AUGUST 1961

TAC ATTACK

TACTICAL AIR COMMAND

THE INVESTIGATION

TACTICAL AIR COMMAND

ATTACK

GENERAL F. F. EVEREST COMMANDER TACTICAL AIR COMMAND

LT GEN. G. P. DISOSWAY VICE COMMANDER

FOREWORD

Spatial disorientation and/or vertigo is an aeromedical factor which continues to be a problem in aircraft incidents and accidents throughout the Air Force.

It is impossible to prevent vertigo; at present, the most practical approach is through education.

In 1958, a specialized training program was developed in Tactical Air Command to aid the flyer in better understanding and appreciating the seriousness of disorientation/vertigo. This program was published in 1959 in Tactical Air Command Regulation 60-13, In-flight Vertigo Training Program. This specialized in-flight training is unique, effective, and is accomplishing its objective.

It has received much favorable recognition from other major air commands and the United States Air Force Instrument Pilot Instructor School. Adaptable parts of this program are being incorporated into AFM 51-37, Instrument Flying Manual. In addition, the United States Air Force Safety Congress Report of 1960 recommends to the Deputy Chief of Staff, Operations, USAF, that this program be included as a part of AFR 60-4.

Tactical Air Command should be justly proud of having originated the first active in-flight training techniques to assist in reducing disorientation incidents and accidents.

JOHN R. COPENHAVER
Brigadier General, USAF, MC
Surgeon

THIS ISSUE

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Use of funds for printing this publication has been approved by Hq USAF.

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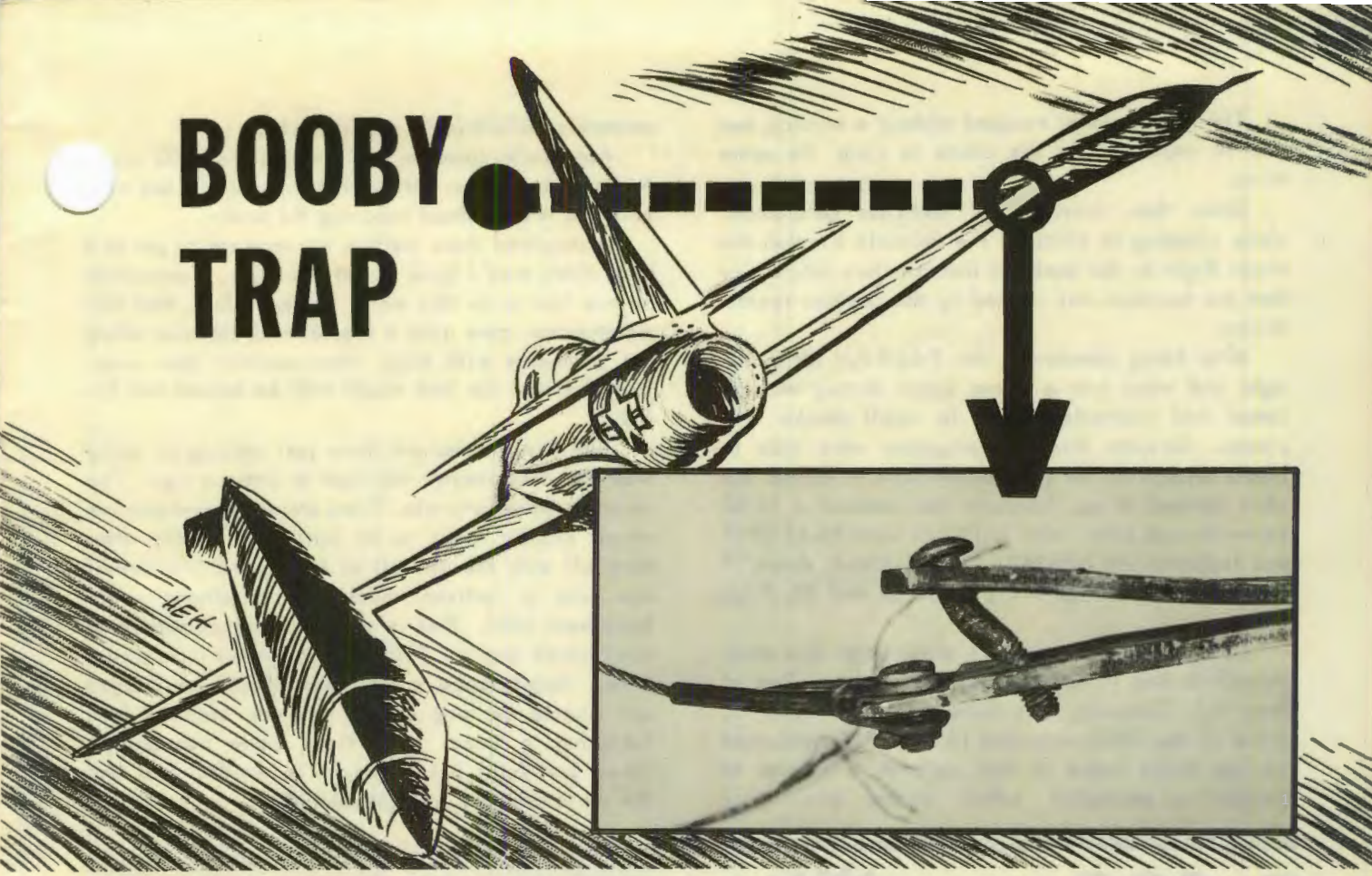
COVER PHOTO

Getting the fleet ready to fly at Luke AFB.

USAF Recurring Publication 62-12

BOOBY TRAP



TWO FULL COLONELS from another command had T-bird difficulties which were compounded by a maintenance goof to the point where they had to abandon the machine.

The mission started innocently enough with both colonels giving the bird a thorough preflight, followed by a normal start, taxi and such. Arriving at the active, they gave the aircraft an adequate pre-takeoff check, noted oil pressure, load meter, and other instruments in the green with fuel gangloaded, tip light out. After receiving takeoff clearance they launched. During the 5000-foot climbing check, they were in weather; therefore, the colonel in front left the fuel switches gangloaded so he wouldn't have to worry about fuel handling while concentrating on the gages.

Breaking out on top they leveled at 33 thousand feet and the colonel in front reached down to turn off the main wing and leading edge, only to notice a red light. The main wing tanks had fed out. Suspecting a stuck float valve, he went through the procedure for unsticking it without success. Checking with a GCI station, the colonels found that their departure base was the closest suitable base so they headed for it and explained their problems to the GCI controller. The controller advised them that they were over a desolate area if they wanted to get rid of the tip tanks. They did, and the colonel in front pressed the jettison button. The left tank departed no sweat, but the right one stayed on. The colonel pressed the button again but nothing happened. He pulled the manual release and again, nothing happened. Enroute to the airbase the colonels explained their problem to the tower and three well-qualified T-33 pilots were made available. Using the dash one, they advised the colonels on what to try, but all efforts were unsuccessful and the tank stayed on. The colonels checked and found that they could not slow to 150 knots without losing aileron control, so they jettisoned the canopy and punched out.

The colonel in the rear seat ejected first. After his seat belt released automatically and his chute opened, he noticed that the seat was dangling near him. He looked closer and found that the shoulder harness had wedged under the oxygen T-block fitting. (Ed – See Seat Snag, in the March ATTACK for an article on this possibility.) After he untangled the harness, the seat fell free. Looking down, he found himself headed for some high tension wires. He decided to unbuckle his leg straps so that he could fall free should he hit the wires . . . assuming that he didn't short them out. Fortunately he missed the wires by a scant 20 feet. He received major, though not severe, injury from his fracas with the seat.

The other colonel escaped without a scratch, but had to expertly slip his chute to clear the same wires.

Other than leaving fuel switches gangloaded while climbing to altitude, the colonels handled the whole flight by the book, so investigators determined that the accident was caused by the jettison system failure.

After being abandoned, the T-bird fell off to the right and went into a steep spiral hitting at high speed and scattering itself in small chunks and pieces. Despite this, investigators were able to locate enough of the jettison mechanism to find out what gummed it up. Someone had inserted a 10/32 screw through extra holes drilled in lever PN 457584R and indicator PN 205914R. (TO 1T-33A-4, dated 21 December 1959, Figure 11, Index 52 and 53, Page 2-30.)

Curious, the investigators shook down four other aircraft to see if they too had these holes. Two of them did. Checking, they found that TO 1T-33A-95, dated 16 May 1955, rescinded 16 May 1957, authorized drilling these holes in the indicator and lever to provide a secondary safety feature when door assembly 207038-6L/R was removed.

