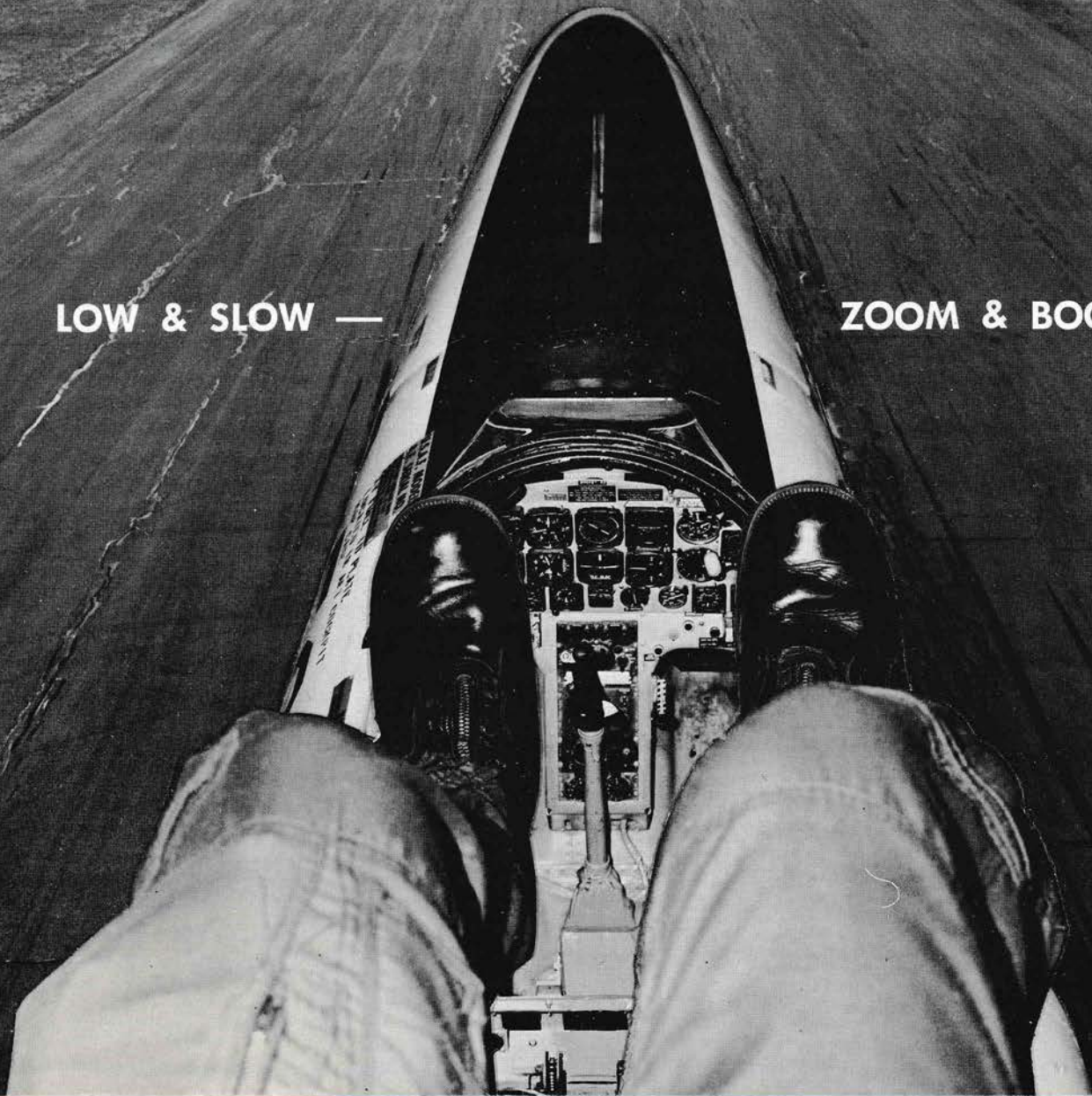


Interceptor

APRIL 1972

LOW & SLOW —

ZOOM & BOOM





Interceptor

FOR THE MEN RESPONSIBLE FOR AEROSPACE DEFENSE

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SPOTLIGHT

"The experienced fighter pilot does not take unnecessary risks. His business is to shoot down enemy planes, not to get shot down. His trained hand and eye and judgment are as much a part of his armament as his machine-gun, and a fifty-fifty chance is the worst he will take — or should take — except where the show is of a kind that, either for offense or defense, justifies the sacrifice of plane and pilot . . ."

Capt Eddie V. Rickenbacker

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OUR COVER

You've just pulled the gear and the engine quits. If you have waited till you're here to start planning what you'd do in a case like this, you may have waited too long.

Air Force Photos by SSgt John Halenkamp and SSgt James Keddrell.



“In the classic, textbook sense, management and supervision are very nearly synonymous.”

The military budget is in a descending spiral and austere times are one more upon us. As a result, we hear a lot about the need for better management and supervision. Like “Motherhood,” a demand for better supervision represents a mighty unassailable position, and I, for one, wouldn’t dare argue against it. My only issue is that in translating the concept into action, we are likely to accentuate the management and eliminate the supervision.

“How can this be? Aren’t management and supervision about the same?” In the classic, textbook sense, management and supervision are very nearly synonymous. Managers plan, organize, direct, and most managers supervise. All supervisors manage, and most managers supervise, or so it is said. What, then, is the difference? Simply this — management, as many of us now employ it, frequently does not involve much personal contact. Supervision always does.

I think the Air Force Dictionary says it beautifully; “Supervision is the process by which a person, persons, or the work performed by them is closely watched, evaluated, and controlled with a view to maintaining work schedules and keeping the activity functional in terms of operational objectives.”

