

Interceptor



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SQUADRON
ADC



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spotlight

To be a man is to feel that by carrying one stone you can contribute to the building of the world.

Antoine de Saint-Exupery
(Theme of Expo 67)

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OUR COVER

We salute the 456th Fighter Interceptor Squadron. Their motto "Exertus Mostus Fightus Bestus" reflects the positive attitude of everyone in the squadron.

memo

from the **CHIEF OF SAFETY**

DECISION

Have you ever thought about jumping out of an airplane? Our aircrew members constantly live with the unique situation where, within the next few moments, weeks, months, years, or possibly never, they suddenly become faced with the decision to separate from their airplane while in flight. Many have faced this situation in the past — some successfully, others unsuccessfully.

None of us can factually state what, precisely, our personal reactions will be in any specific instant prior to or during a life or death emergency. We can only imagine how we think we would react.

We are well-trained in the operation of our aircraft systems. We practice normal and emergency procedures routinely. But we do not practice ejection from a sick airplane. Of course, we go through the motions in our ground simulator training programs, but I think all too little emphasis is generally placed on the whole subject. It's easy to step out of the simulator when all else fails; we haven't lost an aircrew here yet.

Subject to human weaknesses as we all are, it almost becomes part of our learned reactions to become lulled into a false sense of security, as long as there is an intact, comfortable cockpit surrounding us.

The cold, brutal, hostile world is just outside the canopy, and it takes a little inner soul-searching to roust the physical being out of this familiar environment. The aircraft may be hurtling towards terra firma at fantastic rates of speed, sans engine or complete attitude controls, but maybe we can make it. Again, the cockpit is generally completely comfortable right up to impact. Or, the other alternative, and the one that is the real, insidious killer, is the situation where the aircrew waits too long to make the decision to eject.

Every aircraft in our inventory is bound for the bone-yard eventually. It may be 90 days or years. The aircrew's consideration of saving this machine for its destiny is most commendable — when the save is successful. To lose your life for the shaky sake of an obsolete manufactured machine is a pathetic waste of vitally important human resources.

There are, of course, the recorded instances where the decision to stay with the airplane was dictated by sheer heroism on the part of the aircrew to avoid a populated area, where no other alternative was available. To these men we cannot offer enough praise.

The man who states that he never has been nor ever will be interested in some sort of medal or commendation for his performance of duty is, in my opinion, not stating the truth. Everyone desires praise and recognition. However, to risk your life, and the lives of others (if others are with you), for the sake of a medal or award alone, is, in my mind, a rash display of bad judgment.

The important thing here is the very discussion of the subject — to constantly re-familiarize our thinking with the importance of the time involved. We become lulled into security in another sense. Our century series fighters, for example, are extremely fine performers as long as the engine is providing its enormous amounts of thrust. We unconsciously associate its glide performance in our minds to what daily flying experience has shown it will do — with engine running at least at idle. But when the engine suddenly quits entirely, these tremendous performers become nothing but rapidly sinking masses of metal.

This is the deception that in many instances does not allow the aircrew time to make more than one decision. The wrong one generally kills the occupants. It's virtually impossible to set a modern fighter down minus power on anything but a well-prepared, long, smooth, clearly visible surface and WALK away from it, so why settle for anything less?

Accomplish your own soul searching, run your own practice sessions in your own mind and/or with your RIO, be prepared so that if and when the time comes for your decision to eject or remain with your aircraft, you will make the decision and successfully carry it out without delay.



COL. OLIVER G. CELLINI

HOT LINE



WEAPONS CONTROLLERS. "Now is the time for all good men to come to the aid of their party . . . etc." You can come to the aid of yours and assist yourself and the Weapons Controller Study Panel, ADC Headquarters, who are attempting with great vigor and high level direction to help you. We enjoin you to submit, for publication in the magazine, your ideas, recommendations, articles, etc., that would contribute to improving the 17XX career field. Mail direct to Editor, INTERCEPTOR Magazine, Box 46, Ent AFB CO 80912.

CIGARETTE LIGHTERS. In the past people have been warned regarding a type of cigarette lighter that had proven particularly dangerous when carried aloft and used in flight. This was a see-through reservoir-type lighter, but now another kind has been brought to our attention which is equally dangerous on the ground or in the air, but particularly so in the air.

This lighter that has appeared on the market is one which burns with an almost invisible flame and is lighted automatically by just removing its cap. It is fueled by methyl alcohol, and sold rather extensively by mail order houses.

The dangers inherent in this lighter are obvious. Imagine carrying one in a pocket and having the cap come off accidentally . . . and the pocket belonging to either a pilot or passenger in flight. Or dropping the lighter on the cockpit or cabin floor, knocking the cap off and having it roll — lighted — into an almost inaccessible place! !

SPREAD THE WORD. In our visits to the field we have been questioned by the maintenance personnel as to where their copies of the INTERCEPTOR Magazine are. Each of our copies is supposed to be read by 10 people. Please pass on the copies to other people when you finish. We have some information pointed at the wrench benders which we hope they have a chance to read. So please help us out and pass it on.

ORANGE FLYING SUITS. As part of the Cost Reduction Program, AFLC is no longer buying Orange K-2B Flying Suits. This action was based on a study of accident records at Norton, which disclosed no instances where the orange suit aided in a rescue. It looks as though we've lost this round, but if we have any cases in the future where the orange suit aids a search and rescue attempt, or the green one hinders one, let's get it in the report. Life Support Officers can help by bringing this to the attention of the aircrews and commanders. If we can show some justification for our orange pajamas, maybe the case can be reopened.

NONSKID PAINT. One unit has used a nonskid paint to surface all walk and step areas (i.e., tail gates, steps, floors, and bumper steps) of all vehicles used for the transportation of test equipment and personnel to preclude injury to personnel and damage to equipment due to slipping on slick areas. The following kit was used: 5610—641-0427 MIL-W-5044A, Kit, DuraGrip Coating, Black or Light Grey.

PROTECTIVE HELMETS for the two-wheeled vehicle driver (and passengers) are in the spotlight again. It seems that the market is flooded with cheap versions that don't provide the desired protection. In one case the chin strap pulled loose and allowed the helmet to come off during an accident. The operator died from head injuries. You might say the few dollars saved by buying an inferior helmet cost him his life.

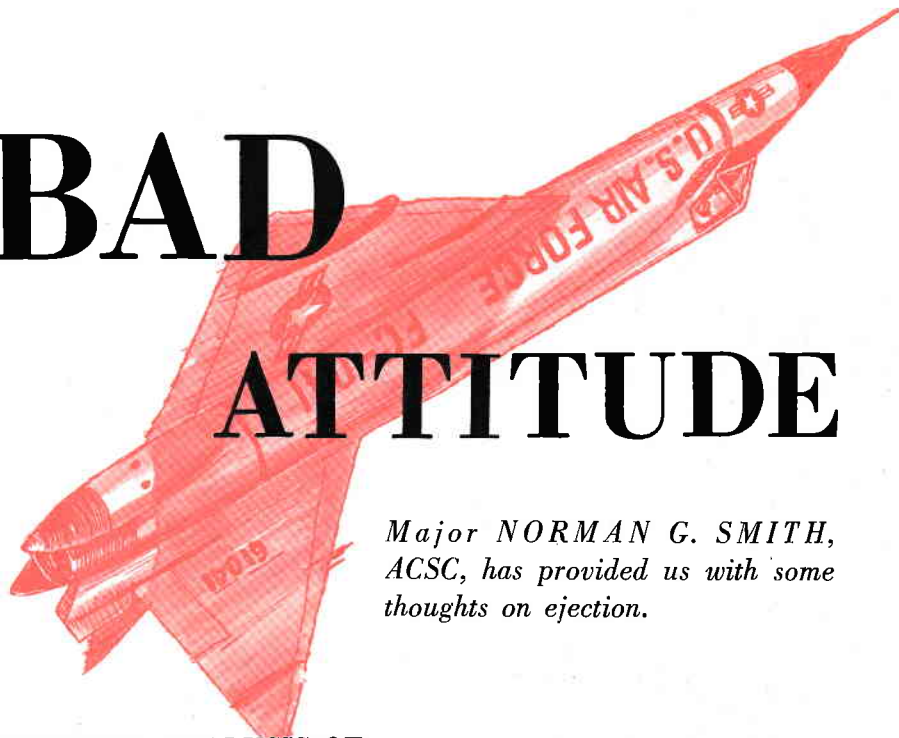
OLD PROBLEM. Since we re-installed the D-ring on our parachute, we have an age old problem with us again. People are inadvertently hooking the parachute chest strap ejector snap over the D-ring. Crewmembers should be cautious when they connect the chest strap and make sure the ejector snap lever is in the full closed position.

What is a "bad attitude"? . . . for ejection, that is. If a pilot had to eject in a situation where attitude significantly affected the outcome, how would he know if he were in a bad attitude or an acceptable attitude? If a "good" attitude is acceptable and a "bad" attitude is unacceptable, how does a pilot tell where the "good" stops and the "bad" begins? Just what effect does attitude have on ejection success? The significance and relationship are widely misunderstood. The following discussion may surprise you.

"Bad attitudes" when associated with ejection situations are usually referred to as *Adverse Attitudes*. At any rate even the uninformed get the idea that an adverse attitude at the time of ejection is not desirable and should be avoided. This falls nicely in line with such statements as "Motherhood is good" and "With total electrical failure during night weather, ejection is recommended." But a fighter pilot about to eject doesn't always enjoy a situation with nice clear-cut choices. Nor can he enjoy the luxury of having everything just the way he wants them prior to ejection. Many situations are a combination of adverse conditions in which the pilot may have the choice of making one of these conditions "less adverse" but only at the expense of making some other condition "more adverse". The choice is often subtle and complex, but it can mean the difference between success or violent ground impact.

Since attitude might be traded with some other flight condition just prior to ejection, it might be thought of as a "negotiable" condition. The problem then is . . . with what can you negotiate and how much? In our sophisticated, computerized, modern Air Force this is sometimes called a *sensitivity analysis* of attitude during ejection. Whatever we call it, it makes sense. Let's do it.

BAD ATTITUDE



Major NORMAN G. SMITH, ACSC, has provided us with some thoughts on ejection.

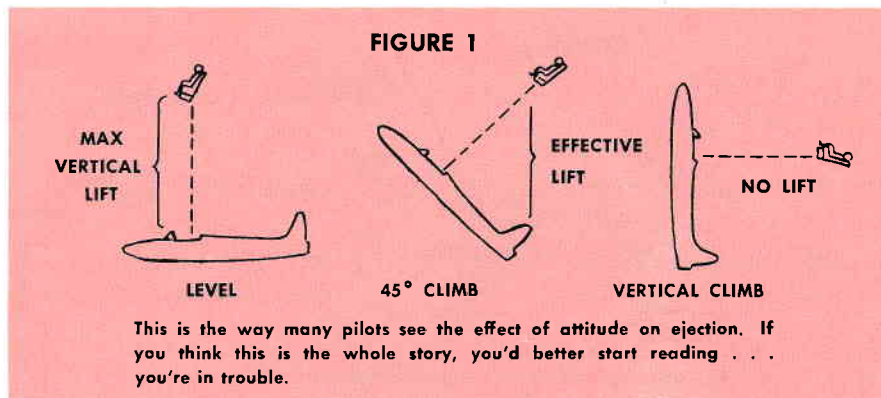
SENSITIVITY ANALYSIS OF ADVERSE ATTITUDE

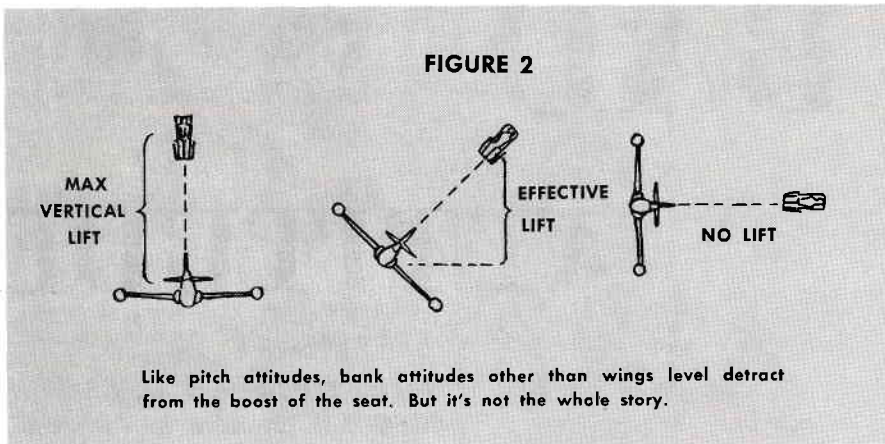
If we are to evaluate the effect of adverse attitudes in an ejection situation, we must compare attitude with some other flight condition which is directly related. We can easily do this with an example of the Zoom Maneuver. If we were to eject from an aircraft flying straight and level, we would realize the maximum benefit from the boost of the ejection seat because the trajectory would be vertical. But if we were to pull the aircraft into a 45 degree climb and then eject, the trajectory of the seat would not be vertical and consequently we would not realize the full benefit from the seat boost. Now if we had pulled the aircraft into a vertical climb, the seat would have fired

horizontally and we would realize *no* benefit from the seat boost other than the fact that it removed us from the aircraft. These three situations are shown in Figure 1.