Apparently someone had inserted the 10-32 scr to make the system safe with the panel off, and th buttoned it up without removing the screw.

It remained there waiting for someone to get in a bind where they'd have to jettison tips. Fortunately no one had to do this while low and slow. Had this maintenance crew used a regular tank jettison safety pin (complete with flag), they wouldn't have overlooked it and the bird would still be around and flying.

The screw remained there just waiting to booby trap the first aircrew who had to jettison tips. The colonels were fortunate. There are many emergencies which require tanks to be jettisoned shortly after take off with the aircraft at low speed. Failure of one tank to jettison under such conditions would have been fatal. This is why maintenance personnel must insure that the T-33 jettison system is in proper order. Maintenance safety pins should be flagged and should be long enough to keep someone from buttoning a panel over them. More appropriate, these particular holes should be welded over and the parts properly straightened. ●

F-105 CANOPY

All pilots pulling mobile control should glance at these photographs of the F-105. In the picture on the left the canopy is unlocked and will come off in flight unless someone . . . you . . . calls it to the pilot's attention. On the right, the aircraft is clear and ready to go. We deliberately failed to include the usual set of arrows pointing out the difference, since they won't be there if the real thing comes your way.

—Capt Vincent H. LaFetra Jr.
FSO, 4520th CCTW

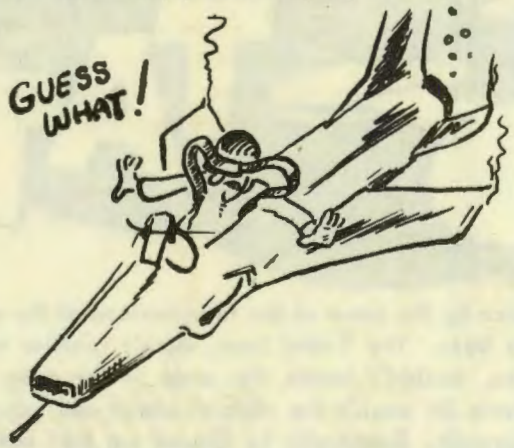
BACK IN THE good old days men had to use a certain amount of caution if they expected to avoid trouble. A reliable source tells of difficulties one of our earlier ancestors had because he took a bite of the wrong apple. Reportedly, the same man had to make sure he avoided certain types of ivy league styles. Later, history abounds with tragedies induced by men crawling into the wrong sack.

Now, of course, we're more refined. Instead of fig leaves and knights in armor we have airplane drivers decked out in worn-out flight suits, sporting new helmets with nice neat masks that have old style microphones that fit against the teeth--whether anyone likes it or not. Instead of chasing around on horses, telling of valiant deeds they've done, and looking for ladies to defend, the modern breed sits around ready rooms waiting for aircraft to fly and tell of . . . Oh well, the point is, the modern knights of the sky still goof from time to time by getting into the wrong spot. For instance some have been known to open the wrong book and make a penetration at Dyress when actually they wanted to go to Dress or to Sewart when they wanted to go to Stewart or to Greenville, Miss, when they wanted to go to Greenville, SC (Donaldson), or Wendover when they wanted to go to Westover. It's a fact! TAT knows of more than one such slip. The most recent involved a T-bird driver who was diverted in weather to one of these bases. He reported over high station, and asked for a penetration to the base having a similar name . . . .

In fact, he called out the wrong base several times. No one corrected him, and sure 'nuff, when it came time to glide down the slide, he followed instructions from the wrong plate and got badly lost. He was then offered an immediate approach to an Army air patch . . . but the controller referred to the place by the name of the town instead of the name of the base. The T-bird troop wasn't familiar with the area, couldn't locate the name of the town on his charts (it wasn't the official name) and refused the approach. Eventually he flamed out and busted the bird. The pilot picked up the tab for this one because he did not make sure that the station he was working transmitted the same series of dots and dashes as was printed on the letdown plate . . . He didn't check the frequency either. Had he made either check, he would have caught his error. But he had help. The controller was familiar with the area and should have known that his station had a name similar to another base. He should have caught the pilot's error and advised him in no uncertain terms that he suspected him of being confused. This, with or without tact. Better to have a slightly angry or embarrassed pilot than a lost one. The controller goofed again when he failed to use the proper name for the Army Air Base. When you consider the fact that the pilot was having to look up data while literally on the fly, and had been diverted, etc., his errors become more understandable than those of the controller.

You know, this accident should serve as a warning to a lot of us. We've been spoiled by omni or TACAN to the extent that we have forgotten the cardinal rule for tuning in any fix . . . that is to *identify* the dern thing. Most of us found that we didn't *need* to listen to the dots and dashes during *normal operation*, so we didn't. Perhaps we've forgotten that accidents invariably occur when things depart from *normal* . . . such as having a flight plan tossed out the hatch by unforecast bad weather or a sick bird. TAT, for one, plans to adopt the procedure practiced by a young troop we know who shares our belief that you shouldn't trust anyone when you fly. This troop keeps his omni or TACAN volume just loud enough to barely read at all times. Should ever

he have to make a quick change of stations or have some ground facility attempt to contact him on it instead of command, all he has to do is make the required channel change or crank up the volume a wee mite. Like he sez, it hardly adds to the background noise that is generally present anyway!



THE GOOD SOUNDS QUIT when the student pilot tried to advance power on the downwind leg of a gunnery pattern. He tried a couple of airstarts without success, then followed the IP's instructions and ejected. All witnesses reported that the canopy was jettisoned shortly after the student declared that he was getting out. Three long seconds followed before the seat and student followed suit. By then, the aircraft was at 300 feet descending and the ejection was one of those boom-pop-crunch affairs, on the good side by a fraction of a second. According to the student, ejection was delayed because he had trouble finding the ejection handle. He was slim and trim and had cinched up the seat belt nice and snug, this and the fact that he wore a backpack, left quite a bit of belt a dangling on each side and the loose ends managed to cover up the jettison handle. We don't know about the rest of you skinny lads, but your old TAT has started tucking loose seat belt ends under the edge of his parachute pack just in case.

OLD TAT QUOTES an F-100 driver who put a $10,000 dent in his machine. "As the airspeed went through 110 knots, I noticed a slight nose wheel shimmy. The shimmy disappeared at 145 knots when I eased some pressure off the strut. When the indicator hit 155, it appeared to stay right at that indication for about a second or so. It felt as if I was not getting full thrust and I elected to abort. I came out of afterburner and chopped the throttle to idle while calling out the abort over the radio. Full anti-skid braking was used and the drag chute was deployed. Deceleration was good and a barrier engagement did not seem imminent so I didn't jettison the 275-gallon drops, which were full. About 500 fe from the end, I was still going a little too fast for safe turn, so turned off the anti-skid to insure positive braking and went off the end at about 25 to 30 knots. The nose gear collapsed in the soft mud."

The bird rolled right through the barrier . . . but this would have had little effect on the end result since the barrier was located just in front of the soft mud.

The board decided a faulty airspeed indicator caused the accident and that some of the pilot's decisions contributed. His decisions will be well worth remembering should you have to abort, so let's look 'em over.

According to the board this troop didn't realize he was at a crucial point on the runway when he made his abort decision so he failed to stopcock the throttle or jettison tanks. Either action would have prevented this accident! In addition, he lost about 360 feet of good stopping distance when he shifted to manual braking. Old TAT reminds you that each situation is different. A pilot has to use judgment. In this particular accident the pilot made a doggone accurate assessment of his stopping distance. His judgment in this respect was very good. It would have been perfect if he had thrown in a litt insurance--just in case the brakes faded from all t work they were doing. True, he'd have had to be towed in or someone would have had to pick up a pair of ruined tanks, or both, but it would have been cheap insurance . . .

But there is another aspect of this accident which hasn't been commented on, and that is the original decision to abort. Aborting takeoff beyond the normal acceleration check point can be a tricky business--particularly if the drag rag fails. The

'onger it takes for a pilot to make this decision, the ickier and stickier the abort will be. Perhaps this is why no one likes to climb out on a limb and sound off on the subject. Well, even old tigers climb trees so here we go out on a limb.

Although it would have cost a few more precious feet...we'd have taken a real quick glance at the EPR before hauling back on that go handle. Too, too often our feelings have been wrong with regard to aircraft and wimmen. Fortunately with aircraft there are gauges to give verification of trouble. On more than one occasion we've controlled that sudden quick doubt and pressed on to a successful takeoff.