Let me repeat that last phrase: “. . . keeping the activity functional in terms of operational objectives.” Have you ever seen the goal of the accident prevention program stated more clearly? From this rather startling revelation, it is only a small jump to the logical conclusion that, to a very large extent, safety is supervision.

The percentage of ADC mishaps assessed to personnel error climbed in many functional areas last year. It really ought to be approaching zero, because, through constant study of these errors, we keep adding to our box of anti-Murphy weapons. Could it be that nobody is watching, evaluating, and controlling the work being performed? Are too many of us exercising our unmistakable management talent in ways which exempt us from assuming responsibility for the work of others? The true supervisor accepts that responsibility — a responsibility which inherently and inescapably insure that everyone does what he’s supposed to do, when he’s supposed to, and in the way he’s supposed to — so that each task, each job is done the right way — which is the safe way, the only way.

If other approaches to accident prevention have proved less than satisfactory, why not check to see if the hangar is full of managers, with nary a supervisor in sight on the flight line?

COL JOHN M. VARGO

HOT LINE

JOB OPPORTUNITY. INTERCEPTOR Magazine is now accepting applications from Captains and junior Majors with F-102/F-106 experience for the position of Research Editor with an assignment here at ADC Headquarters in December. While we'd like you to have a background in safety and/or journalism, it's not mandatory. If you're interested, apply to the Editor by writing a 300 word composition on why you'd like the job. The address is:

Editor, INTERCEPTOR Magazine
Box 46
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For further information call Autovon 692-3186 or SAGE 321-3186.

SEE THE BIG AIRPLANE? There are some Air Force Bases that permit the troops to drive their POV on certain portions of the flight line. Most people stationed at these bases (especially our BUFF buddies) really appreciate what a convenience that is. But recently there has been an increase in the number of collisions between moving vehicles (both military and civilian) and parked airplanes. (Just how anyone could "not see" something as big as a B-52 is difficult to imagine. Maybe it's the camouflage.) Commanders are concerned about this costly trend and are questioning whether they can continue to permit this convenient privilege. Don't be the one whose carelessness makes everyone walk. Show that Fighter *People Do It Better*.

COMMAND REALIGNMENT. Headquarters Aerospace Defense Command recently announced the following changes to its Command structure: Col (Brig Gen selectee) L. G. Leiser leaves NORAD's Directorate of Operations and Training to replace Brig Gen Guy Hurst, Jr., as Commander of 23 Air Division. General Hurst becomes the ADC Inspector General replacing Brig Gen R. A. Robinson, Jr., who moves to DCS/Operations replacing Maj Gen J. L. Price who moves to command the 21 Air Division replacing Maj Gen G. V. Williams who retires. Col (Brig Gen selectee) R. T. Adams leaves ADC Assistant DCS for Operations to replace Brig Gen J. M. Fogle as NORAD As-

sistant DCS/Operations for Operations. General Fogle will take command of the 20 Air Division replacing Maj Gen J. K. Gamble who moves to the 25 Air Division replacing Maj Gen A. M. Burke who retires.

STIFF STICKS. In three months this winter, one F-101 squadron has reported six aircraft with frozen flight controls. The controls would freeze in flight and then thaw out during letdown. In each case the aileron response was normal when the AFCS was engaged in the Heading Select Mode. The reported malfunctions could not be duplicated on the ground. This problem had been particularly hard to isolate because it rains so much in this area and in all cases of frozen ailerons there had been previous heavy rains. Finally after a ground abort for the same malfunction, the maintenance troops found the aileron lag linkage frozen. On this particular morning the temperatures were in the low 20s and it had rained heavily the day before. By dropping the leading edge and disconnecting aileron control rods, maintenance was able to locate the frozen linkage. It seems that water was running in through a rig pin access hole in the top of the wing. This hole is capped with a plate, but the plate had a tab cutout of 1/8 inch. This allowed the water to leak in. The fix was as simple as drying the linkage and sealing the access hole plate. Try it; you'll like it!

IT'S STILL HAPPENING. The pilot preflighted his aircraft, found a discrepancy, and aborted. As briefed, he changed to the backup aircraft that had been preflighted by another pilot. The first pilot gave the backup bird a quick once-over, climbed in, and took off. Several attempts to retract the left main gear were unsuccessful although when the gear were extended all three would show down and locked. The pilot burned off fuel and landed without further incident. When the ground crew went to install the down lock safety pins (we feel this isn't going to surprise you) they found the left gear pin (sans streamer) installed in its left gear pin slot. The empty streamer had been properly stored with the rest of the streamers *and* pins. Both the second pilot and the "End-of-Runway" Inspector had missed the streamerless pin.

INTERCEPTOR INTERVIEW: THE PHYSICIAN ASSISTANT

The Commander of the School of Health Care Sciences explains how a new face — the Physician Assistant — will affect dependent medical care in the Air Force.



"We hope to eventually assign Physician Assistants to almost all of the general therapy clinics in the Air Force."

INTERCEPTOR was recently invited to Sheppard Air Force Base, Texas, to talk with Dr. (Colonel) Jerrold L. Wheaton, the commander of the Air Force's School of Health Care Sciences. Dr. Wheaton is presently heading up a program that is preparing highly trained enlisted personnel for a new medical specialty: Physician Assistant.

INTERCEPTOR normally doesn't concern itself with the developments in the medical field. The problems inherent to flying airplanes and missiles are usually more than adequate to fill the pages of the magazine and to keep our editorial staff quite busy. However, we do attempt to publish articles that may be of general interest to everyone in the command. We feel that the following subject falls into that category.

