condition tags. To prevent tags from getting lost during shipment, be sure they are securely attached with string or wire. Don't use tape. It is not authorized in paragraph 5, Chapter 5, Volume 1, AFM 67-1, 1 May 1961.

THE CHIEF MASTER Sergeant eased his bulk into the swivel chair and let out a deep sigh.

"You sound as if the cares of the world are getting a mite heavy on your ample shoulders," said the old Sarge, tamping a generous quantity of Old Barnsmell into his corn cob. "What's the matter, been investigating that bird the 12th blew up?"

"Don't you know it!" replied the chief with some feeling. He frowned, "And darn'd if I can figure it out . . . "

"I suppose they had adequate SOP's," interrupted the old Sarge "and I'd be willing to bet my pipe that at least one, if not two people failed to follow 'em."

The chief master nodded. "Right on both counts. Have you been over there?"

"No, but I heard the 20 mm go off and looked out in time to see the F-100 flare-up and start to burn, so I figured that someone had accidently fired a round. Naturally, old Ed over at the 12th would have good SOP's because they're the same as ours . . . so I know someone must have cut some corners . . . it's *almost* as simple as that."

The chief master raised one heavy eyebrow. "You sure you didn't go over to 12th?" The old Sarg e nodded his head and grinned. So the chief master continued, "Well, you'll do for a GI Sherlock. At least you've called the turn so far, tell me more."

"Now don't go getting sarcastic or I won't give you any water to dilute your coffee. However, I think I can hazard one more guess. I'd bet that our friends in the 12th carried that gun around loaded for . . . oh let see . . . ," he checked his calendar, "I'd say five days."

"Well I'll be darned," replied the chief master suddenly getting very much interested. "I found that out just before I came over here, how'd you find it out? I'm serious."

"Elementary, Watson, old boy, the 12th went on this big flying binge starting a week ago last Monday. They fired gunnery Monday, Tuesday and Wednesday and then flung bombs for five days. Today they started gunnery again. The accident happened when they started to launch their first gunnery mission." He grinned, "It had to be one of two things. Either the guy loaded that round this morning and fired it, or it had never been cleared from the last mission on Wednesday. Since we normally make a circuit firing check with a magic wand before we load ammo, I just guessed that a round had been left in the gun and that the guy who made the circuit check didn't follow the SOP. In short, he didn't make sure the gun was empty and fired it. Sort of a double failure, but I'm honestly not too surprised." He leaned back in his chair and watched the perplexed expression on his visitor's face.

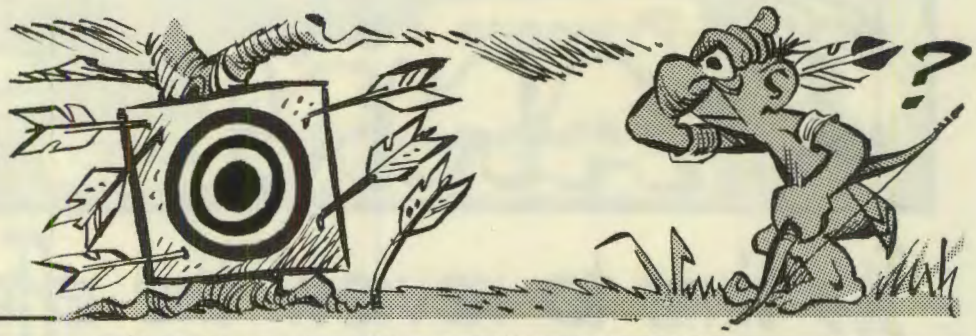
"OK , you win," said the chief master. "Now tell me what really caused this darn thing to happen. On the surface it was because two fairly well-qualified men didn't follow existing SOP's. Why didn't they?"

"That," said the old Sarge, "is so plain it hurts. First off, I sat here off and on all last week and watched those guys hustling around trying to launch aircraft, and they launched plenty. Further, I listened to 'em fly their pants off during the weekend. From the way they have been going I'd guess that they flew over 400 hours during the past eight days."

"Five hundred," interrupted the chief master.

"OK have it your way, 500 hours!" said the old Sarge, "I'm forced to admit that I admire their spirit, but don't you reckon that bunch had to scramble awful hard to keep those big machines in the air and keep them loaded with ordinance? You know they did. They cut corners to do it, too, they'd *have* to." He looked straight at his heavy-set friend, and finished his comment with a seriousness untempered by his usual good nature, "How else can you support that kind of flying? You work your men until they're practically punch drunk . . . and they start streamlining the operation. That bunch was lucky. At least no one got killed!" ●

TAC TALLY



AUG MAJ. ACDTS.	4510 CCTW	433 TCW	464 TCW	31 TFW	479 TFW	140 TFW	27 TFW	474 TFW	4505 ARW	127 TRW	401 TFW	363 TRW	131 TFW	4520 CCTW	463 TCW	117 TRW	102 TFW	354 TFW	4411 CCTG	64 TCW	113 TFW	108 TFW	446 TCW	4 TFW	512 TCW	107 TFW	122 TFW	440 TCW	1 ATS
F-105																													
F-104					3																								
F-101																													
F-100	1			2			1				1			1				1											
F-86	1																1												
F-84	1									1											2								
B-66																													
T-33																													
CONV.																							1						
HEL.																													

MAJOR ACCIDENT RATE
1 JAN. - 31 AUG

TYPE	1961	1960
F-105	18.7	88.8
F-104	82.2	44.7
RF-101	9.7	18.5
F-100	20.6	25.1
F-84	58.7	30.2
T-33	3.9	5.2
B-66	25.5	0
KB-50	8.1	8.5
C-130	10.0	0
C-123	5.1	0
ALL	15.6	13.9

A look at the aircraft accident log joltingly indicates that August was a dark-dreary month in TAC. Twelve major aircraft accidents were reported which made it the worst month we've had since November 1959. Total number of accidents occurring in 1961 now stands at 63 as compared to 55 during the same period last year. Consequently, the cumulative rate for 1961 is a point or so above the rate through August 1960. Eighty-three major aircraft accidents were reported during the entire year of 1960, so you can see just what must be done if we are to end 1961 with a lower rate. We will have to operate through the next four months with fewer than 20 accidents or an average of less than five a month. This goal will be even more difficult to attain since we already have logged six major accidents through the first 12 days of September. Flying hours are running just a little higher than in 1960, but not enough to compensate for an increase in total accidents, so let's all make a concerted effort during the next four months to hold the line and bring the rate down.


Princess
ANN
says:
It's time to review the effectiveness of your STANDARDIZATION PROGRAM!
STANDARDIZATION BOARD
HOW DO YOU STAND ?