Admittedly when things are definitely amiss you discontinue--but we can remember far more aircraft being bent from a needless abort than were busted through failure to abort. All of us figger our line speed--or should figure it--and get a go, no-go determination that will let us halt with no great effort should our bird prove sick. We'll *never* quarrel with a no-go decision made at this point. We'll never question a later decision to abort provided the failure is serious and has been confirmed. But tell us....which is the more hazardous...Completing a VFR takeoff and flying around without an airspeed indicator until reaching a light weight, then following someone in to a landing using the full runway . . . or . . . trying to stop a fully loaded bird on part of the runway from 155 PLUS knots?

OLD TAT HAS HAMMERED at this one before, but a fresh report came across our cluttered old desk, so we'll have at it again. A crew from another command tried to maintain an assigned IFR flight level of 330 without cabin pressure. They didn't succeed too well, because the fella in the aft seat started having difficulty after less than 15 minutes at that level. At first he thought he was hyperventilated and went to 100%, but soon decided this wasn't the problem and asked for a descent. The pilot in front descended to 14,000 and continued on to destination at that altitude. The troop in the aft seat couldn't get out of the bird without help and had to be shipped over to the hospital. Seems he'd received a bad case of the bends. Weather was strictly field grade . . . clear as a bell, with a high thin overcast to keep the sun out of a pilot's eyes.

Obviously fuel and weather would have permitted flight at a much lower altitude . . . why then the decision to press on at 33,000? Cause of the mishap, according to the investigating officer, was the victim's susceptibility to decompression sickness. Hoo-boy! Reminds us of the chamber operator (high altitude chamber, that is) who was griping because so many of the troops were having trouble with hypoxia, bends, gas, ears, and such . . . . He concluded that they never used to have all that trouble in the old days. The altitude chamber he operated was located on the same base with a large headquarters and a high percentage of the people going through his chamber were older troops who worked in the headquarters . . . the very same people who never had trouble in the good old days!

Age is starting to catch up and with devastating effect. In other words, some of us older heroes can't adapt as well as we once could . . . . For this reason we'd do well to think twice before exposing ourselves to excess cabin altitude. Going up to extreme altitude in a chamber for a wee short period is quite a bit different than herding a reluctant iron bird to the same cabin altitude and trying to stay there for a spell.

TWICE DURING a five-minute period. Yak Yap tower issued taxi and takeoff instructions on guard for over 30 minutes . . . . Blah radio tied up guard channel by making repeated calls in an attempt to contact Bo Peep . . . Dog flight leader used the emergency frequency to give Dog two a lecture on radio discipline . . . Except for call signs TAT lifted two of these from an accident report and an Operational Hazard Report. We could have hunted up more, but due to this fine July weather, had difficulty stirring. Anyway, most of you probably have heard even worse compromises of good old guard and can make your own list. Regardless of your job: pilot, tower operator, approach controller, GCA operator . . . before you punch the mike button with your radio set on guard channel do as the civilians were supposed to do during the big war. Ask yourself if this transmission is really necessary. You are all responsible people and you are all capable of making the decision, OK?

UP IN THE GREAT northwest, a T-birdman ejected too low and was killed because his chute didn't fully deploy. He had failed to attach the zero lanyard – but this time it wouldn't have helped him much because the zero lanyard wasn't installed correctly and would have pulled off the auto lanyard release assembly before it could have pulled the "D" ring and deploy the chute. An emergency UR has gone out on this particular zero lanyard arrangement and the thing should be patched up by the time this goes to print. Therefore, unless you are hopelessly compelled to live dangerously, follow your handbook and use the zero lanyard. Admittedly, the lanyard is a prime example of makeshift engineering, but on many of our birds it is still the second best answer to the low altitude ejection problem. Use it. The first best answer? An early appraisal of an emergency followed by prompt action, i.e., Early Ejection; Avoid the Crash.

APPARENTLY A GOOD portion of you throttle benders havn't gotten the word on the oxygen T-block shoulder harness conflict. The people at Cannon AFB spotted this hazard and sent us the word . . . . which we published in the March issue under the title, "Seat Snag." In addition, the personal equipment people followed up with a small blizzard of paper work. Since then we've read of two different ejections where the right shoulder harness strap snagged on the T-block. On one, the T-block broke off and the seat fell clear. On the other, the seat slammed into the ejectee hard enough to induce major injuries. We could say that this served him right for not joining the ranks of our six faithful readers . . . . but we won't – because this hazard could easily slow an ejection just enough to produce a fatality . . . and friend that's too high a price for anyone to pay.

If you can't find the March issue which had photos of the problem, then read on.

The CRU-8/P connector – oxygen T-block – can snag your right shoulder harness strap during an ejection if you route the strap under the oxygen hose going from the connector to your mask.

It can't snag it if you place the shoulder harness strap over the oxygen hose. There is no danger of pinching off the oxygen supply and there is no interference with head movement when routed this way. Try it and you'll buy it . . . 'Cause it's a dern sight cheaper than the farm.

ABOUT ONCE A YEAR, just as certain as the starting of school, some troop will lose his wings or his life trying to show the world how hot an airplane driver he is. When this happens, old TAT thumbs back through the files and dusts off lecture numb 97 which points out the negative reception suc. stupid efforts invariably receive. This time we're launching old 97 because a young F-100 driver made a low pass over a heavily populated area, kicked in the AB and proceeded to climb away.

Last year it was because of the F-100 troop who made known his intent to, "say goodbye to the boys on the pad," apparently attempted some spectacular innovation shortly after takeoff, and promptly said goodbye to this cruel world for keeps.

Also, there was the twin fan driver who flew up a blind canyon while getting in his kicks at low level. All of these are slight variations of the same theme. The quest for attention, or for a thrill. ' each, the people involved payed a severe penalty . . some with their lives . . . one with a possible loss of his wings.

It doesn't pay . . . it *can't* pay! Commanders have no choice but to throw the book at anyone attempting such childishness. In the first place, the Air Force cannot afford to lose the equipment. More important, the public takes a dim view of being scared by some show-off in a heavy hurtling machine. You can't blame them, the combination is capable of slaughtering them by the score. Without fail they will react by complaining loud and long. Such adverse public reaction can cause greater damage to the Air Force than most of us care to admit . . . . In fact, could possibly effect our ability to wage war--fatally.

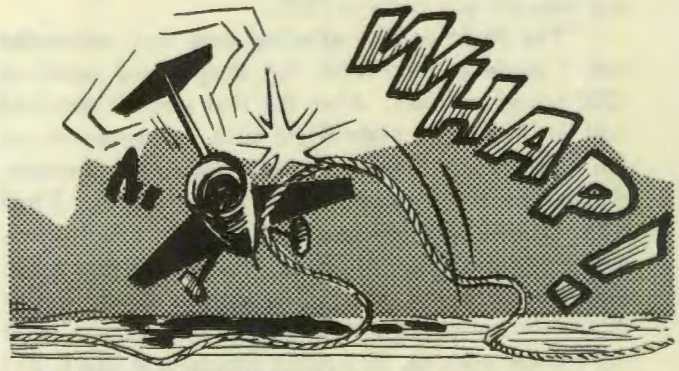
This is a serious business we're in . . . and there is no room for individuals too immature to resist an impulse to show off. We say this despite the many tales told of the fighter jocks of old. Most of the truly effective combat pilots we personally knew and flew with, both during the big war and in Korea, were anything but tigers in the traffic pattern or around the home drome. They knew they were good and saw no reason to demonstrate this fact--with deeds of stupid daring--either to themselves or anyone else. Think it over. TAT ●

TAC EVAL

RESERVE TAC EVAL SYMPOSIUM. In the photo on the left, Col Thomas D. Robertson, TAC's Director of Tactical Evaluation, presents part of the new TAC concept of flight management and tactical evaluation to flight examiners from thirteen Reserve C-119 Wings and one C-123 Wing. Also present were representatives from USAF, CONAC, and 9th Air Force. The participating flight examiners received practical experience using newly developed grading criteria and data collection worksheets for conducting standardization and Tac Eval checks. Each team alternately flew a mission and evaluated a mission. These missions included formation, low level navigation, and airdrops. All the wing team chiefs expressed enthusiasm for the symposium since it helped establish a practical solution for problems common to all users of a particular weapons system. In addition, all hands agreed that the personal contact and interchange of ideas contributed to a more realistic standardization program. The 446th Troop Carrier Wing, commanded by Brigadier General Russel F. Gustke, served as host for the meeting.