Essentially, the Physician Assistant Program was born out of the necessity to extend the physicians'

skills more effectively and to provide competent medical aid during a decline in the number of active duty physicians. The concept is not totally new — some civilian clinics, and the Army and Navy as well, plan to use persons with less than a Medical degree, yet professionally trained, to treat minor ailments in General Therapy clinics. What is new, is that this program, when implemented, will affect Air Force personnel. So before we rise up in unnecessary protest over the possibility of not having a physician (per se) treat our wounds and egos, read what Dr. Wheaton has to say.

INTERCEPTOR: Please tell us, as simply as you can, what is a Physician Assistant?

DR. WHEATON: The Air Force Physician Assistant will have an education foundation in the basic sciences comparable to Baccalaureate degree

holders with a major in the sciences. By virtue of his extensive training and demonstrated competence, he will be able to do many of the tasks currently performed by physicians.

INTERCEPTOR: How will these people be used? Do you plan to concentrate them, say three or four to a physician, or will they be spread out?

DR. WHEATON: What we hope to do is eventually assign them to almost all of the general therapy clinics in the Air Force. Regardless of the size of the medical facility, the main demand for medical service in the military is from the dependent population and this is for primary medical care. These people come to the general therapy clinic to be seen for the first time. This is where our man is going to be working. Whether it will be one PA to one physician, whether it will be two to one, or whether it will be one to two doctors, we don't know right now. Certainly, until we get enough of them, it will probably be one PA working under the OIC of a general therapy department. As the total number of PAs increases, we probably will have two, three — we don't know exactly how many we'll finally wind up with — in general therapy clinics.

INTERCEPTOR: Do you have a number that you're shooting for, that you think would be the optimum?

DR. WHEATON: This really hasn't been decided yet. Right now we're talking about somewhere on the order of four hundred for the Air Force.

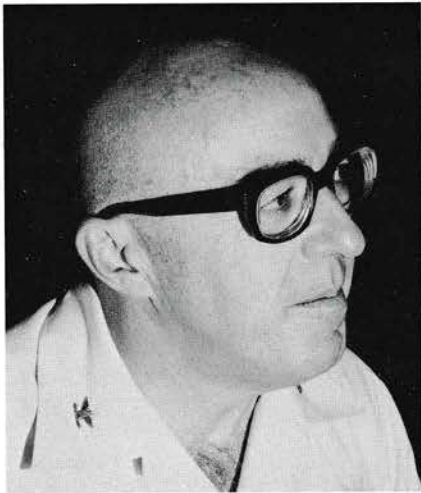
INTERCEPTOR: Then you haven't decided on any optimum grouping?

DR. WHEATON: No. Again, when you've done this one thing and two more, you'll have done three. We haven't any road map. We're going

to have to find out as we go and I suspect that the optimum ratio is not going to be definable. I don't think we're going to be able to define it simply because it's going to depend upon individual relationships. There are going to be certain physicians who will never be able to work with a Physician Assistant because they can't "delegate." We've seen this in all of our officer categories. You'll find a guy who operates beautifully at a certain level. When he can do everything himself, he does superbly. But promote him to the next level, according to The Peter Principle, and the son of a gun has been promoted out of his level of effectiveness. Now he can't delegate the work, and he has too much work to do by himself, so he does a half-baked job on everything.

INTERCEPTOR: How much authority will these PAs have? Will they be able to dispense drugs and prescribe treatment? What will be their job?

DR. WHEATON: Their job will be to see the individual person — if the individual person will see the Assistant. Now, if someone walks in and says, "I don't want to see the Assistant, I want to see the doctor." Fine! He'll see the doctor, but he may be in for an unnecessary wait. But let's talk about the individual who will see the Physician Assistant. The Assistant will take a history, do a physical examination, and will record the data that he finds in what we call a "problem-oriented" fashion. This means that he will list on page one each problem that an individual has or has had in the past, and, across from each problem, whether it's active or inactive. If it's inactive, he lists the date that it was solved and whether this solution was a terminal solution or not. If it is still an active problem, then the next page will carry a suggested



"There are going to be certain physicians who will never be able to work with a Physician Assistant because they can't delegate the work."

therapeutic regimen. In other words, a plan of treatment. He will then show this plan of treatment to the physician. The physician will concur or make additions, deletions, or corrections; and then, depending upon the relationship that has been established between the physician and the assistant, one of them will proceed with the treatment. This is going to be much the same relationship that you, as a fighter pilot, have with your wingman. If you have a wingman that you depend on, you give him a hell of a lot more latitude than some guy that's up there for the first ride on your wing. It's the same kind of thing. If these two people have a good professional relationship, then the assistant is going to be given much more latitude than he would otherwise. That's a diffuse answer to your question, but it's the only real way I can answer.

INTERCEPTOR: Do you anticipate a problem of acceptance from the dependents in the general therapy clinic?

DR. WHEATON: I don't think so. I think that this is going to be like anything else. Once our using public knows that this individual has a really fine education, that he has a solid foundation in basic science, that he has a year of experience working directly with physicians, that he is an expert in his particular area — which is "determining that which is not normal with a particular person," then I don't think they're going to have any questions about using him. In civilian life, we found this is what happens. The very rich say no, they won't use a Physician Assistant; and they buy what they want. The very poor won't use one because they think that they're being sloughed off with second class care. But the great bulk of the general middle class in the United States says fine, great, we

see no problem. And, in actual practice, this is what has occurred. I remember a couple of thousand years ago when I was in general practice in southern Ohio doing what I used to call "the skin and its contents," this was the way things would go. People in that portion of the hills would either see the faith healer or the preacher. If that failed, then they went to old "doc," the pharmacist. If he couldn't sell them something over the counter that would work, then they'd come to me. Then, if I failed, I had to send them up to Columbus. *But we had a progression.* And I think this same kind of thing is going to work here. I think people in the Air Force are going to recognize that the Physician Assistant is serving a useful purpose — then they'll want to use him.