Two things are significant here. One is that it makes no difference whether you consider pitch attitude or bank attitude or a combination of both, the effect on seat boost is the same and can be precisely calculated by simple trigonometry. We will show this later in our analysis. Figure 2 shows that bank attitudes have the same effect on seat boost as do pitch attitudes.

The second and most important factor in adverse attitudes is the pilot's understanding and appreciation of the role that attitude plays in conjunction with other flight conditions. For ex-





ample, one of the most common and dangerous misconceptions about the Zoom Maneuver is the concern for the attitude of the aircraft as a result of the Zoom (see Figure 1). "Common sense" says that the seat will be less effective and experience says that not much "altitude" will be gained in a century series aircraft if there is no power and little airspeed to begin with. This misguided rationale concludes that the benefits of the seat are greater than the "altitude" gained. This is usually immediately backed up with a couple of real life accidents where pilots ejected in nose high attitudes and didn't make it. One of the more famous is the F-102 on takeoff where the flashlight jammed in the stick well. In this instance the aircraft had little or no vertical velocity at ejection. It is such erroneous analyses as this that we hope to dispel.

FLIGHT PATH AND VERTICAL LIFT

Now we have reached a point where we can reasonably compare attitude effect on ejection with another and extremely important factor . . . flight path. The key importance of flight path is the vertical component. By this, of course, we mean that any flight can always be broken down into the horizontal and vertical components. It is the vertical component we wish to examine. Figure 3 shows variations of these components.

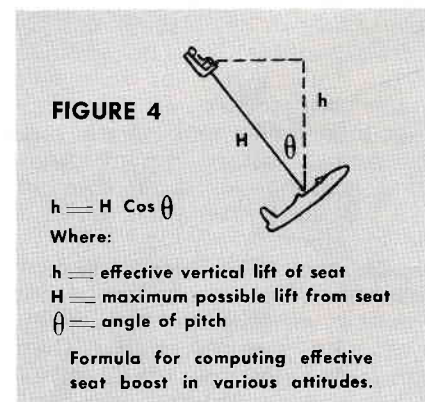
The vertical component is vital because it is the same factor that we examine in the seat boost. We want to lift the pilot vertically to provide enough time for the parachute to blossom. Since it is vertical lift we are looking for, it doesn't make any difference where it comes from as long as we can get the most lift from the situation.

Now we have a common

measurement, vertical lift, by which we can compare adverse attitude versus flight path. This is a reasonable comparison because in a *flying* aircraft, pitch attitudes directly correlate to flight path. To get an exact sensitivity comparison we must look at some simple arithmetic and trigonometry.

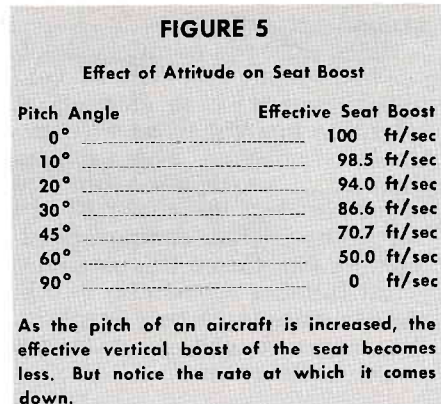
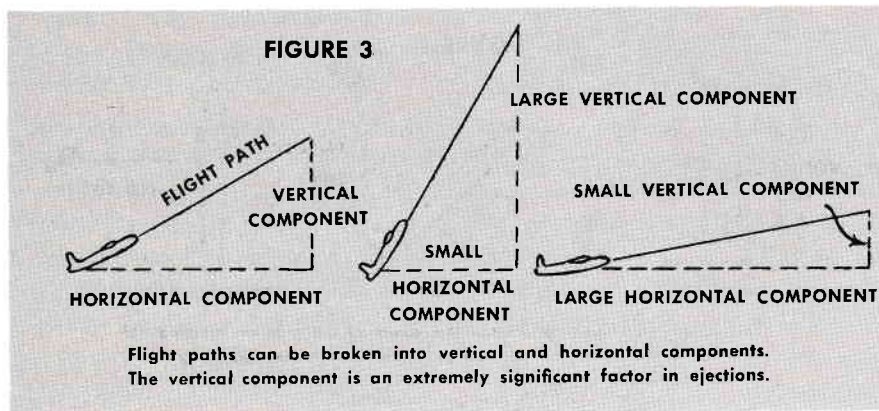
ATTITUDE EFFECT ON SEAT VERTICAL LIFT.

In the ideal (level) attitude, of course, we get maximum vertical lift from the seat boost. Let's say the seat boost is a peak of 100 ft/sec. As the pitch of the aircraft increases, the effective vertical lift will decrease from 100 ft/sec. in accordance with the formula shown in figure 4.



We can now assume a series of pitch angles and compute the effect it has on vertical lift. We use the arbitrary maximum boost of 100 ft/sec. in Figure 5.

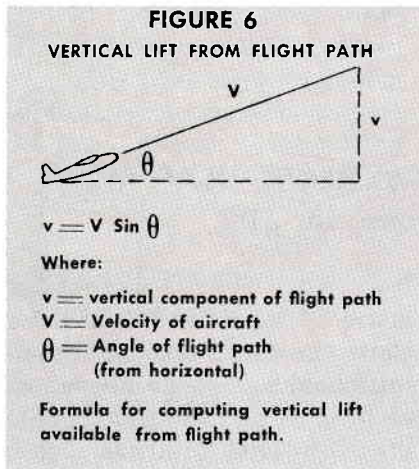
It is most interesting to note that in a rather steep pitch of



45° there is only a 30% loss of seat boost. Even in the extreme 60° pitch 50% of the boost is still effective. Now the task must be to compute the same relationships for the effect of flight path.

FLIGHT PATH EFFECT ON VERTICAL LIFT

To compute the effect of flight path on vertical lift we must first assume an airspeed. Let's assume 207 kts because it represents a speed range where a considerable number of ejections occur and also because it works out to approximately 350 ft/sec. — a convenient number to use. The relationship is very similar to that of the seat boost and is shown in figure 6.



Using this formula we can construct a chart showing the changing relationship between flight path and vertical lift. We have assumed an aircraft velocity of 350 ft/sec. (207 kts).

O. K. the picture is starting to take on an impressive shape. For the final step in our sensitivity analysis, let's compare

FIGURE 7

EFFECT OF FLIGHT PATH ANGLE ON VERTICAL COMPONENT

Flight Path Angle	Vertical Component
0°	0 ft/sec
10°	60.9 ft/sec
20°	119.0 ft/sec
30°	175.0 ft/sec
45°	249.4 ft/sec
60°	303.1 ft/sec
90°	350.0 ft/sec

As the angle of flight path increases note the sharp rise in the vertical component of the flight path.

the results of these two flight conditions working together. For ease of comparison we'll assume that the pitch angle and the flight path are identical. Figure 8 shows that as the pitch angle is increased the vertical component of the seat is *decreased* but the vertical component of the flight path is *increased*. The total upward vector is the net result of the two working together.

CONCLUSIONS

Figure 8 gives a rather dramatic portrayal of the relative sensitivity of attitude versus flight path. It should dispel any fear of adverse flight attitudes detracting from seat effectiveness during a Zoom Maneuver. It can be seen that a 90° flight path will result in a 100% loss of vertical seat vector, but the aircraft vector gives a 350% resultant increase over what the seat would have given in a straight and level condition. But CAUTION . . . this discussion is not advocating ejecting from a steep-as-possible zoom. That is unnecessary, impractical, and dangerous because of the difficulty to accomplish such a maneuver. A small zoom angle of

10 to 15 degrees has a tremendous advantage and is very easy to accomplish.

But the Zoom Maneuver is just a convenient method of showing the sensitivity of attitude versus flight path. In this maneuver the seat boost and flight path are both in your favor to one degree or another. What if we assume, however, that the aircraft were in a steep bank during an emergency flameout approach, the flight path is not up but down. Now the vertical component of that flight path is working against you, not for you. The only thing you have working for you is the seat boost and that may be degraded considerably by the steep bank. What do you know? What should be your *number one* concern? Be careful with your answer.

If you answered . . . "Roll out of the bank!", go to the end of the class and the beginning of this discussion — you missed it. The sensitivity of attitude and flight path is just as valid down as up. Only in this case concern is not "How can I make it better?" but rather "How can I make it not so bad?". Since adverse flight path is far more significant than adverse attitude, your first concern in this case should have been to make the flight path "less adverse". It just so happens that the ideal way to stop the adverse flight path (sink rate) is roll out and pull up, thereby helping both problems.

Another example of the same thing can be seen by a review of figures 5 and 7. This shows that a 20° bank does not seriously alter the effective boost of a seat but a 20° *downward* flight path will more than wipe out the entire effective boost of that same seat.

The lesson to be learned from a sensitivity analysis of attitude versus flight path is . . .

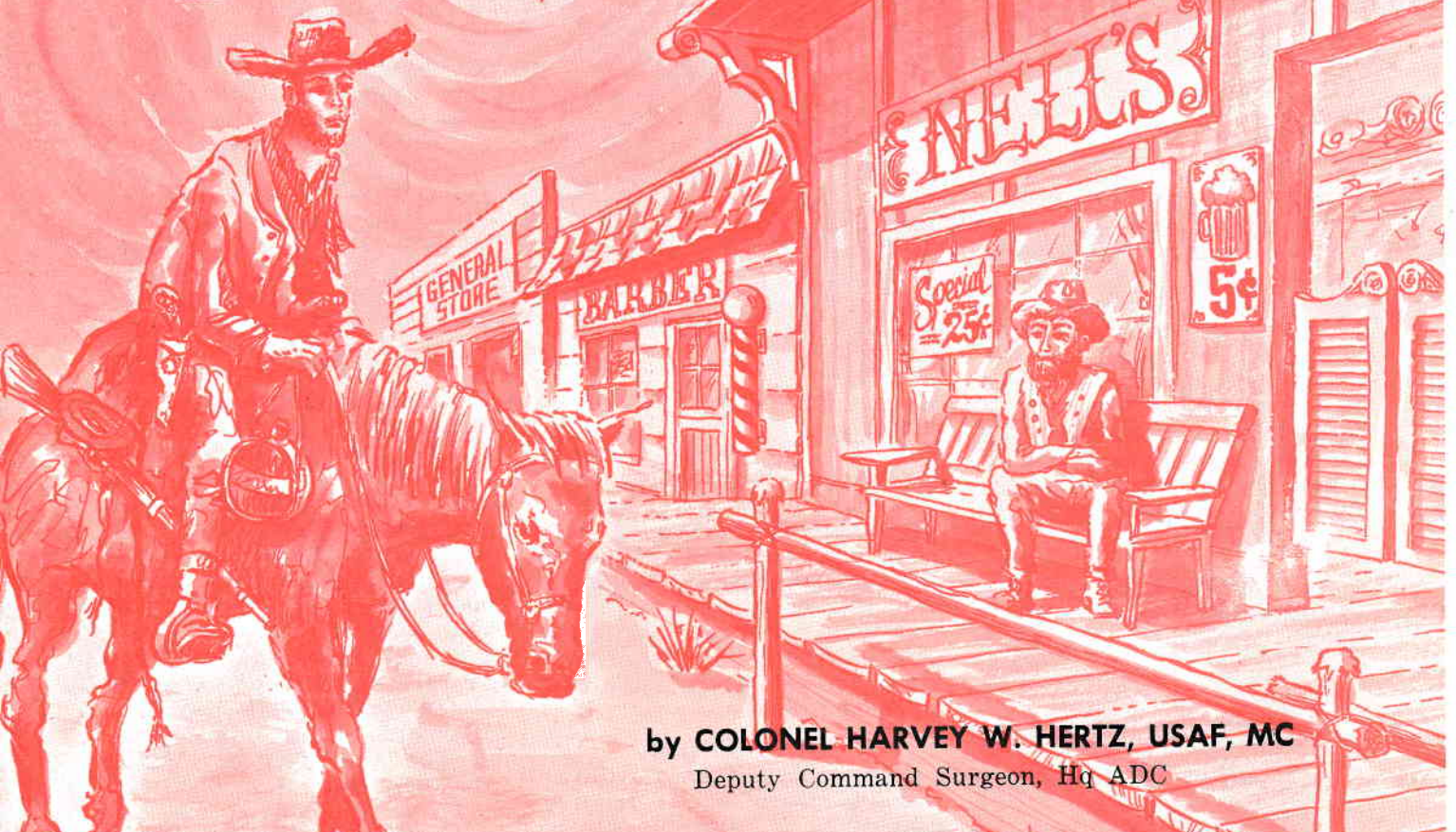
ALTHOUGH ADVERSE ATTITUDES ARE UNFAVORABLE, ADVERSE FLIGHT PATHS ARE MANY TIMES WORSE. ★