SAFE OR SALVO. The pilot of an F-100D inadvertently dropped two 450-gallon tanks and two Type VIII pylons while making a LABS system check. One of the pylons dropped through the roof of a house and caused substantial damage. The pilot checked the armament selector switch, but did not notice that it was 180° out of phase and was in the JETTISON ALL position rather than the OFF position. He had also checked the armament panel during preflight but had not noticed the discrepancy then either. The investigating officer determined that the shape and location of the selector switch was a related factor to the incident. (See photo.)

The square shape and location in the cockpit requires that the pilot scrutinize the switch closely to insure its correct position. Action has been initiated to replace the square type switches, but in the meantime double check before you press the button.



SLAPPED EMPENNAGE. Quite a few of our flying fields are being equipped with tail hook barriers. A touchdown on the cable of this barrier can cause it to slap your bird briskly in the aft section, rumpling its tail feathers. This has caused major damage, so play it cool and land like between Mobile and the end of the runway – Neh?

SQUAWK SQUAWK. Many military pilots still are not too polished on the use of IFF. We suggest all hands re-review these procedures. You can find them in the FLIP planning document, Section II. Among other things, you should know that you are supposed to squawk Mode 3 Code 62 while on a VFR local flight above 240. Also, you should know what to do if your parrot checks out sick. Do you? Are *you* up-to-date? ●

the INVESTIGAT

CAPTAIN SAXTON BEGAN the briefing at 1645, using the air refueling guide. Briefing was completed at 1740 and I preflighted my aircraft and started up at 1800. All instruments including flight instruments checked out satisfactory and take-off was made at 1820.

"The flight to the refueling area was uneventful and I made contact with the drogue and received 4200 pounds of fuel. After the last aircraft obtained fuel, we began the night flight back to Homepatch via Sin City, West Branch, direct Homepatch beacon. A fuel check was requested, and I replied that I had 6400 pounds. Number four replied with a fuel check and a complete oxygen check. I assumed that I had failed to hear the call for an oxygen check and at that time noticed that everything was normal, with the blinker working, 80 pounds pressure, 4 liters, and cabin pressure at 12,000 feet. Our altitude approaching Homepatch was 30,000 and approach control was given a call to establish a time for a VFR jet penetration. Approach control gave the flight leader clearance to descend VFR to 20,000 feet after station passage. If unable to descend VFR, to maintain VFR and advise. The weather at this time was given as 8000 feet broken with 10 miles.

"I selected 100% oxygen, turned the cockpit temperature up and pushed the defrost handles forward. We began a left descending turn at 300 knots with speed boards extended just before making the turn. Power was 85% and I maintained a position on the inside of the turn approximately two ship lengths to the side and one ship length to the rear. I do not recall having checked the attitude indicator at any time after take-off since I was either busy flying formation, refueling, or joining up after refueling.

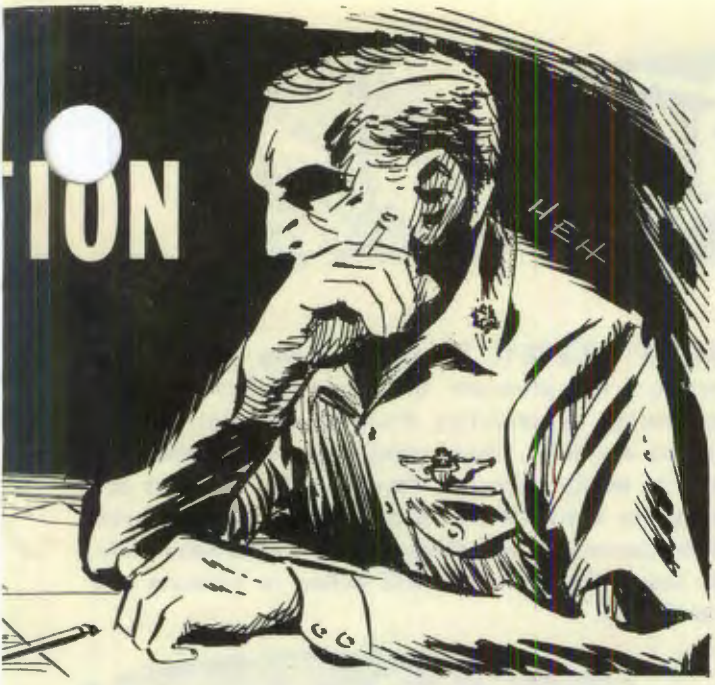
"During the descent to penetration, I lost the lead aircraft as he passed through some clouds. I picked him up for another instant and then lost him once more as I went thru more cloud cover. Immediately I attempted a transition to the attitude indicator and found myself in a nose-high attitude and thirty degree bank to the left with an airspeed of about [illegible] knots. Recovery was initiated by lowering the n[illegible] and trying to level the wings, but the indicator did not respond to this correction. At this time the attitude indicator was rolling from side to side and from a nose up to a nose down position. I could not see lights or the ground and decided that a recovery on instruments was all but hopeless, so I started the ejection procedures passing thru 15,000 feet.

"The canopy blew clear as both handles were raised; however, I was unable to squeeze the trigger on the first attempt. On the second try I reached the handle and the ejection worked perfectly."

This is the *pilot's* description of an aircraft accident. You as an accident investigator would immediately ask, "Was this pilot inexperienced?" A quick check of his records indicates that he was not. In fact, he graduated from flying school in early 1943. His total flying time was well over 3000 hours, total jet time over 1600 hours, time in the F-100 over 250 hours, and over 90 hours actual weather time.

People from the instrument school rated him one of the better instrument pilots in the unit.

Why did he lose control? A check of aircraft records gives some clue. The attitude gyro had been written up as unreliable on a recent test hop. T[illegible] K4B control was subsequently removed, ben[illegible]



checked and put back in the airplane. The attitude indicator was also removed, bench checked and put back in the airplane. No difficulties were reported on the next test flight or the air-to-ground mission which followed. The third flight was the one which ended in the accident.

The attitude gyro system malfunctioned, else the t pilot would not have written it up. Obviously, process of removing, bench checking, and reinstalling this equipment is not going to correct the cause of malfunction . . . why then, did it bench check o.k.? A few well-directed questions, and you learn that the present testing equipment doesn't do the job. The instrument technicians apparently were aware of this because they borrowed test equipment from a sister wing which had adequate equipment... and claimed to have done so in this instance.

Maintenance men committed an all too common error when they reinstalled the flight instrument with no corrective action other than a ground check of the instrument and K4B control. Maintenance supervisors were right in there with them for not insisting on a thorough checkout of the entire system and for failing to see that proper test equipment was secured. It stands to reason that every technician isn't going to take the time and effort to run over to another shop to make such tests . . . and for that matter, he shouldn't have to!

Recognizing the existence of a deficiency or potential hazard is the most difficult thing a supervisor is faced with. Perhaps this is because we humans are all too ready to accept existing conditions existing practices as they are. We seldom see a ed to change as long as the job is being accomplished – even tho the machine or procedure doing it is loaded with danger.

If we are to continue making reductions in the accident rate, we must recognize that this is the one most productive area in which we can work. To attack this area, supervisors must get out where the work is being done, they must provide a means for gleaning information from the people who do the work, or from those who face the hazards induced by work improperly done. (Operational Hazard Reporting is one such system.) They must also establish a system which will insure that appropriate corrective action is taken to correct the weaknesses which are uncovered. If these things are done, many of these inconveniences and annoyances will be eliminated along with the accidents they help create.

These are your thoughts as you make your way to the operational factors of this accident. You learn that the night was dark with few references. The flight was on a VFR clearance, yet the flight leader punched thru a patch of clouds. This was a violation . . . and consequently would have been unexpected to a wingman. Because it was unexpected, the captain involved in this accident was not in correct position for penetrating weather, consequently he became separated.

You can't say that this caused the accident, because for all you know, this pilot could have gotten into trouble later . . . say after normal pitch out, when he would have had to transition onto instruments to help fly his way around the traffic pattern. After all the night was dark, the airdrome had few lights surrounding it, and many pilots habitually use the attitude gyro for reference under such circumstances. As an investigator you have strong suspicions that faulty attitude gyros have helped cause some night traffic pattern accidents in the past.