INTERCEPTOR: Can you tell us how much training the Physician Assistant goes through, and just how well qualified is he?

DR. WHEATON: The training period is two years, and for this two years we are asking two years "pay back" time. The first year is a three semester year of thorough training here at the School of Health Care Sciences. That first year carries 1,403 actual classroom hours, which equates out to be 57 semester hours of work. It's probably one of the toughest college curricula in the business. Fifty seven semester hours is almost two years work in one, if you figure 30 semester hours to a year. The second year equates to 60 semester credit hours. In addition to this, an individual may have 60 semester hours in Arts education. Of course, we do not have a state or federal charter to confer academic degrees, but in the near future it may be possible to negotiate an agreement with an institution that is empowered to confer academic degrees.

INTERCEPTOR: What types of people have been enrolled, and what types of people do you look for to enroll in this course?

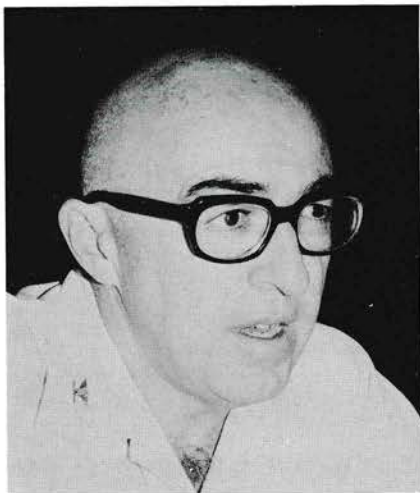
DR. WHEATON: We limited the course to AF Specialty Codes in the Medical/Dental career fields because we wanted to make it available to the enlisted man, to the non-commissioned officer — male or female. We said Medical/Dental career fields because we wanted to make sure that the individual liked that kind of work. We said that they should have had at least one year in direct patient care; and we asked that they have three years of previous military experience — for the same reason as before: to find out if they were going to make it in the military or not.

INTERCEPTOR: I've noticed that quite a few of your students are of senior rank — they've gone into some of the higher NCO ranks. Is this because you think they might stay in the Air Force a little longer, or were they just the people that applied?

DR. WHEATON: No. A little more than 350 people applied in the first short application period of somewhere less than six months. Of those 350 people, it just so happened that some high ranking NCOs were among the best qualified. However, we're not attempting to skew the curve in one direction or the other, and it doesn't make any difference what the rank is.

INTERCEPTOR: How many PAs do you presently have enrolled?

DR. WHEATON: We started out on the quarter system with the idea that we'd begin a class of twenty-five individuals every three months or the beginning of each quarter. We took the first class of twenty-five, then switched to the semester system where we're taking 30 indi-



"Any man in any business spends time doing things that other people with less training could do just as well."

viduals each semester, or three times a year. We can do more than that, but, at the present time, we have 78 enrolled. We have the capability of increasing the class entry number considerably. In fact, with the addition of very few faculty people, we could double or triple our annual output.

INTERCEPTOR: You've talked some about some of these people putting in their two years, their "pay back" years, and then going on to work in the civilian field. Is this project primarily a military project or is it being used in the civilian world, also?

DR. WHEATON: It's being used in the civilian world, but we hope that most of our people will stay in the Air Force. And the probability is good that they are going to. I can assure you that the Air Force is working on a career program plan for PAs which will provide adequate recognition, incentive, and compensation commensurate with their responsibilities and contribution to Air Force medicine. Put two years of training on top of this and two years of "pay back" time — that's 17 years. He's not going to "blow" that kind of equity. Even if he has only five years military experience, you put four on top of it, and he's up to the nine year mark. When you take a look at the retirement equity after twenty years, he'd be pretty foolish to ignore that. He couldn't make an investment in civilian life, even with an increased income that would give him that kind of an equity — ad infinitum. And this, I think, is a very, very strong push - - - . We are dealing with extremely intelligent individuals and they recognize what the benefits are. So I think we have to realize that we are going to have to deal very openly with them — if we want them to stay.

INTERCEPTOR: This seems to be the

ground floor of a coming thing. Is there a projected PA manning for the next four or five years?

DR. WHEATON: Prior to starting the program, the Surgeon General established a goal of 400 PAs. We will be producing 80 to 90 graduates per year with the first class graduating in July 1973.

INTERCEPTOR: We've talked about the job the PA will be doing, the fact that he will be discussing the cases and the problems with his consulting physician. Are there any unusual legal aspects to this. Who's legally responsible for the treatment?

DR. WHEATON: The physician is responsible — always has been and always will be. And, whether people realize it or not, in the Air Force the physician is responsible — *ultimately*. He's responsible for the acts of the technician, the nurse, or any category of personnel under him including the medical health services administration officer.

INTERCEPTOR: Do you foresee any expanding of the role for these people, say, expanding to take more of the load off doctors? We were thinking of tasks such as minor surgery, the setting of bones, other types of treatment. Do you think this program will expand to this?