FIGURE 8

TOTAL EFFECT OF PITCH ANGLE ON VERTICAL COMPONENT

Pitch Angle/ Flight Path Angle	Seat Effect	Flight Path Effect	Total Upward Vector
Level	100 ft/sec	0 ft/sec	100 ft/sec
10°	98.5 ft/sec	60.9 ft/sec	159.4 ft/sec
20°	94.0 ft/sec	119.0 ft/sec	213.0 ft/sec
30°	86.6 ft/sec	175.0 ft/sec	261.6 ft/sec
45°	70.7 ft/sec	249.4 ft/sec	320.1 ft/sec
60°	50.0 ft/sec	303.1 ft/sec	353.1 ft/sec
90°	0 ft/sec	350 ft/sec	350 ft/sec

TAKING CARE OF YOUR HORSE



by COLONEL HARVEY W. HERTZ, USAF, MC
Deputy Command Surgeon, Hq ADC

The oldtimer sitting on the bench in front of Nell's Saloon watched disapprovingly as a young cowboy came loping up the dusty street and tied up to the hitching post a few feet away. The horse was gaunt, lathered, and breathing hard; the saddle had broken straps hanging dejectedly and the blanket was dirty and full of burrs.

His progress through the swinging doors arrested by the oldtimer's arm, the thirsty cowboy found himself looking into a pair of steely eyes. "Young feller, if you're ever goin' to get your job done out here, you'll have to learn to take as good care of your horse as you do of yourself. Now, first . . ."

Years rolled by, Dry Gulch went through the ghost town

stage and with the advent of war became Hero Air Force Base. Long after the war, oldtimers of a different variety occasionally gathered outside Base Ops to watch the new breed taxi-up in their lean, shiny fighter jets. An ex-P38 ace of WWII looked on one day while a heavyset pilot clambered out onto the ladder with some difficulty, walked around the bird talking to the maintenance types a few minutes and then slowly made his way across the shimmering pavement to the crew entrance.

As he passed the standby driver, he leaned on the car to ask, "Will you be ready to take me to the BOQ in about two minutes? I've really had it after that cross-country, and I want to hit the sack for a couple of

hours." The driver nodded because the man's face and drooping shoulders spoke adequately of fatigue, and the wet spots on his K2B suit, stretched tightly across bulging rolls of fat, showed how much the heat was bothering him.

"Young fellow," the oldtimer stopped him as he started through the doors, "years ago my daddy got chewed out around here someplace for not taking as good care of his horse as himself. Looks like you've got your Good Horsekeeping Seal of Approval, but maybe you've swung too far to the other side of the saddle. Now, in the first place," he went on

How about you? You wouldn't think of skipping the preflight, flying a red cross condition or

knocking out periodics, but are you sloughing off your own personal checklist? Keeping your airplane in first class shape involves a lot of interaction with people in operations, maintenance, safety, and industry. There are many parallels in keeping you in good shape, and the medics aren't the only base people involved. Let's see how the situations compare.

Preflights. A lot of guys have worked their shifts and maybe overtime to give you a good airplane out on the line this morning. You still go over it with a fine tooth comb to see that nothing was missed after the last man brought it back, that the maintenance boys buttoned every fastener and the fuel is right where the piece of paper says it is. Your own checklist? Everybody knows that old stuff about getting 8 hours rest the night before, not partying it up last night, and eating a decent breakfast. Your bird is really a pretty forgiving creature — you've gotten it down after some pretty hairy things happened upstairs. And your body can be forgiving too.

At least up to a point. Maybe that point was reached back in the low and slow era. Maybe then you made an on-time take-off after a late party, without time for more than a paper cup of lukewarm dispenser coffee, and nothing happened. But body maintenance like this won't keep you on the forward side of the power curve in today's airplanes. When things start coming unglued after a snap-up at high altitude, your brain won't keep up with the aircraft, your sensors slow way down, and there's no circuit buttons to pop back in. To fly at today's high altitudes and high Mach numbers, you've got to be physically

strong and mentally alert, and it helps to throw in all the rest of the Boy Scout code.

There's other preflight self-maintenance that needs more attention than it did in the days of the AT-6. You'd never even consider throwing a can of "Super-Fire Additive" in the tip tanks, just because the BX service station man said it might give you a few knots. But give yourself a red cross just because you're still taking those pills your wife's doctor said might help that jungle rash on your leg? We're finding effects from drugs every day that not only make them too risky for flying but indicate one shouldn't try to drive a car either. You feel well enough, but your judgment, speed of reaction, sense of balance, and other sensory abilities are measurably impaired even for auto speeds.

How about a list of drugs that are dangerous, and a list of "safe time intervals" after the last pill that I can start flying again? Unfortunately, writing off the red cross situation isn't this easy. Most times, it isn't the pill that's dangerous — but the condition for which you're taking it.

After all, if you're in the right shape to fly, you wouldn't need medicine. A couple of aspirin every four hours for that nagging backache the last two days isn't going to slow down your "punch the drop tanks and airstart" reflexes at all. But if that backache is due to a kidney stone that starts to pass in-flight, you're in worse shape than with compressor stalls over Greenland in a blizzard.

There's only one person who can safely clear up this red cross for you, just like only the maintenance officer can sign off some things. That's your flight

surgeon. Oh-oh, you back way back, he's liable to ground me. That's right, he might. But no more so than the wrench jockey will ground your bird, and for no longer. Neither one will sign it off until they know what's wrong. They both have the same job, to keep you and your machine flying as a perfect team. When you need maintenance, "Doc" tries everything to get you back on the line as soon as he can—safely.

We all have a natural resistance against getting grounded, and with some reason. Once somebody says we're not in perfect shape, we begin to think of flight pay ("wish I'd taken out that insurance"), the rent, kids in school, the wife's new coat, and that new flying job in the offing this summer. There's a little pride involved too; no one likes to think he's not just as good as the next guy.

One's personal record may be at stake: "I've flown 15 years and never been grounded yet." About time then, probably; it only makes good flying and personal sense to spot any defect as quick as possible, and get it fixed before it hurts you or goes not repairable at this station or any other station.

And for not-too oldtimers, getting grounded used to cost some time sitting around perfectly well while your aeronautical orders waited their turn at the mimeograph crank and the distribution system. Three days later maybe your ops officer got the printed word and you could fly again. Now all this is changed. A 1042 is typed out to provide a record to operations, Form 5 and finance, but you are qualified to fly the minute Doc says you're ready and a phone call to ops scheduling is all that's needed.

For involved cases requiring medical approval at higher echelons, action is expedited once the decision is reached, by phone or message if timing is critical.

But why not just see the civilian doctor downtown, or your friend Bill next door, who's a surgeon over at the base hospital? Not go through all that grounding business, just not fly until you're well? For the same reason that your flight surgeon sends you to Bill if you have a hernia that needs repair. Bill is a specialist in the surgical environment, but your flight surgeon is a specialist in your environment—flying. He's been specially trained in the stresses and hazards flight puts the body through, flies like yourself so he learns first-hand, and is thus best equipped to judge whether a given condition or medication will be hazardous to you and others. Sure, he might have to ground you for a few days, but that's better than an accident board or injuries that keep you laid up past 90 days into a suspended category.

Okay, so we're this far down the pre-flight checklist. Medications — none. Symptoms — none. Tired — well, yes, but from nothing the doc could find. Been getting my sleep, and eating normal. Better look around at some other areas.

For instance, not too long ago, a T-bird cross-country used to go like this: you got up early in the morning so you could make an early takeoff, both to get where you're going in plenty of time and to keep from using up all the runway on a hot Texas pavement. You didn't wake the wife because she'd been up with the kid last night, dressed and came down on base to find an open mess hall or snack bar.

Stood in line while the solitary disgruntled cook vented his spleen about early rising people in general by taking his maddening time about cooking the greasy eggs one pair at a time. Then came flight planning, the search for the right maps, waiting until Pete was done with the computer, then another line waiting for the weather briefer. Seemed like the PE type was mad about something too, because he took particular delight in telling you this was the only helmet near your size in the pool, and the seat kit didn't have a survival pack because they were short on these items. The AO took ten minutes to get back in from that transient early bird to sign your clearance, and then the driver was gone again. So you hiked out to the bird with that . . . kit hitting you in the back of the knees at every step.

You guessed it! The regular crew chief was off today, and the A2C hadn't put the oxygen in. Things were moving in pretty close to takeoff time, and the old man's current drive on controlled times being met didn't help any. That little bit of radio maintenance when the set didn't check out only took 10 minutes, after he finally showed up, but now you were lining up for the takeoff fifteen minutes late. And you looked like the cook and the surly PE man.

Fatigued? Frustrated? There are other words for it too. Accurate measurement of your mental reflexes to handle emergencies about that time would probably show you weren't fit to take a Model A out onto the freeway, let alone the thousands of pounds of thrust you were about to handle.

If any of these things are still

going on today at Hero AFB you better go see the old man and tell him somebody's quality control for pilot upkeep is falling down. And enlist your flight surgeon and safety officer's help—this is one of their areas. If all these things could be smoothly and efficiently handled for you in the preflight period, and so consistently that you never had to give them any personal attention or thought, you could start engines up and canopy down as fresh as a daisy—as you should be. Who knows but what we'd never see that old phrase "but Joe never flew like that before" on accident board testimony pages?

Now we've breezed through an uncomplicated preflight, you have flown the mission and told the boys about a couple of little things that need checking into on the postflight. That doesn't end a successful maintenance program for you or the plane.

Periodics. Like your bird, you're scheduled in for a periodic. The CBPO machine kicks your card out three months before your birthday, and you can take it earlier if scheduled to go PCS or on prolonged TDY. If your years are advancing a little, you may sweat it out, but then usually can go home and tell the little woman you're still the big strong man you used to be, you've got it made for another year.

For a while, over ten years ago, we used to do just an abbreviated exam: a few vital things and a look at anything that might have bothered you in the intervening year. And then we learned you felt vaguely uneasy, you couldn't feel quite so sure when you went home that night to report. So now we do a full check every year, and the exam's just as

good as you make it. That's right, you. If you minimize, leave out pertinent details or don't mention something because you don't want the doc to think you're a hypochondriac, the exam could end up like the maintenance man's answer when your only entry on the 781 is "radar didn't work right". The answer: "ground checked okay".

Our ground checks are only as good as the input. We haven't gotten to the magic computer stage where it suffices to get a one-shot X-ray picture, a drop of blood, and some of the yellow fluid you never seem to have enough of at that particular time. Your flight surgeon can't afford to have any hearing loss in the speech frequencies as he questions you about things you've noted on the SF 89 history form. Then his brain computer tells him what to look for, and what lab tests to order. The lights on the ophthalmoscope, the earpieces on the stethoscope, and his all-too-inquiring finger will sometimes pick up some large defects although you don't mention them. But the best indicator is the history you furnish him.

How about that complicated gadget with all the wires that makes a record of the heart? Surely it will find all and tell all, even if you don't. It's similar to the engine analyzer on the multi-engine transports, and gives about the same patterns. Most of them are normal, sometimes they vary from the normal but are within normal range; once in a while they show something specifically wrong, but we're hard put to say just what.

Like all the other lab tests, the electrocardiogram is just one piece the flight surgeon fits

in with all the others and with your history, to arrive at his conclusions. A normal one today doesn't guarantee you won't drop over tomorrow with that greatest of all compressor stalls that we all fear, a heart attack. But it's the best detector we currently possess. When all the other possible danger signals of heart disease are absent, a normal EKG means you apparently have no more than the average risk of a heart attack for men of your age.

A didn't-have-to-be story that happened a few years back illustrates the dangers of a minimized history and the fallibility of the electrocardiogram. A reservist on active duty for two weeks, obese and looking much older than his 48 years, was squirming around in the optometrist's chair with chest discomfort, so much so that the eye doc couldn't really do a thorough exam. He was concerned enough to send him right over to the flight surgeon.