Like most pilots you can't ignore the fact that this captain failed to check all flight instruments available during his attempt to interpret the attitude of his aircraft. Instead, it appears he became rather obsessed with trying to get the aircraft to respond to the faulty gyro . . . and forgot about his other instruments. You realize that this is an entirely human reaction. You also realize that partial panel flight in a century series bird is no piece of cake, ... still, other pilots have extracted themselves from situations as bleak as this . . . .

So you nail the poor guy with pilot factor for failing to cross-check all available flight references and then make a mental note to have increased emphasis placed on partial panel work in the simulator training program. ●

TAC TIPS

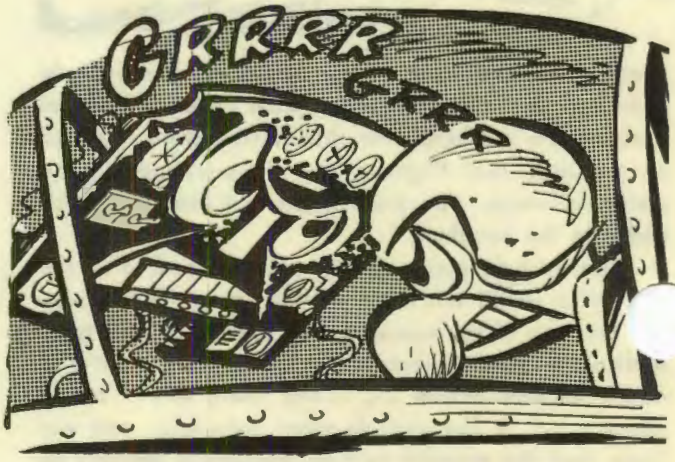
SHAKY ENGINE. The crew of a twin engine jet noticed the left engine vibrate while climbing through 10,000 feet. The vibration, which was fairly strong, only lasted about five seconds, then everything apparently returned to normal. About an hour later, at 30,000 feet, the same engine again vibrated. This time it only lasted a second or so and was a milder vibration. Instruments were AOK . . . . so the crew pressed on. Later, when power was reduced on the base leg of a normal landing pattern, the vibration returned both strong and continuous. The pilot shut down the sick mill and made a successful single engine approach and landing. A tear down disclosed extensive compressor damage, due possibly to a CMB failure.

OHR STATUS BOARD. We visited a base recently where an OHR had been received and referred to the interested staff section for action and then forgotten. Action may have been completed eventually, but... this base could use a system for monitoring their OHR program, a system which would insure positive, fast corrective action. What do you do at your base?

SLOW LEAK. The small Webb retainer strap on the oxygen hose connector is held in place by a screw which goes all the way through the connector. A pilot noticed his strap was missing, but didn't realize the missing screw left a nice hole in his oxygen line. Fortunately, the PE man discovered it before the pilot made a high flight of long duration.

—166th TFS, Pilots' Home Companion

SAFETY SURVEY. The safety survey aggressively applies the principle of before-the-fact accident prevention by revealing discrepancies that help to induce accidents. Once revealed, these discrepancies can be easily corrected. However, the survey is not complete until all the discrepancies revealed have been corrected and follow-up checks have been made to insure that the corrective action is adequate and continuing.



F-101B HEADWORK. Shortly after takeoff while on the gauges in weather, the pilot of an F-101B found the instrument panel in his lap. He maintained a climb attitude by referring to the radar horizon and by having the RO monitor airspeed in the aft cockpit. After gaining altitude the pilot used both hands and released the mechanical stops that lock the panel down. He then pushed it up with his head, locking it in place. The instrument panel was checked for security prior to takeoff but the pilot apparently wasn't familiar with the locks. All pilots flying F-101B's should raise and lower this panel to see how the thing works. The linkage must be inspected before strapping in . . . and safety pins can be installed in one of the linkages to prevent recurrence.

CAMERA CAPER. If you take this tip from the National Safety Council, your word will never be disputed when you come across faulty equipment, a bad place in a runway, or similar hazards. The recommend that you get a camera and make a pictu

of the hazard. This arms you with factual evidence. The camera has a memory that cannot be disputed. Show a few pictures of your hot spots to the proper authorities and you will get action.

AIRCRAFT WHEEL HANDLING. Surveys conducted during overhaul of aircraft wheels reveal that approximately 12% of wheel condemnation is attributed to cracks, 48% *DUE TO IMPROPER HANDLING* and 40% due to corrosion. Proper wheel handling starts on the flight line with the removal of a wheel from an aircraft. The wheel to be installed then becomes doubly important because it must be in serviceable condition for use and then upon removal be able to be reused again.

Proper wheel handling during a tire change on an aircraft is just another one of those little insignificant items that go hand and hand with accident prevention. Reduce the little things that cause aircraft accidents and more money and engineering effort can be expended on the more complicated causes.

–Nellis F/S

PITOT SYSTEM ICING – F-100. Both aircraft in a flight of two F-100's lost airspeed indications during a weather penetration. Full defrost heat did not open the pitot system until the aircraft descended below the freezing level. All correct operating procedures were followed. Another flight of F-100's that penetrated immediately following this flight had similar problems. Twenty-twenty hindsight indicates that engagement of the windshield anti-icing or defrosting system prior to penetration would have increased the temperature in the mixing chamber and probably would have given positive pitot system anti-icing. With the winter months comes lower freezing levels and the increased possibility of icing conditions. From all indications, F-100 pilots will have to anticipate icing during penetrations and use the defrosting system a few minutes before starting down the slide.

HOT SPOT. Recently, while a duffle bag was being transferred from an outbound baggage dolly to a checked baggage bin, a foreign-make cigaret lighter in the bag ignited and set fire to the bag. Investigators found that several other bags contained similar lighters. Fortunately this happened on the ground and the only loss was to the bag. What do you carry in your luggage?

CONFUSION. This tip came by way of an OHR. Seems that some confusion is generated in traffic and GCA patterns because of transmission procedures and call sign similarities. Many of our pilots and traffic controllers press the mike button and start talking at the same time, consequently part of the first word or even a word or two is lost from the transmission. For example DEVON 21 and LEON 21 might both be received as ON 21 or "BLAH" 21. If they're both in traffic at the same time, it's anyone's good guess who the message is intended for. Solution: Key the mike, wait, then talk. In addition, it helps to select call signs that are completely dissimilar.

THANKS FOR YOUR OHR. Out at George AFB they've initiated a good system to help foster interest in the OHR program. A letter is forwarded to the originator of each OHR thanking him for his contribution, telling him that action is being taken, and promising to tell him about the completed action.

T-BIRD DOORS. T-33 engine access doors come off in flight frequently enough to warrant special attention. This is a killer item, since the doors can do horrendous damage to the elevator, rudder, and push-pull rods leading to these controls. Defective fasteners or incomplete maintenance coupled with

inadequate preflight inspections precede each door separation. This then, is the clue to preventing such accidents. But it takes a thorough inspection to catch a poorly fastened door or faulty fastener. Checking Dzus fasteners for alignment is not enough. Don't just *think* the doors are secure--make definitely sure that they are secure...especially during cross-country flights.