DR. WHEATON: Oh, I think it very definitely will expand because, right now, any man in any business spends time doing things that other people with less training could do just as well. And if you can give that individual an assistant, and make it "cost effective" In other words, make their combined production greater than the individual's initial production. Then, very definitely, the program is going to increase because it will have been demonstrated to be economically feasible. As a matter of fact, in ci-

vilian practice, they have found that these things happen: (1) The physician's practice increases in size; (2) his gross income increases; and (3) the Physician Assistant pays for himself while he gives the physician additional hours off. Hell, this is better than a life insurance policy!

INTERCEPTOR: Has the AMA commented on this project?

DR. WHEATON: The Council on Medical Education, American Medical Association, has already announced essentials for an approved program called, "The Assistant to the Primary Care Physician." Our program will meet the essentials required for approved AMA programs. Essentials for other levels of PAs will probably be addressed by the AMA in the coming months. They are going to go ahead further and define skill levels using the National Academy of Science's definitions of the three categories of Physician Assistants. The C level, or the basic level Physician Assistant, will be an individual who learns manipulative skills. He doesn't know why he does them, but he knows how to do tasks. The B level is an individual able, in a narrow area of specialty, to not only do the skills but to know why they are done. He may know far more about that very, very narrow area than the physician does. Something on the order of, say, the electrocardiograph technician who knows all about monitoring equipment and the computer terminals that fit into it, and all these good things. Then the A level Physician Assistant, the top level, is an individual who not only has the manipulative skills, but has the many layers of understanding that are required for decision making — under the supervision of a physician. Now the last judgmental decisions, diagnostic and therapeutic judgments, are left to the physician. But

the A level Physician Assistant will have the ability up to and including that. This level is the first one being addressed by the AMA for accreditation.

INTERCEPTOR: Will your PAs be assessed a category, or is that just for civilian assistants?

DR. WHEATON: No, I'm talking about all PAs trained everywhere. They all will have to be categorized in this fashion. The Air Force PA will be top level defined by the AMA as "The Assistant to the Primary Care Physician." We will eventually have emergency medical technicians that will be the bottom level, and we will eventually have other people who will correspond to the middle or B level. But these will not be called Physician Assistants, or labeled as such, but they will be corresponding to that level of Physician Assistants in the civilian distribution system.

INTERCEPTOR: But in the civilian system there will be, in fact, three levels; that's what is programmed now?

DR. WHEATON: Probably, but the three levels will have descriptive titles instead of designations such as A, B, and C.

INTERCEPTOR: Will there be a test for deciding the levels, like the medical board examinations?

DR. WHEATON: My guess is that, probably, the AMA will accredit a school on the basis of its curriculum, or on the basis of the demonstrated quality of its graduates. And that, perhaps at some point in the future, they will develop a national examination similar to the national board exams. In fact, we've been in conversation with the National Board of Examiners and queried them as to whether they would consider using their mini exam (which is an

abbreviated examination) to get some idea of what our finished PA product does know. Right now we haven't had an answer on that, but I think they are going to consider it favorably.

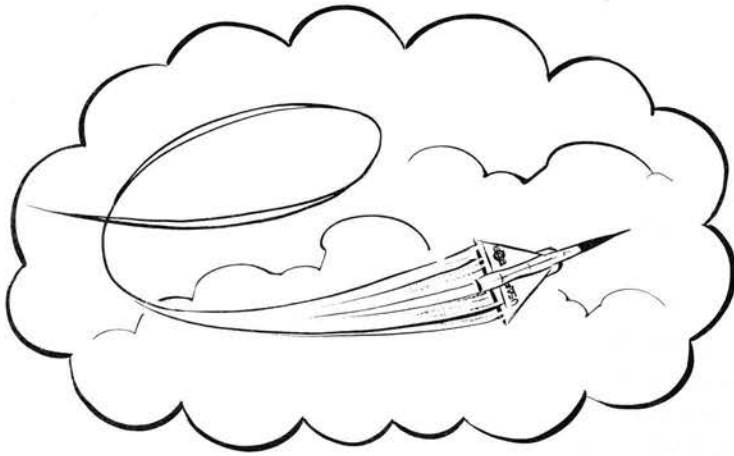
INTERCEPTOR: Do you anticipate any of these people being in the flight medicine field?

DR. WHEATON: We haven't even addressed this yet, but I think it's worth talking about and considering. Particularly since the AF, like other large industrial organizations, is going to have to go eventually along the multiphasic testing line similar to what Kaiser-Permanente* and some other large industrial organizations do now. When an individual comes in, a technician obtains a complete series of tests. If you have an "abnormal" in any test result, then you will receive further *individual* testing by a physician. I think that AF will have to go this route. And if we do, there would probably be a need for PAs in many sections of the hospital — including the flight surgeon's office.

INTERCEPTOR: Usually, when a new AF program is introduced, the task of "selling it" to the family falls to the service member. Therefore, what do you feel are the most important facts for us to take home to our dependents about the Physician Assistant program?

DR. WHEATON: You can tell them that this new man on the Air Force team is absolutely dependable. He's been selected because he likes people and wants to help them. He's here for one purpose, to make sure our kids get the Band-Aids and medicine they need for their little problems, and the expert medical attention they need for the big ones.

*Ed. Note. A health care program that covers this company's industrial workers and their dependents.



SUPER PILOT
OF THE YEAR AWARD
1962
CAPT. S.H. TIGER



C. SCHAFER

CHAIRBORNE PILOT

The demands of our modern day Air Force oftentimes chain many of our most experienced pilots to a desk. As a result and with few exceptions, the flying proficiency of these pilots suffers a gradual disintegration.