The patient told about how the soreness had begun on the T-bird flight three days ago, across his chest where the chute straps were too tight because a nurse had used the kit on the first leg of the trip. The front seat pilot had wondered why he didn't just loosen the straps, but hadn't vocalized the thought.

The patient *didn't* tell the flight surgeon about the time the day before when his pain got really bad, to the point he had to lie down on a bed at his friend's ranch. A cardiac himself, the friend sized up the situation and got him to take a nitroglycerin tablet under his tongue. It provided instant relief. This is a pretty good test; usually if the pain isn't due to inadequate blood supply to the heart, the pill only produces one

whale of a headache.

Even without this history, the flight surgeon made a careful examination, and stood by the EKG while it rolled off the long strip of paper. No telltale signs were evident; it was a normal tracing. When the electrocardiogram does pick up a heart attack, it records a "current of injury". A heart attack is due to closure of the internal diameter of an artery supplying blood to the muscle of the heart. Plug the artery up near its beginning, and such a large wedge of heart muscle is knocked out that the pump action usually fails within seconds. If the clot forms lower down along its course, the wedge deprived of its primary blood supply is smaller, and if you have enough "collateral" circulation — branches into the same area from other unaffected arteries — you'll survive. The hunger of the muscle for oxygen carried in the blood causes the pain, and the softening of the muscle from this oxygen deprivation causes the heart's electrical waves to pass through this area in a direction reverse from normal. If the area is small or in a remote side of the heart, the overall wave pattern may not reveal this reverse "current of injury" and the tracing may appear normal.

Thus it may take several hours or days for the muscle to soften sufficiently to make a change in the EKG, if it ever does. It is estimated up to one-third of all coronary artery attacks may be "silent", and may never show up on a tracing.

With a history suggestive only of strap bruises of the heavy fatty tissue across the patient's chest, and a normal EKG, the flight surgeon told the patient to apply some heat and to return if the symptoms

changed or didn't disappear in a few days. The man went home that night, told his wife it wasn't his heart because the EKG was normal, and now they could go on their vacation. He almost drowned once a few days later when the pain hit him suddenly in the middle of the swimming pool. Two weeks later when it struck him again at a friend's barbecue he didn't live to make it to the doctor's office. Examination showed his main coronary artery had thickened with so much arteriosclerosis — much like old plumbing pipes clog up with deposited calcium — that only an extremely fine needle would pass through the lumen. And that small opening had finally clogged.

If you've paid reasonable attention to your health, your periodic usually will show no signs of defects; sometimes a minor thing will need further attention or just observation. But here comes the most important part of the flight surgeon's job, one with the greatest benefits for you. The reason he examines you yearly is primarily preventive; he's supposed to keep you in the air, not just be around to confirm that something's gone wrong. Here's the place where it is your turn to listen, and to ask questions just as he did at the start of the examination. He may not find any evidence of disease or defect, but he may note that your weight's seven pounds heavier this year, or that your exercise tolerance isn't what it was. His interest will match yours in trying to point out a few things that you can do to keep teeth, heart, body and soul together long enough to share that well-earned retirement pay with your grandchildren.

But don't expect his interest to exceed yours, to the point of being a policeman constantly around to remind you about doin' what you oughter. As Horatio Alger proved, success comes from hard, honest, and continued self-endeavor. He has no magic pills to hand out in substitution. He can't solve your problems anymore than the Chaplain can by punching your card.

He does have knowledge to hand out. We know the main danger signals leading to the number one killer — heart disease: a family history of disease, overweight, high blood pressure, and smoking. Not much you can do about heredity, but by getting your weight down to ideal levels, you can bring high blood pressure down usually down to normal, or at least to a less dangerous point. And at the same time, probably avoid the middle-aged diabetes that we're seeing more and more of in our flying population. As for smoking, there is a vast number of crippling conditions other than cancer or heart trouble primarily due to this irritant.

So how you manage your own fuel and toxic vapors between

flights becomes a vital part of your long range maintenance program. And exercise? Everybody knows how an airplane that sits on the line for long unscheduled periods quickly becomes a hangar queen. For example, sensible but vigorous exercise is probably what adds that "collateral circulation" we mentioned that may spell deferment or at least survival of a heart attack. Here's where the physical conditioning boys can help you.

IRANS, not economically repairables, moth-ball bases — we have parallels for them too. But the body is so beautifully designed a machine it shouldn't have to come to that. Not if its maintenance program gets as careful attention as, say a horse or an airplane.

Anyway, this is about what the oldtimer told the overstuffed pilot that day. Remember, his daddy said "as good care of your horse as you do of yourself." Not better. He told him a lot, and probably talked too much. Oldtimers do. But then, *he* lived to be an oldtimer. Maybe after a long cool one, he could talk more about fuel and exercising your steed.

See you at Big Nell's saloon?

ABOUT THE AUTHOR

Colonel Harvey W. Hertz, USAF, MC, came to the staff from Vietnam, where he was Director of Base Medical Services at Tan Son Nhut AB. He received his M.D. in 1949 from the Long Island College of Medicine. After 15 months general practice at Trenton, Nebraska, he entered the Air Force and served 4 years in Germany.

A 1957 graduate of the Primary Course in Aviation Medicine, he entered the Advanced Course in 1960. He obtained a Master's Degree from the School of Public Health at the University of California at Berkeley where he was elected to Delta Omega. Following the next year at the USAF School of Aerospace Medicine, Col Hertz took his residency year in the Office of the Surgeon, Headquarters SAC.





Nobody Loves me

by **CAPTAIN CARL J. MELNICK, JR.**,
*Chief, Weapons Branch,
Officer Assignment Division,
Headquarters ADC (ADPDO-OW).*

So you think you're the forgotten man — not hardly, friend Weapons Controller, not hardly!

Every day we hear the story that the 17XX (Weapons Controller Field) bunch comes up short on assignments, pulls more remotes than anyone, goes overseas more frequently and then comes back to some CONUS isolated site — well, I'd like to try to straighten out the story. The first thing I want to say is I am talking about right now — not three years ago or five years ago. The reason I make this point is because I can't substantiate what may have happened years ago, but I know how things are handled now and what we are trying to do to improve things.

Let's talk first about some of the tools we use in the assignments business. First, we have manning books — these are detailed breakdowns of requirements and rosters of all the 17XX personnel assigned to each unit. We use these to keep

tabs on the number assigned against the authorized strength, the number by grade and entry level versus fully qualified. Second, we have access to the Command Selection Folders. This includes a copy of your Form 11 and your Officer Effectiveness Reports (OERs). From this folder, we can check your past experience, recommended assignments, schools completed, etc. Lastly we have a copy of your Career Brief — this is data extracted from the Uniform Officer Record and is very important. It includes many items we look at such as family composition, date of rank, date of separation, last overseas tour length and location, date of last Permanent Change of Station (PCS) and your assignment preference statement. Now you say, "Who needs that last item; Personnel Weenies never look at that." Oh yes we do — but two factors come to light; one is your fault, the others ours. If you didn't keep that statement current by visiting your Consolidated Base Personnel Office (CBPO) Officer Records people, we can't help you. Also, if you show your CONUS state choice as California and your two base choices as Otis and Gunter, it's a little hard for us to figure just where you would like to go. On our side is the fact that we can't honor the choices of everyone. We don't have enough spaces in the areas constantly asked for and we must consider unit manning and mission capability. None the less, if you'll keep the data current, we'll do the best for you that we can.

Now let's look at some of our policies — I think that we may be able to dispel some of the fairy tales and may even prove that the Personnel Compass doesn't have "NORTH" at the bottom.

ASSIGNMENT OF NEWLY-COMMISSIONED OFFICERS

Recently the bulk of our allocations have been newly-commissioned second lieutenants from Officer Training School (OTS). Because we feel the initial assignment of these officers to their area of choice is very important to future retention, every effort is made to accommodate them. In this regard, we have gone so far as to request the Personnel Shop at OTS to insure the updating and correctness of each student's Assignment Preference Statement. Further, the practice of sending a second lieutenant straight from the Basic Weapons Controller Course at Tyndall to an overseas assignment is no longer followed. These officers now are assigned to a CONUS unit and are not sent overseas for a

period of at least one year. If at all possible, we hold the officer in the CONUS until he makes first lieutenant.

VOLUNTEER STATEMENT FOR OVERSEAS DUTY

There are many misunderstandings about submitting a volunteer statement for overseas duty. Say you submit a volunteer statement for Germany or Vietnam; this puts you ahead of all non-volunteers regardless of their Overseas Duty Selection Date (ODSD) for world-wide overseas duty. However, your preference for Germany or Vietnam or other specific location is considered first. Another point to keep in mind is that submission of a volunteer statement doesn't "freeze" you. If you come up first on the list by ODSD (regardless of volunteer status) before we have a requirement in your area of choice, you will be selected to go. So even though you may be a volunteer for one place—if a requirement doesn't come up before your turn to go overseas, you can end up going to another location as a nonvolunteer. We are in the process of preparing a recommendation to U. S. Air Force Military Personnel Center (USAFMPC) that the volunteer procedure be changed so that a volunteer be considered as such for only those areas he reflects in his preferences and a nonvolunteer for all other locations. Let's hope we can sell the idea.

SELECTION OF OFFICERS FOR OVERSEAS DUTY

Selection of officers to fill overseas levies is determined by Overseas Duty Date (ODSD) as outlined in AFM 36-11. Other factors must be taken into consideration such as Date Arrived Present Station (DAPS) and unit manning. In addition, we consider the individual's assignment history. If we have two officers equally eligible for a remote assignment and one has never been remote or has been remote only once and the other has been remote two or three times, the former officer will go. AFM 36-11 provides that an officer may be selected for a remote overseas assignment after completing five years service in the Continental United States subsequent to returning from the earlier remote assignment. U.S. Air Force Military Personnel Center has advised us that they will waive the five-year factor if military requirements are overriding. It has been our opinion that this should be a "last resort" contingency.

When considering manning of a unit, we sometimes have to "go past" an officer more eligible for overseas by ODSD. However, we then make every effort to provide a replacement so

that the officer with the earlier ODSD can be selected within the next cycle.

CONUS ISOLATED VS OVERSEAS REMOTE

We do not assign remote returnees to isolated CONUS sites unless they specifically volunteer for that site. We normally do not assign them to semi-isolated sites unless they are volunteers or the manning situation demands such action. At any rate, it is always a last resort-type move. The usual procedure is to assign a good-tour returnee to the less favorable CONUS locations, i.e. isolated/semi-isolated sites. Normally, the individual will go remote overseas from that location.

BASE-OF-CHOICE ASSIGNMENT OF OVERSEAS RETURNEES

A priority system had to be established when considering the assignment of overseas returnees. Naturally, not every one can go to his base of choice (we don't have that many bases in Florida or on the West Coast). Therefore, the priority is as follows:

1. Southeast Asia Returnees (established by USAF)
2. Remote Returnees
3. Accompanied Tour Returnees

The number of officers returning from SEA has grown to such magnitude that we cannot always accommodate these individuals with their first choice. However, in every case, we try to put the officer in his area of choice or as near his base of choice as possible (this applies to all officers).

ASSIGNMENT TO MAJOR AIR COMMAND OR HQ USAF (CAREER PROGRESSION)

All overseas returnees are screened by the Special Manning Branch at the Military Personnel Center prior to allocation to a Major Command. If a requirement exists and the officer meets the prerequisites, he will be assigned to USAF (including NORAD) and not be allocated to ADC. If he is not selected and is allocated to the ADC, he is again screened by the Headquarters Manning Branch of this Headquarters for possible assignment of Hq ADC. If no vacancy exists or he does not meet the requirements, he is then considered by this Branch for assignment. Occasionally we have more pressing requirements in the field (i.e. Commander or DC Chief positions) and will assign an officer to the field even though a Headquarters requirement exists. Every eligible officer is looked at for Commander or staff positions.

ASSIGNMENT TO MAAG OR SPECIAL CATEGORY ASSIGNMENTS

We are levied by Military Personnel Center at Randolph for Military Assistance Advisory Group (MAAG) or Special Category Assignments. These levies outline certain prerequisites which we must follow. We then select the most eligible officer who meets the criteria. The officer is nominated to MPD (Randolph) where the final selection is made.

MOST CONTROLLER DUTY LOCATIONS ARE UNFAVORABLE—FACT OR FANTASY

Of the 1671 controllers scheduled to be on board in July 1967, 1108 will be assigned to SAGE units. All of these units are located on regular bases with normal facilities. Also, by and large, they are located near relatively large cities. Three hundred ninety-nine will be in the manual environment; of these, nine are at isolated sites and thirty-seven are at semi-isolated sites. Twenty of this latter thirty-seven are at Key West which has a commissary and exchange at the Navy base seven miles away. Seventy-two of our manual controllers are in Airborne Early Warning located on regular bases. Most of the remaining 126 are located on or near regular bases or fair size towns. We have 164 officers assigned to BUIC, 26 at isolated sites, and 38 at semi-isolated sites. Accordingly, less than seven percent of the controllers in the CONUS are at isolated/semi-isolated sites and many of those (Key West) have base facilities nearby.