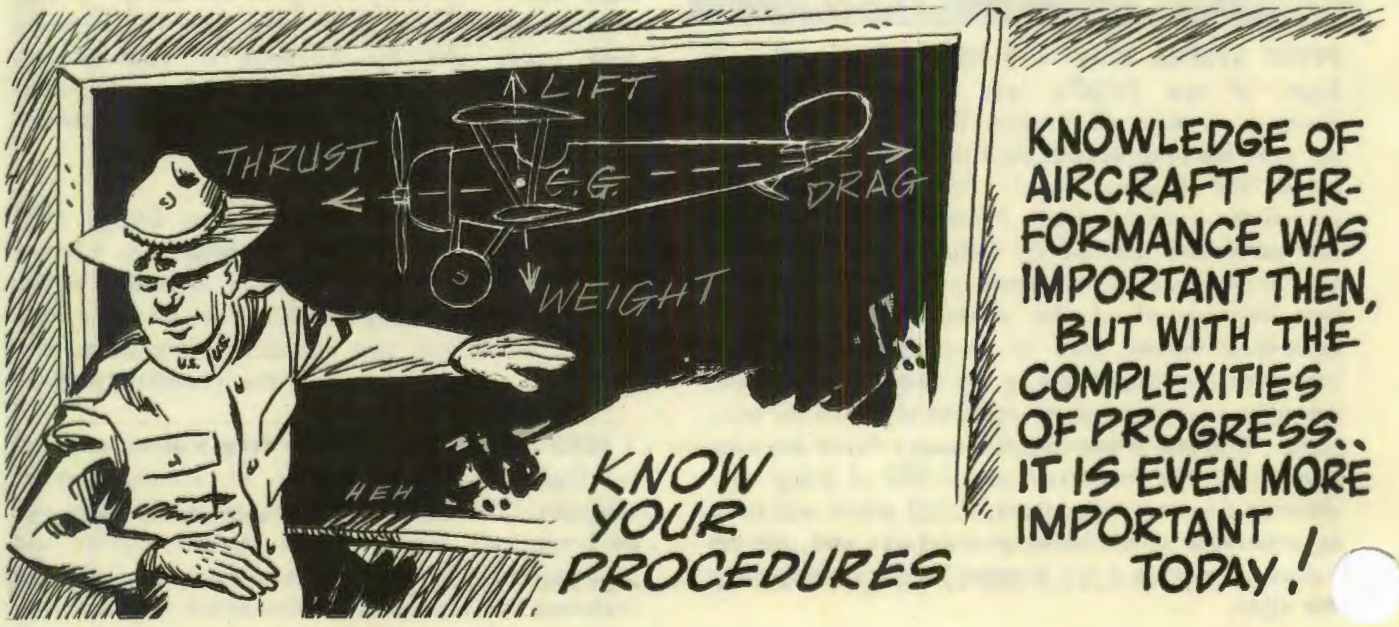
CAPS OFF. A T-bird pilot carefully aligned the arrows and screwed the left tip tank cap on as tight as it would go. It didn't look quite right, but there was a used rubber gasket laying on the ground under the tank and he thought that perhaps the new gasket caused the cap to sit a little high. He completed the preflight and then as an after-thought went back for another look-see at the left tip cap. He inserted his screwdriver under the edge of the cap and easily pried it right off! The locking bar was not positioned between the retaining lugs and was free to rotate at random. When this happens, it is possible to get a partial lock. Usually, however, the cap won't lock at all, yet gives all appearances of being locked. We recommend that pilots and maintenance men look at the bottom of the cap to insure the locking bar is between the retaining lugs before installing the cap.

HOT SPOT. Reports are starting to trickle in from the field concerning the fire hazard created by closed canopies concentrating the sun's rays on combustible objects. One base reported eighteen instrument flying hoods that had been charred in this manner. Some of the burned spots were quite large which indicated that perhaps quite a fire had been going at one time. All eighteen hoods were labeled with the required part number and were supposedly of a fire resistant material. This could be the reason that the aircraft didn't catch fire and burn up, and points out that commanders should take a dim view of using locally manufactured cloth instrument flying hoods in their aircraft.

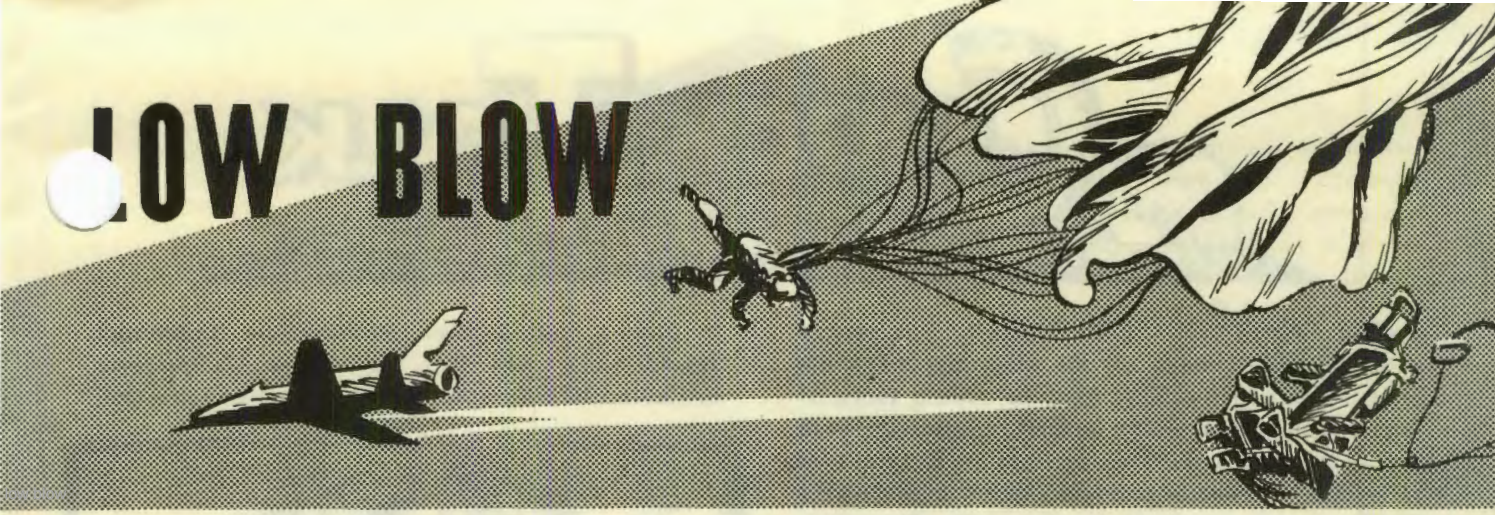
–5th AF Flight Safety News

A WORD TO THE WISE. We heard a good one the other day that provides some thought for fly-safe fanatics. How do you set a rule to govern unusual circumstances? The unlucky young troop who received a thumbs down had been flying an F-100D through the mark for the required period of time and was making a normal (?) landing when a tire blew out. Friction between the aircraft and the runway set the brake and fragments of blown tire on fire. Our intrepid birdman stopcocked the throttle, which was a natural reaction, after the aircraft had stopped rolling. Imagine the pilot's amazement when the bird burned to the ground before the fire trucks arrived on the scene. The cause of such a large fire was a quantity of fuel which was discharged from the engine when the throttle was stopcocked. As far as we're concerned the pilot didn't do a thing wrong except be in the wrong place at the wrong time. Perhaps it might be wise to leave the engine running until the fire trucks arrive on the scene. Of course, this might only apply when the bird has a blown tire. ●

–5th AF Flight Safety News



LOW BLOW



F-100 FLIGHT MANUALS CONTAIN complete instructions on ejection procedures and the following emergency ejection altitudes, based on use of the BA-15 or B-18 parachute in level flight are listed:

- Zero-delay lanyard connected--100 feet above the terrain.
- Zero-delay lanyard not connected--200 feet above the terrain.

In recent months many people have questioned the reliability of these figures. For example, during an emergency ejection at 800 feet the main chute appeared to be streaming and did not blossom until about 25 feet above the ground.

It should be pointed out that these emergency minimum altitudes were determined through extensive flight tests and are based on distance above terrain on initiation of seat ejection (i.e., time seat is fired). They do not provide any safety factor for equipment malfunction, delays in separating from the seat, etc. These figures are quoted only to show the minimum desirable ejection altitude in the event of a take-off emergency. They must not be used as the basis for delaying ejection when above 2000 feet. Accident statistics show a progressive decrease in successful ejections as altitude decreases below 2000 feet.

One of the important factors affecting minimum ejection altitude is the function of the zero-second lanyard. The accompanying chart shows the reported availability and use of the zero-second lanyard in 78 out of 84 total ejections. As the chart indicates, the zero-second lanyard was a decisive factor in the successful outcome of ejections at low altitude. Use of this equipment was a probable factor in six successful cases, while failure to use the lanyard contributed to one fatality. ●

REPORTED AVAILABILITY AND USE OF THE ZERO SECOND LANYARD

Altitude	Connected		Not Connected		Total
	Successful	Unsuccessful	Successful	Unsuccessful	
0-999	8	3	2	1	14
(0-499)	(3)	(2)	(1)	(1)	(7)
(500-999)	(5)	(1)	(1)	(0)	(7)
1,000-1,999	4	0	0	0	4
2,000-2,999	2	0	3	2	7
3,000-4,999	4	0	4	0	8
5,000-9,999	6	0	10	0	16
10,000-19,999	2	0	13	0	15
20,000-Up	1	0	5	3	9
TOTAL	27[2]	3[1]	37	6[3]	73

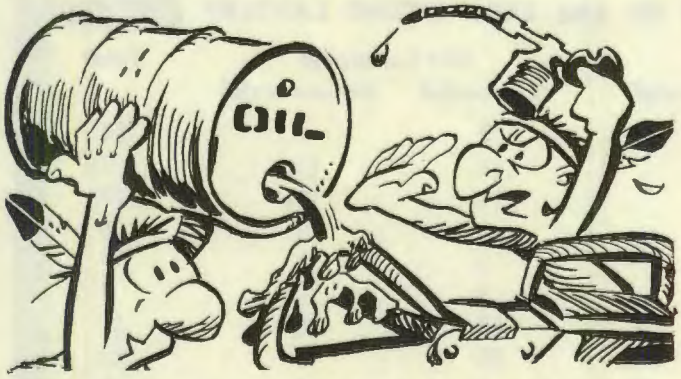
[1]Extremely low altitude prevented completion of ejection sequence—2 cases. Lap belt failed due to design deficiency—1 case.