At first, the new desk-bound pilot fights for every hour of flying time he can get; however, as time passes, he becomes more and more involved with the demands of his administrative duties, and his interest and will to fly suffers proportionately. Eventually his motivation is whittled away by the frustrating effort required to get scheduled for a flight, the complaints of his family concerning off-duty and weekend flights, and often, the resistance of his boss to duty-hour flights.

Eventually he finds his knowledge of emergency procedures becoming rusty, his traffic patterns are no longer precise, his habit patterns dim and fade, and his instrument technique loses its precision and polish, therefore requiring greater concentration and effort. Occasionally, he may hear lesser experienced and less constrained pilots reproach his difficult situation with cynicism by being referred to as a "desk pilot" or "CRT" type. At this point, a feeling of inferiority sets in and he resigns himself to "fighting for time."

If he is fortunate, he recognizes his state of proficiency and establishes personal weather minimums while applying a healthy degree of conservatism in his flying. His outlook at this point is to live to a happy retirement or die with a heart attack as a result of his sedentary life and administrative frustrations.

If his flying proficiency is low, his confidence exag-

gerated, and pride high, then he is indeed unfortunate — he may become a real menace to himself and to the military personnel and equipment entrusted to him. Bad weather and mechanical difficulties can compound themselves into severe trials for the most proficient pilots — and fatal nightmares for the "has been" old head. Under adverse conditions, the little things: frequency changes, headings, emergency procedures, etc., can make all the difference. Under very adverse conditions, an experienced and proficient pilot would be safely on the ground, awaiting a break in the weather or proper repair of mechanical difficulties. The same holds true for the marginally proficient; he should be even more cautious. Needless to say, the confident and proud, but unproficient driver has the odds stacked against his reaching retirement.

Sometimes our "desk-bound pilots" are returned to flying jobs . . . and it is amazing how rapidly proficiency is reattained. Southeast Asia proved that! The wise pilot is already acutely conscious of his shortcomings and after a month or so of intensive flying, he may once again afford a feeling of confidence and pride in his flying ability. It is nice to be alive.

How does this fit into flying safety? All of us, including the pilots who look down disparagingly at the "desk-bound," are destined to be constrained from the joy of full-time flying at one time or another. If you are unable to maintain high flying proficiency, it is vital that you recognize this fact and do everything possible to keep the odds in your favor.

Don't let false pride or overconfidence overcome your good judgment. ★

LOW & SLOW



ZOOM & BOOM

The average fighter pilot enjoys a soul-searching discussion on low altitude ejection about as much as an extended dissertation on "First Aid for the Belly Wound." Topics that bring to mind the possibility of pain and suffering, especially on a very personal basis, just are not on their list of pleasant thoughts. So for this reason, many pilots are not prepared when they find themselves in critical situations. To illustrate our point we ask you to consider the following:

- You have just made your best "break" to downwind at midfield on an overhead pattern. As you wait for the airspeed to decrease to "gear lowering speed," everything gets quiet! A quick look confirms that

the only thing in the cockpit not unwinding is your heart. You don't have a chance of bending it around to the runway. What's your next move?

Now if you think every pilot has an immediate answer to this question, you're wrong. We lose pilots every year because they hesitate or commit themselves to fruitless attempts to save the aircraft. The best way to insure this group doesn't include you is to preplan your actions. In the situation above, there are only two options: eject, or attempt an airstart. Let's look into each of them.

OPTION ONE — EJECT

The F-106 Flight manual states: "Do not delay ejection below 2,000

feet above the terrain in futile attempts to start the engine or for any other reasons that may commit you to an unsafe ejection or a marginal flameout landing."

We agree with this statement wholeheartedly; in fact, our thinking runs something like this:

- If you are at traffic pattern altitude, you are already below safe ejection altitude. Any delay only makes your situation worse.

- The majority of flameouts are caused by either a mechanical failure or a fuel interruption. If it's a mechanical failure, it probably won't ever start. If it's a fuel interruption, it may take up to four minutes to start. From below 2,000 feet (minimum ejection altitude) you have less than 20 seconds at

airstart airspeed (250 kts) before you hit the ground. Therefore, in our thinking, the majority of all airstart attempts below 2,000 feet are *futile*.

• The only “other reason that may commit you to an unsafe ejection or a marginal flameout landing,” that we could think of, was to protect a housing area or hospital. And even in this case, we are not advocating that you stay with the aircraft. That’s your decision! But all other reasons **JUST AIN’T GOOD ENOUGH!**

From this it should be obvious that ejection, in this situation, is our choice. But how are you going to eject?

If your plan is to “grab the handles and exit” — it’s a good one — if you do this high enough above the ground and without too much sink rate. Let’s see how you do.

Altitude (Traffic pattern)	1,500 ft
Airspeed	280 kts
Attitude	0° pitch, 0° bank
Altitude gained	
(seat boost)	256 ft
Full chute altitude	
(4.1 sec)	1756 ft