DIRECTED DUTY ASSIGNMENT (DDA) PERIOD FOR WEAPONS CONTROLLERS

Although not an assignment factor insofar as moving you from Point "A" to point "B", Directed Duty Assignment is important to you as to how long you MUST stay in the 17XX field. At present, AFM36-11 requires a DDA of three years upon completion of controller training — this includes the Basic Course, SAGE Follow-on Course, ECCM Course, the 412L Course, or the Refresher Course. Well, tip your hat to your ADC Junior Officer Council; these young gentlemen submitted a recommendation to change the rules on DDA and Hq ADC concurred with their views. It's now up to Hq USAF to make the change and when they do, the DDA will drop to one year for all courses except ECCM which will be two years due to course length. Now don't get the idea that this means that you're on your way out of the field as the Limited Resource Spe-

cialty rules and manning levels must be considered, but you are no longer "one of a kind." You now have as much of a chance to retrain as people in the other 24 Limited Resources Specialties.

I started this article by saying you think you're the forgotten man. I hope that I may have helped a little to convince you otherwise. We, in the Weapons Branch of Officer Assignments, earn our daily bread because of you and I have five of the finest NCOs in Uncle Sam's Air Force who surely "TRY HARDER" for the Weapons Controller. Also, as I mentioned, the Junior Officer Council has your interest at heart. Last, but not least, there is a group of officers in Hq ADC who make up the Weapons Controller Study Panel and report panel activities to the ADC Commander. These people, working under the guidance of a long-time controller — Colonel A. E. Wagoner, are working hard to find ways and means to make the 17XX field a better field in all respects.

The assignments and career progression of the Weapons Controller are closely monitored by this Branch. We make every effort to put the right man in the right job considering the individual's qualifications, desires, assignment history, and career potential. We encourage the officer in the field to make his desires and aspirations known to us so they can be considered. Further, we have made it known whenever possible that we are always ready to talk with the controllers in the field about their personnel questions, not from the point of making a "deal" but with the sincere belief that "people are our business" and we have a service to perform for them. We cannot make each controller happy with each assignment but we guarantee that everyone gets a fair shake. ★

ABOUT THE AUTHOR

Captain Carl J. Melnick, Jr., commissioned in 1958, served as Admin Officer in the 4756 Field Maintenance Squadron at Tyndall AFB. From there he was assigned as Personnel Officer at the 552 AEW&C Wing, McClellan AFB. His present assignment is Chief, Weapons Branch, Officer Assignments Division, DCS/Personnel, Headquarters ADC.





"Exertus Mos

456th FIGHTER



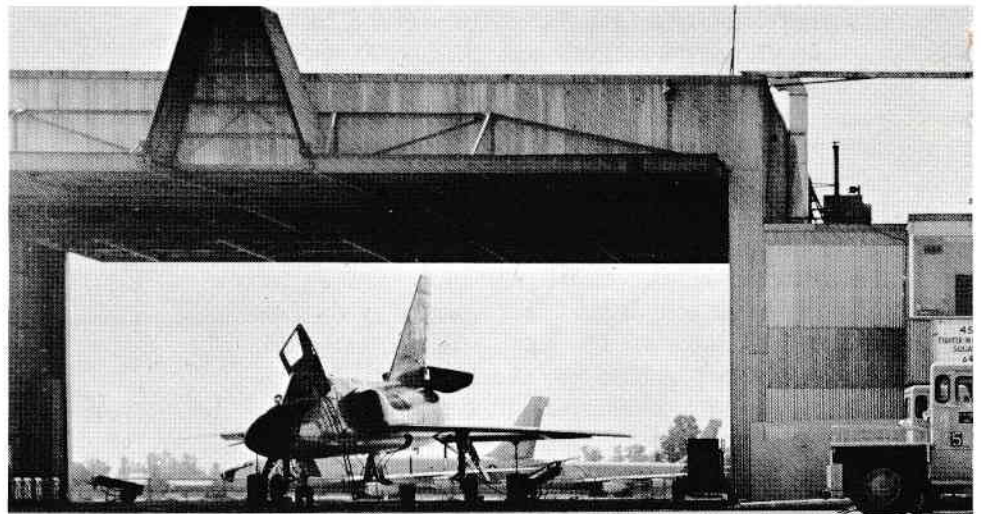
Scramble!!!

When we look at squadron manning documents for ADC units, they look pretty much the same. True, there are units which are tenant on a host base of a different command. There are squadrons that are under a wing organization. But in any case, each unit has the authorization for enough people to do the job. Agreed that no one has all the people required to be 100% manned in all areas, but this problem is common to all units, not just to one or two of them.

Well, since all units have the same problems, they should all function with the same degree of effectiveness. Unfortunately this is not always true.



Colonel William C. Jackson
(Commander)

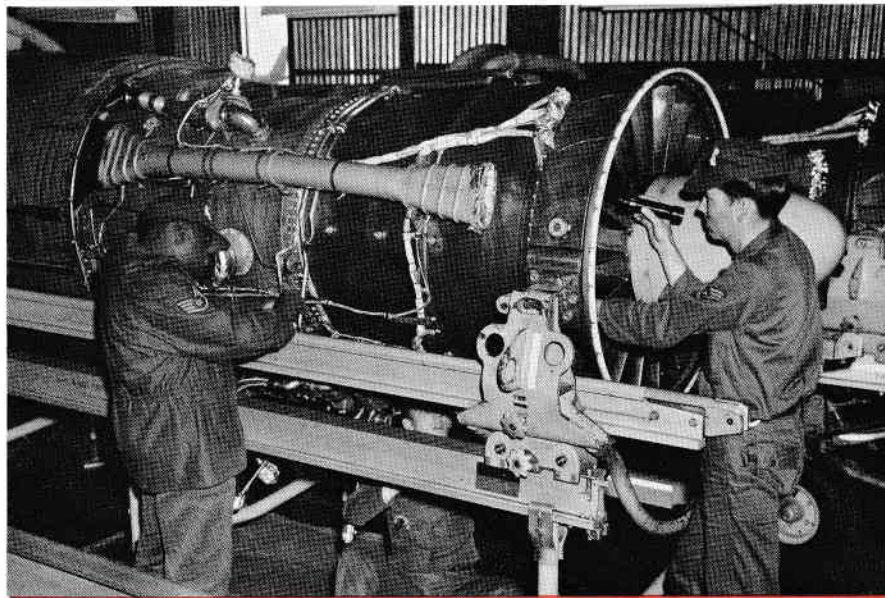


INTERCEPTOR

stus Fightus Bestus”

INTERCEPTOR SQUADRON

The 456 Fighter Interceptor Squadron at Castle AFB, California, is an excellent example of good management and has a reputation of getting the job done. This unit, under the command of Colonel William C. Jackson, flies F-106A and B, T-33, and U3A aircraft. They also have a detachment at Fresno Air Terminal. The squadron has completed over five years of accident-free flying. If you equate this to flying time, it amounts to over 37,000 hours in the air. Included in this flying time was a conversion of 1959 model F-106 aircraft back down to 1957 model aircraft. This meant going from vertical integrated instruments back to conventional



Sparkling clean maintenance in sparkling clean shops.



The heart of the maintenance complex.



No Queen, just periodic.



Aircrew Lounge.



Fresno Alert Detachments returns carrying survival kits.

"Through these portals pass . . ." with BUF in background.



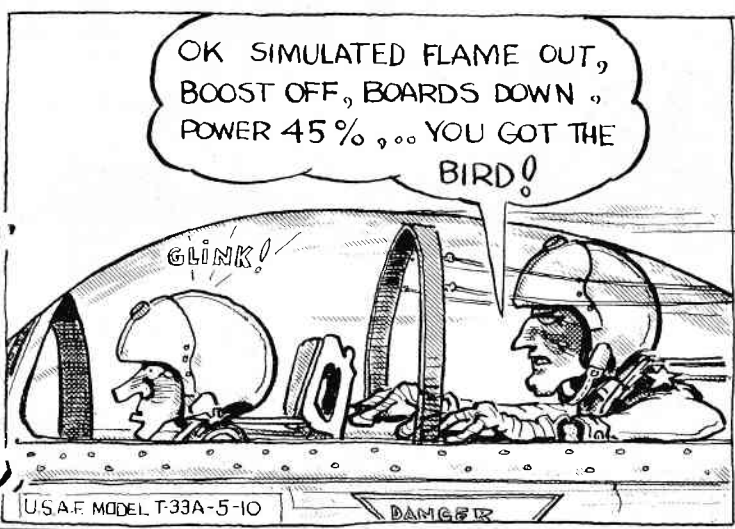
round instruments. In addition they have a record of achievements many units wish they had. Some examples are: In September of 1965 the unit received the Air Defense Command "A" award for outstanding achievement in air operations. They were chosen to represent the 28th Air Division in the world-wide weapons meet at Tyndall AFB, Florida. The squadron is scheduled to receive the United States Air Force Outstanding Unit Award which will cover the period 1 July 1965 to 30 June 1966. This list of accomplishments could go on and on.

We agree that some other units can point to some of the same accomplishments and say many of the same things. But to us one of the important reasons for the success in setting the 456 FIS apart from other units is the attitude everyone displays. There is very little complaining about doing the job. Everyone is proud of his organization. They are willing to talk about it to anyone who will listen. This "esprit de corps" can be found at any level and in any shop. This pride carries over into the job. The shops are spotless. The people are proud of what they are doing and glad to be a part of this organization.

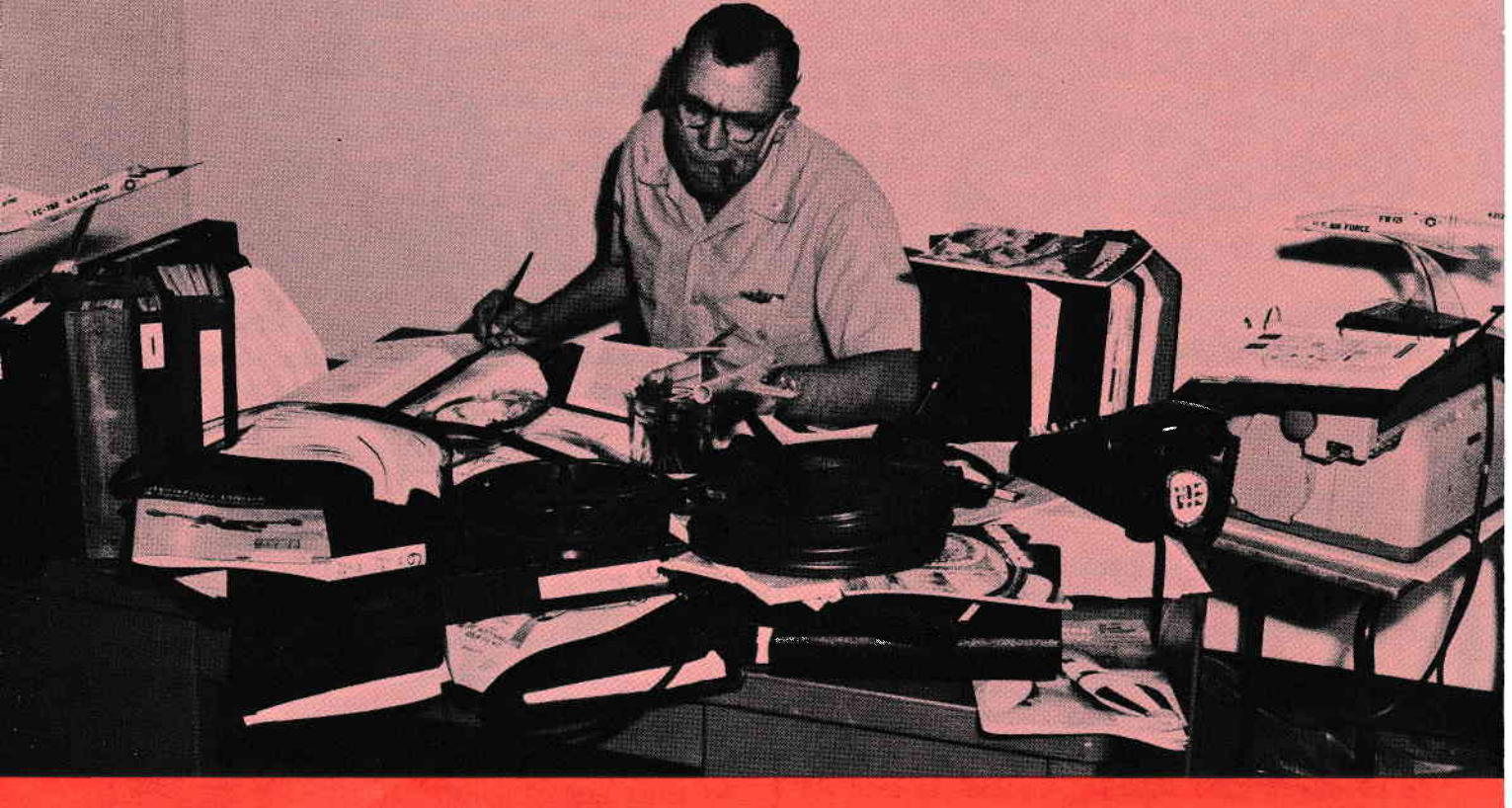
When you walk in the door of operations, you get the feeling that here are a bunch of pro's. They know the business and take a special kind of pride in telling you how they can hack the mission.