[2]In 6 cases evidence indicated that utilization of zero second lanyard was a factor in prevention of fatality (altitude at time ejection: 0-499—3 cases; 500-999—3 cases).

[3]Failure to connect zero second lanyard may have been a factor in one fatality.

CHOCK TALK

F-100C CANOPY JETTISON SYSTEM. The canopy of an F-100C blasted off the other day when the pilot pulled negative G's. After he made a successful, tho somewhat drafty landing, specialists gave the bird a going over. They checked the force needed to unlatch the handles and found that it exceeded the 30-35 pounds specified by the T.O. Obviously, negative G's couldn't shake up that much energy so they checked further and found that both handgrips could be moved out of the down-and-locked position while the ground safety pin was in place. After the pin was removed, it took less than eight pounds of pull to raise them the rest of the way . . . . Negative G's could induce enough energy to overcome this, so the specialists concluded that someone had caught his flight gear on one of the handles while the pin was in and managed to unlock one handle. Later, this pilot took the bird, but did not check the alignment marks (they are difficult to see) and flew blissfully around until he popped the handle out with negative G's. The safety pin wasn't doing its job, so the specialists checked twelve other birds to see if they were the same way. They were. In addition, all of them required more than 35 pounds pull to unlatch. This is excessive and was because the rollers which are engaged by the down lock latches



were stiff or completely frozen. Lubrication instructions in T.O. 1F-100C-2-8 didn't include these rollers, which explains, why they were being missed. Also, several of the seats did not have the alignment marks painted, so there was no way to properly check them for safety. It will be some time before the basic problems are solved . . . until then, F-100C mechanics and pilots should make a definite preflight check of the armrests to insure that they are down and locked. Maintenance supervisors should make sure that the rollers are properly lubricated to keep operating forces within tolerance.

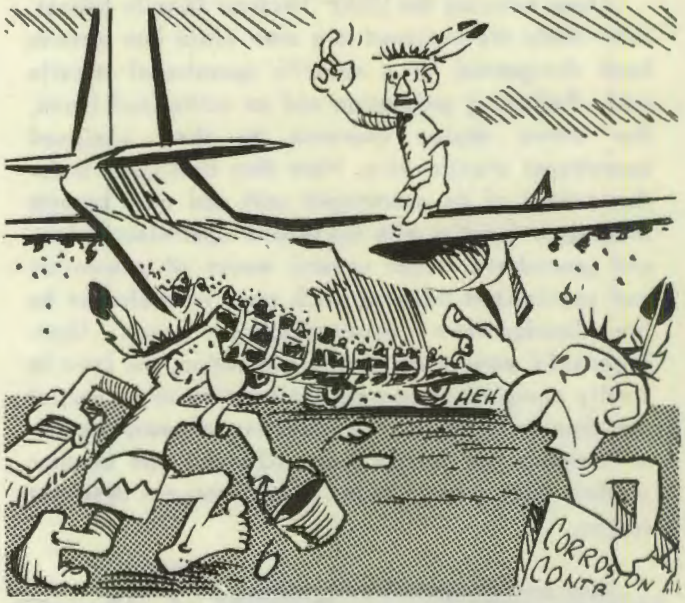
T-33 TRAVEL PODS. Travel pods are still falling off of T-33's at regular and inconvenient intervals. Therefore, T.O. 1T-33A-491, dated 2 September 1960, was published, requiring the installation of new improved forward attaching brackets on all existing pods. Stock numbers for these brackets a 1ALC-1560-787-6758 and . . . . 59. In addition, this T.O. reworks the aircraft JATO latching mechanism to make the pod non-jettisonable. This is done by drilling a .07 inch hole with a number 70 drill through the lower mid-section of the protruding trigger, as close as possible to plate, part number 178165-2. A 1/16 inch cotter pin through this hole keeps the manual release from operating. Both pilots and ground crews should make sure that this pin is in properly. If you do not know how it should be installed, ask the engineering officer... don't be one of the T-bird travel pod bombers!

RF-101 MAINTENANCE PROGRAMS. Once again high priority work is disrupting the prime AMA's plans and scheduling in the RF-101 maintenance program. Although no one has been able to successfully predict these interruptions, there will probably be a few more before the RF-101 program can be completed. For this reason, commanders and maintenance supervisors should plan accordingly and take a long hard look at all maintenance and modification they intend to delay for scheduling into the depot modification program. Frankly, if the depot fleet wide work requirements are increased very muc

more, the completion of these modifications is apt to coincide with phase out! On the other hand, either the "C" rating or the on-base workload will have to suffer if these completion dates are to be improved. At present it would appear that the best course of action would be for the base to assume as much of the TOC and high interval inspection workload as possible within present resources. This will help keep the base self-sufficient and aid in standardizing aircraft configuration.

BDU-8/B TRAINING PARACHUTE. The BDU-8/B Training Parachute, USAF Drawing 58D6362-1 Modified, has been assigned Federal Stock Number 1670-842-2126. On all previous shipments it was identified as NOCM 1115-752-8476A. You should change this number to read 1670-842-2126. However, be careful and don't get it mixed up with the MC-992 chute which is not to be used as a training chute. The MC-992 is identified as NOCM 1115-752-8476 and does *not* have a blue development bag.

CONTAMINATION MEANS EXTRA WORK. Many of our aircraft seem to have more than their share of hydraulic systems trouble. At first glance, you'd think the airplane makers were to blame, that they didn't make the pumps, valves and actuators strong enough to last. Sometimes this is true, but more often than not, the trouble can be traced to dirty hydraulic fluid. On the other hand, the AMA has raised the specs on the fluid until it is clean enough to compete with those washes you see 'em bragging about on TV. In addition, the engineers have developed new and better filters which are supposed to keep the fluid that way. Then how come the dirt? Where does the fluid get contaminated? To be blunt, most of it comes from you people who service and maintain the hydraulic systems. That's correct; you are making a lot of work for yourself. You let so much dirt get into the system, the filters won't stop it all. Get rid of this contamination, and you'll have less work to do, less parts to fix. It is as simple as that. Strangely enough, it doesn't take much effort to stop the contamination. All you need to do is take reasonable care while doing all work, servicing, and inspection of both the aircraft components and the servicing and testing equipment. You have to be particularly careful with the servicing and testing equipment, because if you don't change the filters on schedule or if you leave the hoses uncapped--even briefly--or cap them with a dirty cap, you will end up with contaminated fluid in these units. When this happens, they'll spread the dirt to every doggone airplane on the line. This business of capping lines with clean caps also applies to the bird.--It only takes a few extra seconds, and is well worth it, even though you know the lines will be broken a short time. Another way dirt gets into these systems is while you are pouring hydraulic fluid directly into a reservoir or servicing unit. You have to be very careful if you hope to keep it out. Many of the T.O.'s that tell how to take care of hydraulic systems and test units have been rewritten to tell you when to change filters. They also give the latest dope on keeping dirt out. Your time will be well spent if you read 'em over again to make certain that you are doing everything you can.



C-123B IRAN. Hq MAAMA has established a tentative IRAN program for C-123B aircraft during FY62. This program will include corrosion control treatment on the bottom of the fuselage and in hydraulic and fuel lines routed through the wing, nacelles, and fuselage. Sixty aircraft are programmed with a flow time of 21 days each. Work is to be accomplished by Fairchild Aircraft and Missile Division, St Augustine, Florida.

C-130 OXYGEN SYSTEM MODIFICATION. To reduce the risk of oxygen regulator fires in the C-130, Lockheed has published Engineering Change Proposal LH C-130-720. This ECP moves the reducer valves to a point just forward of the storage bottles. At present, the reducer valves are in the walk-around bottle recharger system. This change cuts the pressure in the system to 450 psi, but still retains an 1800 psi capacity in the storage bottles themselves. ●

AIR MUNITIONS

MISSILE TRAINING COUNTDOWN. A previous article discussed the formal training received by missilemen. This training accounted for one year of each man's career. This month, the missilemen's future career will be discussed.