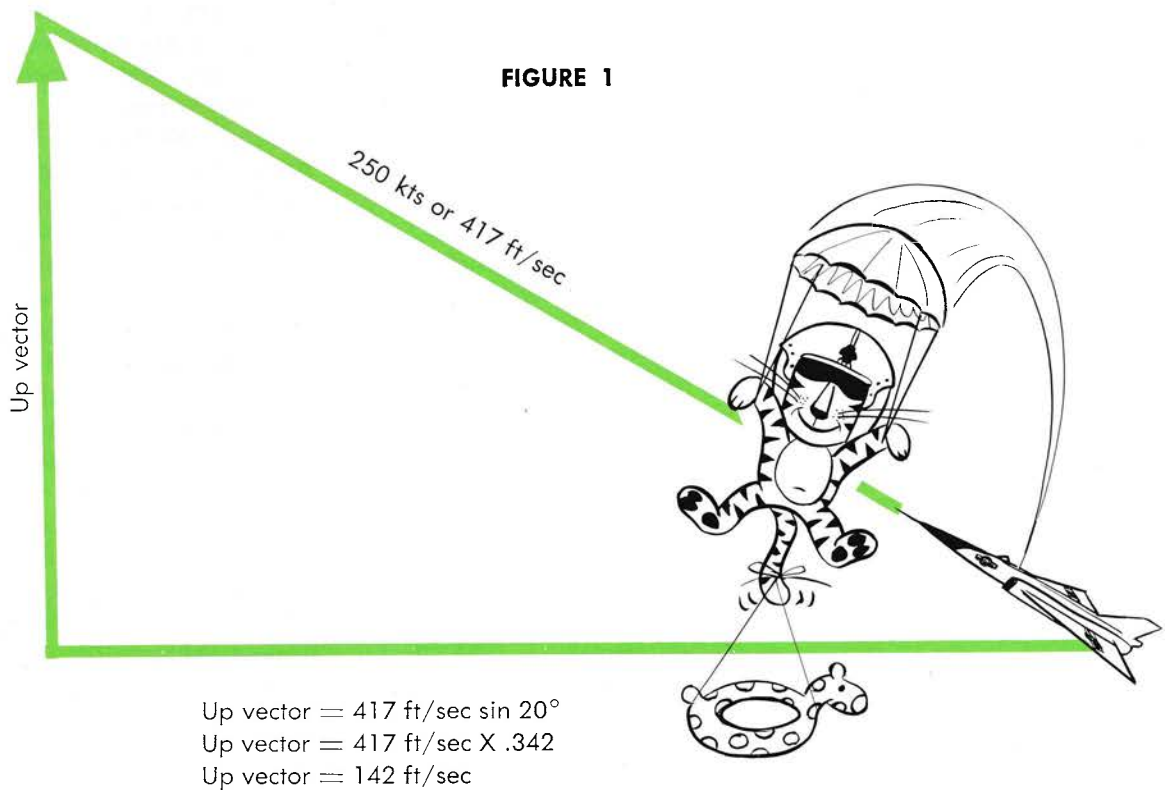
That was a good plan, but not the best plan. You had a lot more going for you — but you didn’t use it. What if everything didn’t go as advertised: you didn’t separate cleanly from the seat; you got a few twists in your chute risers; your survival kit doesn’t deploy automatically? If anything goes wrong, you will need all the time you can get, and here’s how to get it.

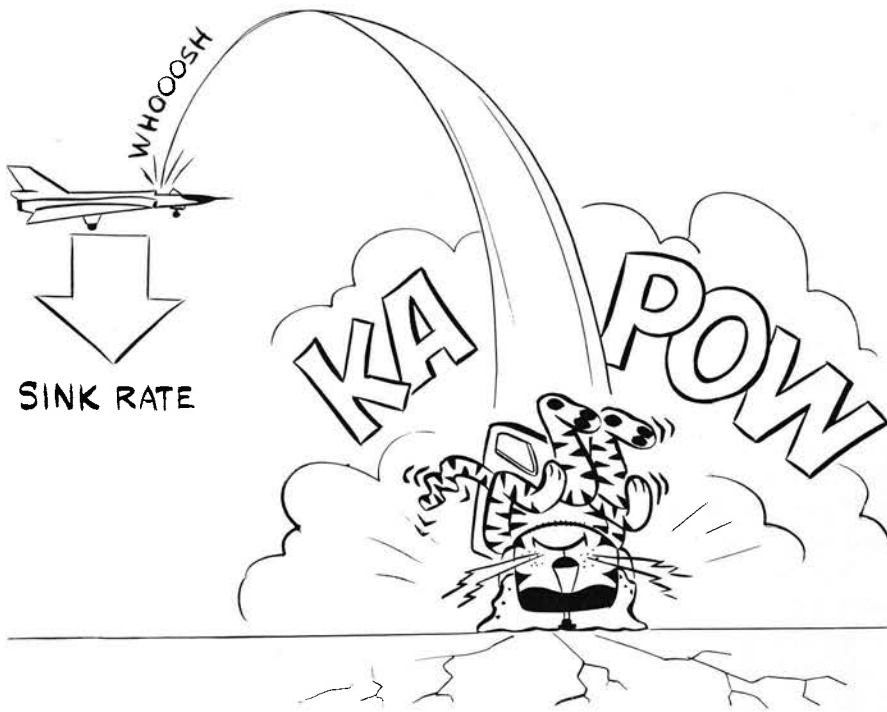
Just before you go, pull back on the stick, trim, and set up a zoom — 10° to 30° will do nicely — and then eject. Notice we didn’t say zoom for altitude. Simply rotate to

a positive rate of climb, trim so that the nose won’t fall while you’re lifting the handles, and exit. Let’s see how you do with a 20° zoom: (Note: to get an actual 20° zoom, you will have to indicate approximately 30° on the attitude indicator because the angle of attack must be subtracted. Actual angle = pitch angle - angle of attack. However, any positive rate of climb will help.)

Altitude (Traffic pattern)	1,500 ft
Airspeed	approximately 250 kts
Attitude	+20° pitch, 0° bank
Altitude gained	
(seat + up vector)	930 ft
Full chute altitude	2430 ft

When you rotate to a zoom, your airspeed decreases, but the pilot/ejection seat trajectory becomes more vertical, and you pick up an “up vector” or nearly 140 feet/second. (Figure 1.)