Gentlemen, we also are proud of you and your accomplishments. Our most hearty congratulations to an Outstanding Organization. ★

THE HAIRY ONES



Long Live The Learned



Want to grow old? Then try to be bold . . . with the books, that is. A portion of the career of one of our erstwhile fighter types has recently come to our attention, so we thought we'd pass it on to you with its inherent lesson, for what it's worth.

This lad, no youngster, reported in to his new Fighter Interceptor Squadron with no previous experience in their Unit Equipped aircraft. During the ensuing "check out" process, his Instructor Pilots were well impressed by the extensive knowledge of the aircraft and all of its systems he possessed.

This first became evident during his simulator training — even before his dollar ride in the aircraft. He was signed off in the absolute minimum of time and was subsequently placed on Flight Test Orders and made an Instructor Pilot as well. He made himself available to fly at all times. He was confronted with several emergencies, one of which could easily have resulted in the loss of one of the horses from ADC's diminishing stable. He handled it like the proverbial "ice man" according to his R.I.O.

Not too much time had passed when he earned the coveted title

"Master of Air Defense". Flight Commander came soon after, and now he is the Squadron Ops Officer, with a better than average crack at becoming a Squadron Commander (after his next promotion).

Sounds like a "picture book" career progression, doesn't it? Well, it actually happened. We're not so naive to infer that if you know your aircraft inside and out, become a test pilot, and make "We Point with Pride", that you will be catapulted up the ladder of success. However, obtaining a Masters' Degree in aircraft is a good start. When confronted with the rapid rise

of others, there are those who would mumble "just plain luck", or "you've got to be in the right place at the right time." In some cases, maybe so. But in most cases the envied successful jock "makes his own luck" through initiative and hard work.

Let's place ourselves in the Squadron Commander's position. If one of our "new guys" demonstrates a working knowledge of our UE bird far in excess of what is expected of him, we couldn't help but feel confident about this lad's future in the squadron. Not to mention the safety aspect—he probably won't bend a bird and send the C.O. scurrying to the Springs with explanations. It's a good bet we could also entrust him with additional responsibility, and that he would handle it in the same fashion—by becoming very familiar with it.

Our first mentioned jock had a background in flight test and had been on Functional Check Flight orders in several different aircraft previous to this assignment. The truth of the matter is that he used his past experience to good advantage. He gleaned much of his additional information from an unadvertised source. He knew *where* to find additional facts, and he *went* there. Namely, Maintenance Quality Control Section and their Technical Order Library. He picked the brain of the local F4344 (Flight Test Maintenance Officer), a veritable fountain of knowledge concerning things mechanical on your bird.

If he couldn't find literature or a publication on the subject he was pursuing, he solicited the help of the Q.C. Inspectors, one more source of valuable

facts with years of experience behind them. Another door was opened when he learned that the Q.C. shop was on distribution for the "Contractor's Periodicals". Factory publications often contain informative articles written by the company test pilots who fly the birds off the production line. Occasionally they will contain excellent gems authored by the experimental test pilot who was the first man to coax your machine into the sky. Factory pubs frequently have ideas for improvements and modifications long before they come into official print. The factory "Tech Rep" was consulted and of course gave freely of his time and knowledge.

By looking at this ADC fighter pilot's approach to a new unit and a new aircraft, we have refreshed our memories as to where we can obtain additional info to supplement the pre-set knowledge we have of our aircraft.

For a starter, why not go to the Dash Six of your aircraft? It should be in your Q.C. T.O. library. The Dash Six spells out the inspection functions as they will be performed on your aircraft. Of particular interest to you will be the Dash Six CF Dash One, which is the guide for the Functional Check Flight. It will contain some little-known tidbits, allowable tolerances for example.

If you're not on FCF orders, we don't recommend you play test pilot, because in some birds this can get you into serious trouble. But knowledge of the FCF profile and applicable tolerances may aid you in identifying discrepancies before they become serious and making

more precise write-ups when you do write them up. The debriefers and effected specialists will be delighted to receive clear, factual, and accurate write-ups. Knowing that there is a malfunction is one thing, but knowing a lot about a malfunction simplifies their job considerably.

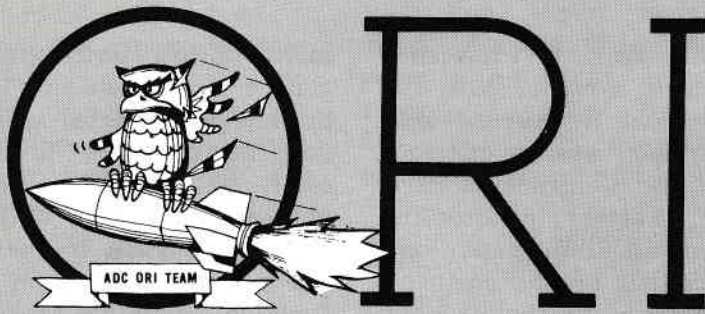
Once you've gotten your feet wet on the Dash Six, peruse some of the following Tee Ohs and see if you can pick out a few goodies that are useful to you:

- 2-1 Aircraft General
- 2-5 Propulsion System
- 2-6 Fuel System
- 2-9 Flight Controls
- 2-10 Automatic Flight Controls (if applicable)

We realize you don't fix 'em, but a little extra knowledge won't hurt if you can spare the time, and it'll certainly help the guys who do bend the wrenches. Not only that, but this extra-curricular effort may generate some more confidence in your aircraft as well as in yourself. This knowledge *could* make you live longer if it helped you make the correct decision when and if your engine gauges pointed south at the same time.

Let's not be complacent with ourselves. Take a fresh look at *your* aircraft—it's an old subject, but it's your bread 'n' butter. Talk to your Flight Test Maintenance Officer, the Q.C. Inspectors, the Tech Reps. Look at the maintenance manuals and the factory publications.

Want to impress your boss and your buddies? Know more about the bird than they do. Remember, in the interceptor business, continuous learning has a direct relationship with continuous living. ★



**OPERATIONAL
READINESS
INSPECTION TEAM
HQ, ADC**

SECURITY-UNSATISFACTORY

Security — Unsatisfactory. Just two words, but two words with a world of meaning. They have been written in far too many recent inspection reports, causing the unit to fail its inspection. It's too bad, too. The pilots flew well, the intercepts were good, supply functioned perfectly, the recall was timely, and the munitions people were satisfactory in every way. What happened? Well, let's take a look at a composite of some recent inspections. All of the discrepancies didn't happen to the same unit (thank Heaven), but they all did happen.

A fighter interceptor squadron is waiting enthralled for its approaching ORI. The time everyone has been anticipating finally arrives and the beautiful, sleek, four-engine (with props yet) cow lands. After the greetings take place (we're glad you're here—thanks, we're glad to be here) the mass load order is given.

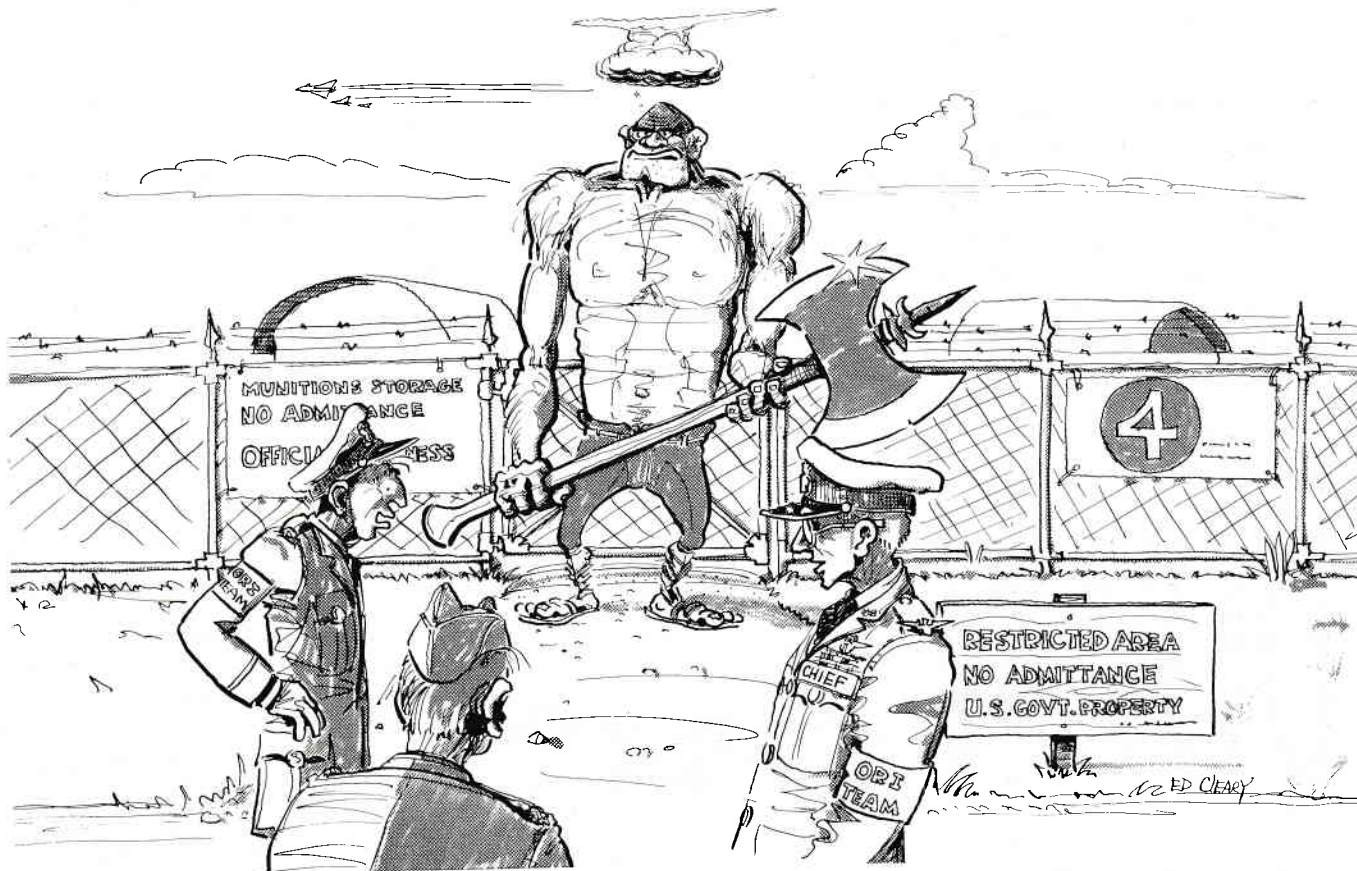
The first indication that security is not all that it should be occurs during the breakout. The sign and countersign for opening the shelters are not used. After the convoy is formed, the guards are checked. They are armed with carbines but some carry pistol ammunition. One has no weapon and three are not cleared under the Human Reliability Program. (Enough, so far, to stop the inspection. But let's go on.) The convoy is ready to leave but the entry controller won't let them go because the alternate route has not been "swept." (This is not

required and unnecessarily delays the load.) The convoy finally departs and, upon arrival at the load area, is admitted before the identity of all persons in the area has been ascertained.

During the load, the perimeter guards are checked. Three of 12 checked have carbines but carry pistol ammunition; three have never qualified with any weapon; and each has post instructions but not one has the instructions covering his own post. Several of the emergency post guards are checked. Most are augmentors from the finance, personnel, and administrative shops. To be as kind as possible, their training has been sadly neglected. Some have never fired their weapons; some have no communications; and some have not the foggiest notion of what they are supposed to do.

The security facilities such as fencing and lighting are inspected, but what's the use? This outfit is flat on its back. So, back to the team chief who, after much deliberation, gives the order to "Lock 'em up."