Upon entering the USAF Tactical Missile School, individuals are assigned to a crew which has already been designated for a specific operational missile unit. Following graduation and an authorized leave, the crews deploy overseas to their assigned operational missile wing. Here they first come under the control of an operational unit and must become thoroughly familiar with the theater operational plans and procedures. After several weeks of orientation and specialized training, each crew is evaluated by the headquarters standardization board. Upon successful completion of this evaluation, the crew is finally assigned an operational function in support of the theater mission. The objective of many months of training has finally been achieved and another combat ready crew is added to our overseas deterrent forces.

MN-1A DISPENSER. When the MN-1A is installed on either the Type VII or Type VIII pylon, the actuating pylon pin, P/N 58C45117, must be installed in the 1/2-inch threaded hole located on top of the dispenser. The pin actuates a micro switch plunger in the pylon, which re-routes the release signal in the aircraft from the pylon to the dispenser. This is how the pilot is able to release the miniature bombs. To keep the actuating pylon pin from vibrating loose and damaging the micro switch, a tooth lock washer, P/N AN936B816, should be installed under the head of the pin. Proper installation of the pin can help prevent an inadvertent release of the dispenser.

MF-1 TRAILER. SAAMA has found sand and otl foreign stuff in the hydraulic systems of severa. MF-1 trailers. SAAMA repairmen had to replace all of the vital parts in these trailers in order to make their hydraulic systems serviceable. This was expensive. Please help cut repair cost. Add only clean fluid to the reservoir and keep the breather cap on the filler tube. You pay taxes too!

Errors in maintenance and servicing can be reduced, if not prevented, when proper knowledge, practices and standards are used. Deviation from established procedures, failure to use the written word and a lack of appreciation for standards in aircraft maintenance are conditions that prevail and need to be corrected.

DOCUMENT RECEIPTS FOR PUBLICATIONS. If you are receiving Special Weapons publications, please re-read paragraph 8d(1) of AFR 11-14, which states: "If sender requires a receipt, complete the receipt portion of the *top copy* of AF Form 310 sent with the documents and return to sender." You should comply with this paragraph. Incidentally, do not mark over or delete the control number assigned by SAAMA/DSW. SAAMA needs this number in ord to maintain proper control. ●

TAC TALLY

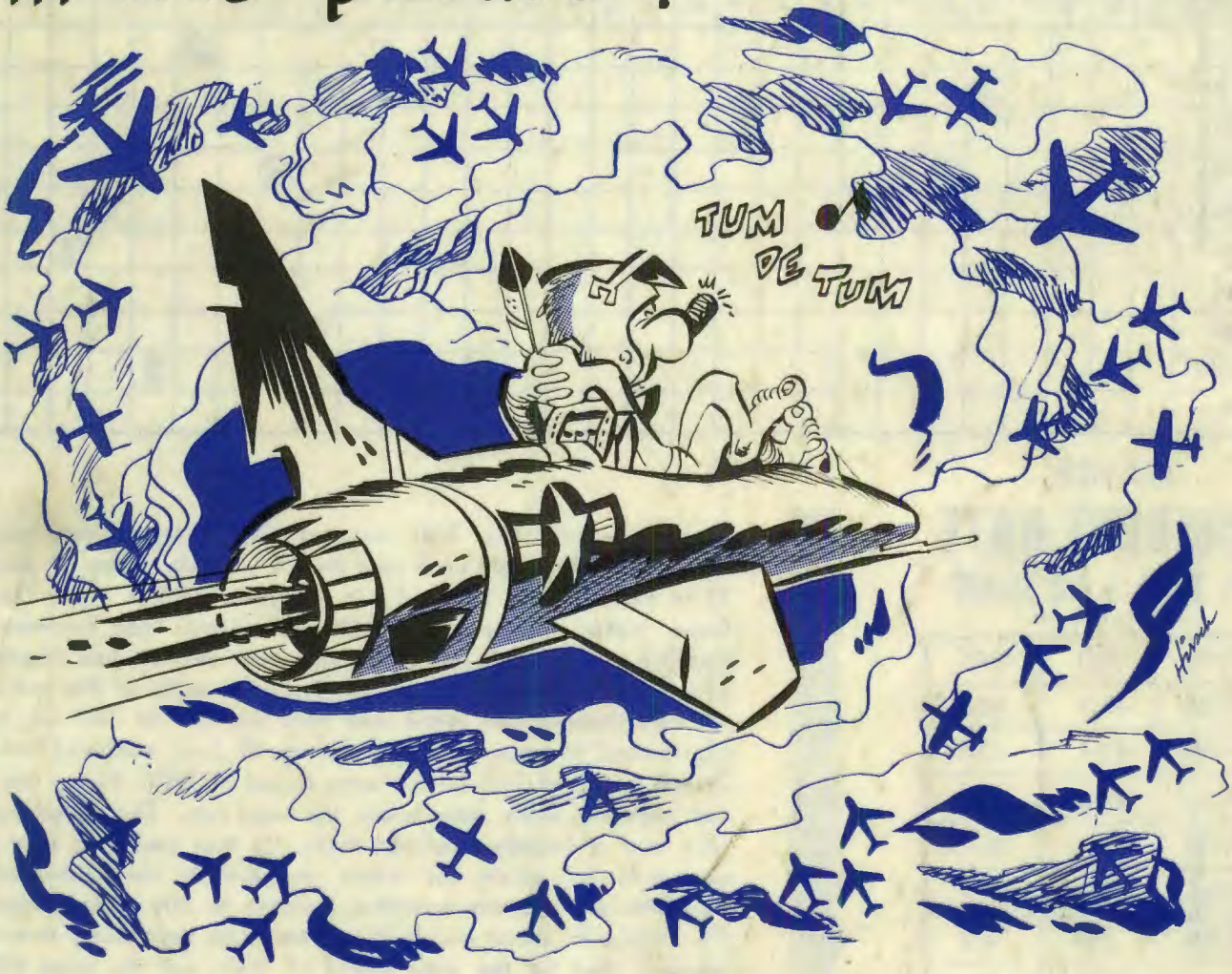
JUNE MAJ. ACDTS.	4510 CCTW	433 TCW	464 TCW	31 TFW	479 TFW	140 TFW	27 TFW	474 TFW	4505 ARW	127 TRW	401 TFW	363 TRW	131 TFW	4520 CCTW	463 TCW	117 TRW	102 TFW	354 TFW	4411 CCTG	64 TCW	113 TFW	4520CCTW	4500 ABW	4 TFW	512 TCW	107 TFW	122 TFW	440 TCW	
F-105																								2					
F-104					3																								
F-101																													
F-100						2	1															2							
F-86																										1			
F-84																											1		
B-66																													
T-33																					1		1						
CONV.																									1				
EL.																													

MAJOR ACCIDENT RATE 1 JAN. - 30 JUNE

TYPE	1961	1960
F-105	18.3	60.0
F-104	83.1	51.6
RF-101	13.0	0
F-100	16.1	25.9
F-84	61.0	38.5
T-33	5.1	4.5
B-66	34.6	0
KB-50	10.8	5.6
C-130	9.8	0
C-123	6.7	0
ALL	14.9	13.1

What happened? The TAC major aircraft accident rate has decreased right nicely each year for the past few years. It was 25 in 1957, 16.9 in 1958, 16.2 in 1959, and 14.2 in 1960. The future looked real rosy for awhile this year. Then airplanes literally began to fall out of the sky. Now the rate has surged upward and stands at 14.9 for the first six months of this year. We recapitulated and found that with the rate of 14.9 we've experienced 45 major accidents through 30 June, compared with 39 and a rate of 13.1 for the same period of 1960. Flying time and exposure index were nearly the same too. The disturbing fact, and a proponent for red faces, is that personnel errors accounted for nearly the entire increase in the number of accidents and the corresponding increase in rate. There were five more pilot factor accidents and one more supervisory factor accident than for the same period of 1960, and the same old reasons still prevail--poor flight planning, poor judgment, improper techniques, and so on. It's not too late to make 1961 the best year yet, but it will take some tall doing and some really heads-up operating. Can we do it? Only one accident occurred in July up until press time and if we continue to hold the line like that, we can. But remember, it will take *YOUR* cooperation.

How many Aircraft do You see in this picture ?



Solve this on EVERY FLIGHT and avoid MID-AIR COLLISIONS