Now, let's get back to our first question, "What happened?" Well, it's quite simple. The commander had been so busy with other aspects of his mission that he just had not been able to get to security. He delegated that responsibility and took someone's word that security was OK. It was not even firm in his mind what his security requirements were. You think this commander an



WHAT'D HE SAY WHEN YOU TOLD HIM HE WAS OUT OF UNIFORM, IMPROPERLY ARMED AND THAT I AM THE ORI TEAM CHIEF ?

..... HE SAID YOU AINT GONNA GET THROUGH THAT GATE EITHER... SIR.

exception? Well, Commanders, can you answer "Yes" to the following questions? Do you inspect your security facilities at least once a month? Have you ever walked the entire length of your security fences? Do you know that all of your security lighting is working or that there is a procedure to insure priority repair? Do you inspect your guard posts once a month? Have you ever inspected them after midnight? Do you know the name of the NCO in charge of your security? The entry controller at your alert area? Do you know what a SAT is? An RSAT? Have you ever been inside the Central Security Control? Do you even know where it is? Have you questioned your security police so you know whether or not they know their job? If you have answered "Yes" to even a majority of these questions, I'll give you five to one that you never failed an inspection because of security.

There are some things you can do to make sure you never get caught short on security. First,

read the security manuals that apply to your resources. You don't have to become a security expert but you should have a speaking acquaintance with it. Second, know what security you have a right to expect. Third, check and make sure you are getting it. ADCP 136-1 can be invaluable as a checklist. If you are a tenant on the base of another command, it is essential that you make your security requirements known to the host commander. This cannot be overemphasized. AFR 11-4, host-tenant support agreement, is the vehicle you should use. If the host can't or won't give you what you need, tell us about it. If you don't, **YOU ARE RESPONSIBLE.** This point can't be overemphasized. Several units have failed their ORIs recently because they had not been specific about their requirements and the host just did not provide more than was requested.

ERLE L. FORD, Lt. Colonel, USAF
ADCIG, Security

ONE EC-121 LOST

The mission was an active air defense radar mission to be flown approximately 130 NM out in the Atlantic. It was flown at an altitude of 15,000 feet so that the radar inputs from the aircraft could be transmitted to a ground receiver site located on shore. The radar inputs are then transmitted to the SAGE

farther on a northerly heading passing directly over another fishing vessel at about 150 feet, wings level, red, green and white navigation lights operating. At this time no vapor or smoke was observed. Now the engines were running rough. The aircraft continued on for approximately 3/4 of a mile more and struck the water in

having any sort of difficulty? As you can imagine, the task is very difficult and the resulting findings reflected this. The primary cause was undetermined. The most probable cause was also unknown. The list of possible causes could be endless. Some of these could be flight control failure, separation of the propeller of one or more engines, asymmetrical flap operation, explosion and/or fire in the #5 tank cavity resulting in crew incapacitation, pilot incapacitation caused by fainting, seizure, drug reaction, spatial disorientation or hypoxia, operator/crew member error, or material failure. As you can see, the list goes on and on, but the cause will be listed as undetermined because there are no facts to indicate what happened to 19 people on an aircraft over the Atlantic.

DOWN and out

system to become a part of the Air Defense Command's radar net. The EC-121 mission was 14 hours of flying time. This was based on the aircraft flying at 15,000 feet for the entire mission.

Preflight and takeoff were normal. Climbout and flight to ALRI Station No. 2 appeared to have been normal. The pilot gave no indication of anything unusual about the flight at any time. Four minutes later, at 0126L, this same aircraft was observed by a fishing vessel "Stephen R" at an altitude of approximately 200 feet proceeding on a northerly heading, wings level, red, green and white navigational lights operating, and vapor or smoke emanating from the center fuselage area. A witness stated that the engines appeared to be running smoothly at reduced power. The aircraft continued two miles

a nose high, right wing slightly low attitude. When it hit the water, the plane exploded and burned. A witness reported flaming wreckage flying through the air. Flames were estimated by witnesses to be about 25 feet in height and to cover an area of one quarter of a mile wide. Flames continued to burn for approximately 5 - 10 minutes. The weather at time of impact was dark but clear.

After the crash, three fishing vessels proceeded to the crash scene. As the vessels approached the crash area they crossed back and forth sweeping the area with their searchlights, trying to locate survivors. None were found nor have any been found.

How does an accident board set about finding a cause of an aircraft crash when the wreckage is 200 feet down in the sea and there was no call from the aircraft to indicate they were

F-101 IN THE SNOW

What happens when a runway is not completely cleared of snow? How about when the leader becomes too occupied with his wingman's landing to adequately control his own aircraft? When these two are put together they resulted in a busted up F-101.

The general mission briefing was conducted by the squadron briefing officer in accordance with ADCM 51-101. The decision to fly formation was made by the crews involved in order to fulfill training requirements. The two aircrews got together and briefed for a formation takeoff and landing. Once airborne the flight split up at 15,000 feet and ran a normal low altitude mission, the only problem being the leader's aircraft (Blue 1) had increasing UHF radio problems.

After the last pass, the wingman made a VIS-IDENT pass while joining on the leader's right wing. The hand-off from GCI to the dispersal base GCA was delayed because the estimated position of the flight as given by the leader was in error. Because of increasing radio and tacan problems, the formation lead was passed to the wingman. Because of the radio difficulties both aircraft now had a channel change to tower frequency. Once contact was made, the leader asked for and received permission for a tacan straight-in approach.

The approach for the formation full stop landing was normal until the point of touchdown. The lead aircraft landed 1500 feet from the approach end with the left gear 18 feet from the edge of the runway. Flight path at touchdown was at an angle of about 2 degrees left of the runway heading. Shortly after landing, lead put his air-

craft into the aerodynamic braking attitude. At this time his RIO advised him that the wingman was passing him. The lead pilot looked at his wingman momentarily. When he looked back to his own landing, he noticed that the aircraft was drifting left and corrected with right rudder. The aircraft responded with a slight turn to the right, but the correction was insufficient and the direction of travel continued to be left of runway heading. At 3100 feet the left wheel entered the snow windrow which caused a more severe swerve to the left. The nose was lowered at this time to aid in directional control and a sharp correction to the right was made. This was effective and brought the aircraft parallel with the runway heading, but with all three gear off the runway. The nose and left main gear then entered an area of deeper snow which caused the

nose gear to break off and the aircraft to lurch to its final resting point.

In this case the pilot picked up the blame as he rightly should since he failed to maintain directional control of the aircraft during landing. However, maybe we should look beyond the primary cause and dig a little deeper. This pilot was assigned to the squadron five months before the accident occurred. His experience in the F-101 was limited. The supervisors rated the pilot as average when compared to his peers. They also indicated that he had an intense desire to learn. But perhaps in our desire to push a new pilot to learn the Air Defense mission, we moved a little too fast. When faced with conditions less than ideal, the pilot was not able to cope with the situation as he should. Care should be used when placing new people in unusual situations.





✓ POINTS

This section of the magazine has been designed for you. Be you a headquarters type at any level, a commander, safety officer, pilot - interceptor, transport, light aircraft - radar intercept officer, mechanic, a civilian in industry, weatherman, doctor, designer, or Indian Chief. This is your corner.

We solicit your ideas, items, notes, photographs, sketches, and pictures. The writing should be less than a paragraph - preferably a sentence or two.

We would sincerely appreciate your inputs mailed directly to: The Editor, INTERCEPTOR, Box 46, Ent AFB, Colorado 80912.

DID YOU KNOW THAT

✓ On an ILS approach, the most common mistakes are: a. Waiting too long to react to glide slope and localizer needle movement; and b. overcorrecting. (ADCSA)

✓ A turbine blade that is subjected to over-speed combined with overtemperature is very likely to stretch and stay stretched. Could be the beginning of an accident. (ADMME)

✓ Metals fatigue from stresses and strains just like you and I do. Except you and I recuperate, metals do not. (ADMME)

✓ Turbulence even in clear air has been known to tear airplanes apart. (4 WW)

✓ You light airplane drivers, when going across mountains, don't try just skimming over a ridge. You can encounter downdrafts that will lead you only one place: into the ground. (ADCSA)

✓ You should approach an overheated brake on an aircraft from the front of the wheel, not the side, or you could be fatally injured if the brake explodes. It has happened. (ADCSA)

✓ To smoke or not to smoke? One way to approach the problem is to compare the death rate between smokers and non-smokers. Here are the ugly facts. General mortality rate of pipe smokers was 12% higher than nonsmokers, cigar smokers 22% higher, regular cigarette smokers 68% higher, and two plus packs daily 123% higher. (Still taste good?) (14 AF CSA)

✓ The largest officially recorded hailstone was 5.1 inches in diameter at Potter, Nebraska, on 7 July 1928. (4 WW)

✓ The greatest killer tornado of all was the one on 18 March 1925 which swept from Missouri across Illinois and into Indiana with a toll of 689 deaths. (4 WW)

✓ Sulpha drugs may affect the red cells in your blood leading to a decrease in the ability of the oxygen to combine with the red blood cells. This may cause hypoxia. (ADCSA)

✓ When you and your aircraft are in trouble, and there is a chance that you may have to part company, remember: When in level flight eject above 2,000 if possible. WARNING! Do not delay ejection below 2,000 feet in futile attempts to start the engine or for other reasons that may commit you to an unsafe ejection or a dangerous flameout landing. Accident statistics emphatically show a progressive decrease in successful ejections as altitude decreases below 2,000 feet. ABOVE ALL! When in a dive or spin, eject above 10,000 feet, if possible. (14 AF CSA)

✓ When preparing for a cross-country flight, don't just wear flight clothing that is appropriate for your point of departure and your destination. Imagine you'll bail out over the highest and roughest terrain enroute, and dress accordingly. Remember the troops a few years back who took off from San Antonio when the temperature was in the 90's? The destination was also very warm, so the entire crew wore summer flying clothes. During the course of the flight they were forced to bail out—over the Rocky Mountains! Four of the eight crewmembers were frozen to death, primarily due to lack of proper clothing. (14 AF CSA)

✓ If you use mustache wax or chap stick, or get oil from peanuts on your lips and mouth and you are wearing an oxygen mask at high altitude, it is possible for a spontaneous fire to break out. It has happened. (ADCSA)

✓ Did you know that a dirty flying suit under identical conditions will burn faster and more completely than a clean flying suit? (ADCSA)

✓ Metals, once subjected to maximum forces of stress and strain in any form such as tension, compression, torsion, binding, or shear, never return 100% to their original configuration. (ADMME)

✓ Alcohol is a depressant, actually an anesthetic. Even one drop has an effect. It slows you down and dulls your senses. It depresses your brain and your inhibitions so you get brave—foolishly. There is a time and place for drinking. It sure isn't before flying—a long time before flying. (ADCSG)

✓ Did you know that the habitual smoker's ability to absorb oxygen into the blood stream is less than the nonsmoker? (ADCSG)

✓ At 18000 feet the air pressure is one-half that of sea level. (4 WW)

✓ Landing on snow or where the surroundings are very white and bright, your tendency is to land high. (ADCSA)

✓ The most often date, time, and area for a tornado, according to statistics over the years, are: Between 1500 and 1900 local time on the 30th of April in Kansas, Oklahoma, or Texas. They have over one third of the nation's tornadoes, so watch out! (4th Wea Wg)

✓ Did you know that two martinis in Colorado Springs will have the same effect on you as three in San Francisco? (ADCSA)



safety officers'

FIELD REPORTS

EAR DEFENDERS. The 49th Personal Equipment NCOIC came up with a good idea for FOD prevention to ear defenders. His suggestion was to use helmet-type ear defenders and to keep the chin strap fastened. (Aural Sound Protector S.N. 4240-856-6650—LF50 and Helmet, Flight Deck Crew, S.N. 9D8415-515-4291 through 4305). We have ordered sixty of the helmets for use on the flight line, engine run-up, and last-chance inspection.

TRAVEL POD. During RTB when speed brakes were extended a moderate structural vibration occurred. An uneventful precautionary landing was made. Maintenance found that the travel pod door had become unlatched. When the speed brakes were extended the changed airflow over the pod set up the vibrations. With the pod door properly closed and pins installed no further problems were encountered.

BARRIER ENGAGEMENT, F-101B. During takeoff, approaching rotation, the aircraft started to veer to the left. Full right control deflection failed to control aircraft heading so the takeoff was aborted. The drag chute was deployed and was observed to open and immediately separate from the aircraft. Drag chute failure was caused by improper installation. The aircraft successfully engaged the BAK-6 barrier at approximately 90 KIAS with a 1090 foot rollout. The barrier functioned very effectively with no noted malfunctions. Cause of directional control problem was a left dragging brake.

HYDRAULIC PRESSURE, F-101B. After 30 minutes of flight, the pilot noticed the "MCSL Out" light on and the utility hydraulic pressure at 1500-2000 lbs. Immediate RTB was made and the gear was lowered on the emergency system. Pressure dropped to about 500 lbs. Flaps and speed brakes could not be extended. Landing was uneventful. Cause was a blown seal on the #2 engine pressure line quick disconnect.

BACKWARD TRIM, F-102. The Radar Shop replaced a hand control and stick grip assembly. When the pilot checked his trim during the after-start checks, he discovered that the elevator trim worked backwards; the forward trim gave nose up. This could have been somewhat shocking if it hadn't been discovered. Investigation disclosed that it was a new assembly and was wired wrong internally. It was received from Supply in that condition and wasn't checked before or after installation. We have established procedures to preclude this happening again.

SPEED BRAKES, F-106A. Speed brakes remained partially open 200 miles from base (out over water) causing emergency fuel condition upon arriving at home plate. Pilot elected to execute a precautionary SFO. Landed hot and long and engaged BAK-9 barrier at 30 kts. No damage to aircraft or barrier. Barrier worked as advertised (first time used in over three years). Found speed brake switch on right actuator shorted out and blew fuse.

LOW OIL PRESSURE, F-106A. The oil pressure fluctuated and started to drop shortly after takeoff. The oil pressure low warning light flashed on several times. The drop tanks were dropped over the gulf and an immediate recovery was initiated. The aircraft was landed on runway 13 at Key West Naval Air Station. The drag chute deployed late, approximately 3,000 feet after touchdown on the 7,000 foot runway. The tail hook was dropped and a successful engagement of the E-5 barrier followed. The barrier was contacted at 90 knots a little to the right of center. No swerve was experienced and the aircraft stopped 625 feet after contact. Cause of the low oil pressure was a bad adjustment on the oil boost pump pressure.

LOST? F-106B DISORIENTATION IN FLIGHT. Returning from a cross-country flight, having lost TA-CAN enroute, the pilot became unsure of his position. Poor in-flight visibility, late afternoon sun, and a marginal radio prevented the pilot from landing at his destination. Finally receiving a vector to a suitable emergency field, the pilot landed on a 7,200 foot runway. Being unfamiliar with the field and landing on a short runway, the pilot was braking somewhat excessively and a main tire blew out on the roll-out just prior to turn off.

THE WAY THE BALL Bounces

ACCIDENT RATE

1 JAN. THRU 31 MAR. 1967

ADC ANG

Thru Mar. 1967

4.3 3.7

MAJOR — ALL AIRCRAFT

BOX SCORE

ACCIDENTS FOR MAR.	1st AF	4th AF	10th AF	14th AF	4600	ANG
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CONV						
T-33			1			
F-100				1		
F-101						
F TF-102						
F-104						
F-106						
B-57						
F-89						
EC-121						

MINOR ACCIDENTS THIS PERIOD — 1

ON TOP OF THE HEAP

MO	ADC	MO	ADC	MO	ANG
62	456 FIS	33	87 FIS	70	119 Ftr Gp
42	62 FIS	32	444 FIS	50	162 Ftr Gp
35	48 FIS	26	414 Ftr Gp	38	112 Ftr Gp
33	4600 AB Wg	24	18 FIS		132 Ftr Gp
					141 Ftr Gp

ACCIDENT FREE

CUMULATIVE RATE

1 JAN. THRU 31 MAR. 1967 ADC ANG

JET	5.9	3.9
CONVENTIONAL	0	0

BY AIRCRAFT	T-33	6	0
	F-89		0
	F-100	126	
	F-101	6	
	F TF-102	12	6
	F-104	0	
	F-106	0	
	B-57	0	
	EC-121	0	

RATE = MAJOR ACCIDENTS PER 100,000 FLYING HOURS

we point with



CAPT. PETER J. HAERLE
343 Fighter Group
Duluth Intl Aprt, Minn.

PRIDE

STUCK THROTTLE (F-106)

Captain Peter J. Haerle departed Duluth International Airport, Minnesota, on an F-106 aircraft delivery flight to Tyn-dall AFB Florida. The departure and climb to altitude were accomplished without incident.

At level-off Captain Haerle was unable to retard the throttle from the full forward position. After a careful analysis of the problem, he elected to return to Duluth and descended to low altitude. After determining that engine power could not be reduced, Captain Haerle established radio contact with his squadron and calmly reviewed all appropriate emergency pro-

cedures.

Through the use of zoom maneuver and high "G" forces, the aircraft was slowed and all available drag devices were extended. Two low approaches were made to expend excess fuel and to gain experience with the full power traffic pattern to be flown. Throughout these approaches continuous high "G" turns were made to keep the air-speed within safe limits. On the final approach of his third pattern, Captain Haerle closed the fuel shutoff switches to shut down the aircraft engine. A smooth touchdown was accomplished 2500 feet down the run-

way for a completely successful recovery.

Investigation disclosed that a bolt on the throttle control rod had caught on an FOD curtain guard and effectively jammed the throttle in the full forward position.

Captain Haerle, a senior pilot, has flown only 122:45 hours in the F-106. His cool-headed analysis of the problem, and his superior flying ability enabled him to recover an irreplaceable fighter aircraft under the most trying conditions. This display of outstanding airmanship earns him the recognition of the "We Point with Pride" award.



AFTER BURNING

Address your letters to: The Editor, INTERCEPTOR, Box 46, Ent AFB 12, Colo., 80912
To be published, your letters must be signed,
but names will be withheld upon request.

WATCH OUT FOR SNEAKS!

Your magazine has been so well received here at Little Rock AFB that I have trouble keeping one for myself. People keep sneaking them off my desk. I would like to have my distribution upped to 25 if possible. I am presently receiving 10 copies. The INTERCEPTOR is a very informative publication and we are always pleased to receive our distribution. Keep up the good work.

Lt. Col. Richard D. Snyder
Chief, Safety Division
43rd Bombardment Wing
Little Rock AFB, Ark.

***You're on. Thanks for the letter.**

AN ORI FAN

Since my tour with an IG staff in ADC, I have made it a point to read every issue of INTERCEPTOR; especially the ORI message. The hard-hitting, on the line punch has never failed to hit the nail right on the head, including the November article! My praise to the author along with a request. Well taken, I hope. Let's dispose of the antiquated "KEYSTONE COP". The TEAM is a highly motivated group of Air Force professionals and, let's face it, there are no "COPS" in security! Young troop down on Post 99 is a member of the new breed—Security Police—and he is proud of it.

Capt. H. D. Mansfield
Director, Security & Law
Enforcement
USAF Academy, Colo.

***Security is part of us.**

FROM WEST GERMANY

Would you please let us have one copy each of your ADCPI-62 series. It took us a trip to Hahn AFB before we ran into them. Dealing with F-104G's, we would appreciate your help in improving our capability to handle those fighters.

Capt. Braasch
8858 Neuberg/Donau
Fliegerhorst 3, West Germany

***Glad to assist in improving your capability to handle those fighters.**

FROM HELSINKI

I request permission to publish an article named "Runway Impression Fence" (earlier published in INTERCEPTOR December 1962 issue).

I will reprint this article in our association's (Finnish Air Line Pilots' Association) Magazine "LIIKENNELENTAJA" (The Air Line Pilot). This magazine is very small (circulation about 300).

If possible I wish to subscribe to your magazine.

And one wish more—if it is possible I wish a permanent permission to publish this kind of a "civilian" article in our association's magazine.

I will translate the article "Runway Impression Fence" from ALPA's Magazine "The Air Line Pilot", August 1964 issue.

Capt. Sakari Nikkola
Finnish Air Line Pilot's Assn.
Riihitie 23 A 4
Helsinki 33 Finland

***One of the major goals of the INTERCEPTOR Magazine is to promote safe flying wherever it might be. We**

welcome you to reprint the articles referred to in your letter with the only request that appropriate credits and by-lines of the INTERCEPTOR be reprinted with the articles. We have placed you on our mailing list.

We extend to you and to the LIIKENNELENTAJA best wishes for success in flying safety.

FROM KOREA

If at all possible, I would like to get on your long list of subscribers. I can't remember when I first started reading your excellent magazine but I do know that I have found it to be of great interest and help in my career as a weapons controller.

I am presently serving as senior advisor to the ROKAF 308th AC&W Squadron here on Cheju-do (Paradise Island), Korea. I feel that your magazine would be of great help both to me in my duties and to the ROKAF controllers in their career development. Two copies would be ideal though one would suffice if your budget is as slim as mine.

If there is any information on Korea that I might send to you or individuals in your shop please let me know. I would be more than glad to do anything possible as a small token of gratitude for service received.

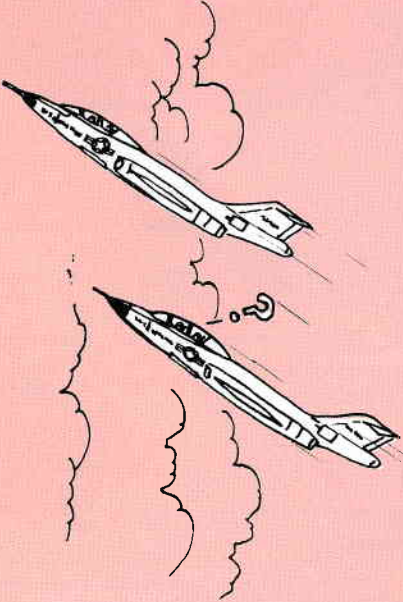
Capt. Robert M. Keith
Senior Air Force Advisor
O/L Cheju-do, 6146 AFAG.
APO San Francisco 96570

***You're on. We're also mailing some past issues with special articles on weapons controllers.**

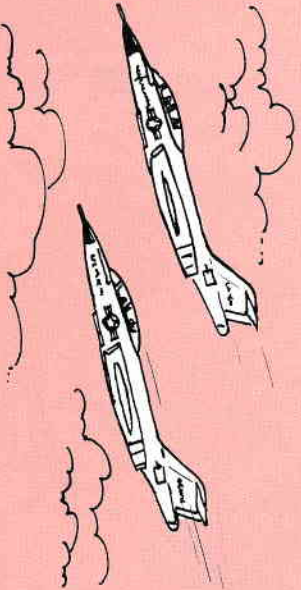
the Cold Hard Facts...

A recent close call inspired this refresher course in instruments.

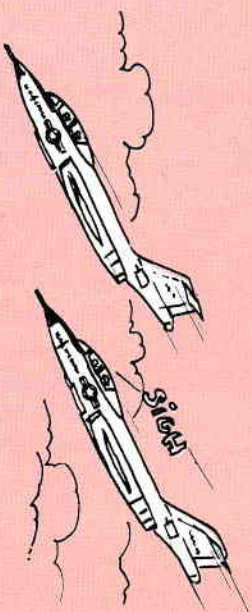
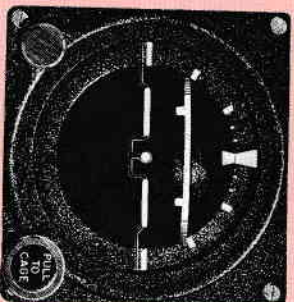
1 The average rate of descent in a jet penetration is somewhere between 4,000 to 6,000 feet per minute.



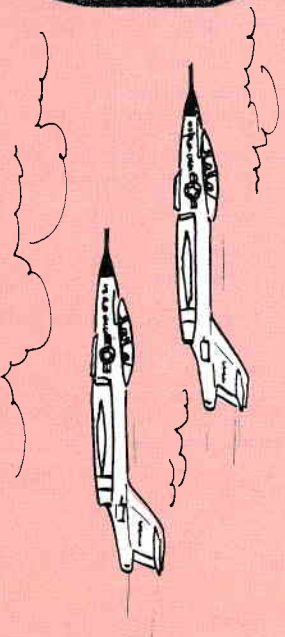
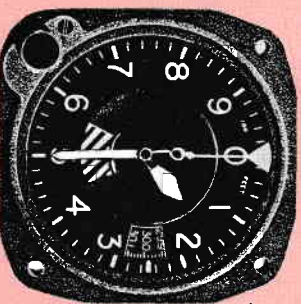
3 This will help you to smoothly establish a vertical velocity of 50% of your original rate of descent, or about 2,000 to 3,000 feet per minute.



2 At 1,000 feet above level-off altitude, reduce pitch attitude by one half on attitude indicator.



4 The rest is a "piece of cake". For vertical lead distance, take 10% of your rate of descent, which should be about 200 to 300 feet. At your level-off altitude plus lead distance, smoothly raise the nose of the aircraft so that your machine will be flying straight and level at your predetermined level-off altitude.



LEVEL-OFF PROCEDURE