We have decided immediate ejection is a good plan and zooming for an “up vector” before ejecting is a better one, but what about the other option?

OPTION TWO — AIRSTART ATTEMPT

Perhaps you’re the guy who hesitates or thinks he owes the bird one or two good tries before he exits. If you are, what we have written above won’t have much effect on you. There are a few pilots

each year that seem committed to this option. If you are one of this group, consider some more of our thinking.

- If the engine grinds down or if the fire light is on, an airstart attempt may cause the aircraft to explode.

- If the AC power fails and the hydraulic fail lights are on, the chances are good that you have an engine accessory drive failure and you’ll never get a start.

FIGURE 2

TIME AFTER EJECTION	RATE OF DESCENT	ALTITUDE
0	—100 ft/sec	400 ft
.5 sec (rocket burnout)	— 2.18 ft/sec	387 ft
1.5 sec (man/seat separation)	— 34.15 ft/sec	369 ft
2.5 sec	— 64.43 ft/sec	320 ft
3.5 sec	— 91.90 ft/sec	241 ft
4.1 sec (full chute)	—106.68 ft/sec	182 ft
5.0 sec (if no chute)	—126.13 ft/sec	70 ft
5.5 sec (if no chute)	—135.34 ft/sec	0

- If your rpm has dropped to below idle, forget the airstart. It will never recover in time.

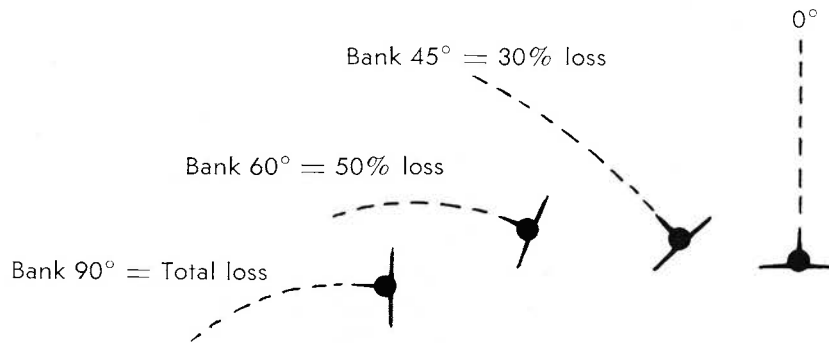
You’re still not convinced? Let’s look at what usually happens:

When the engine quits, there is, of course, a degree of cockpit confusion, panic, and indecision. This is true in every case, including the ones we’ve mentioned above. While the pilot looks around the cockpit to determine the problem, he eases back on the stick to maintain the precious altitude he has left. He needs time. Time to flip switches, time to wait for a result, time to decide the engine isn’t going to start, and time to get out. But as he pulls back on the stick, the angle of attack increases, the induced drag greatly increases, and the airspeed decreases rapidly. In a few short seconds, the airspeed is below that required for an airstart, the aircraft is near a stall, and the nose is pointed up while he’s sinking rapidly. He realizes he must descend to keep flying airspeed, but when he dumps the nose, he only maintains his already low airspeed and increases his sink rate. His vertical velocity falls immediately to over 6,000 ft/min. If he now pulls back on the stick, the aircraft will stall and continue to sink.

Let’s say our pilot gets lucky, realizes his situation, and decides to leave the aircraft at 700 feet. We’ll give him three seconds to make up his mind, get into position, and get up the rails — that’s pretty fast! But 6,000 ft/min is 100 ft/sec and he leaves the aircraft at 400 feet. His rocket seat works as advertised, but it only decreases his rate of descent. With a force-deployed chute he needs 4.1 seconds; let’s see how he does: (Figure 2.)

Okay, if everything works perfectly, he gets a chute at 182 feet. But if he hesitates 1.4 seconds longer, he’s dead. In this problem

FIGURE 3



we assumed 0° of bank. What if he stalls the aircraft and it rolls off on a wing? With almost any angle of bank, he loses effective upward vector of the seat — and his life. (Figure 3.)

Obviously we don't think too much of this option; but if you're the guy that's going to try it anyway, we have a suggestion for you. The only way that you can possibly have time for an airstart and still have a chance for survival is to maintain **ZOOM POTENTIAL**.

Here's how it works:

To keep zoom potential, you must maintain airspeed. How do you maintain airspeed? You descend. We know you can't do this very long, but we can compute the time. Let's say, after the panic, our airspeed is down to 250 kts, but we want to keep it. At most landing weights an F-106 will maintain this speed with a 5000 ft/min descent or about 83 ft/sec. From 1500 feet

that gives you 18 seconds before you reach the ground. And during this time, you are looking down at the trees — not up into the sky. You won't need the altimeter to tell you you are getting close!

Now you realize you can't use all 18 seconds, so save 5 seconds for a zoom maneuver. That gives you 13 seconds to use any way you want. If you don't use all the 13 seconds, you improve your chances of survival. But you can use all of this time and still have a chance — IF you zoom and boom. Notice we didn't say zoom for altitude. You're in enough trouble already; don't compound the problem by trying to milk altitude out of a slow airplane. This leads to a stall and sink rates that you might not even notice. Zoom for a positive rate of climb, trim, and leave. While you've groping for the handles, you'll be going up, not down. (Figure 4)

FIGURE 4

13 sec (of descent) X 83 ft/sec = 1080 feet (lost)
 1500 ft — 1080 ft = 420 (ejection altitude)
 Airspeed now approximately 200 kts
 Attitude 20° pitch, 0° bank
 Altitude gained (seat + up vector) = 256 ft. + 114 ft/sec (4.1 sec)
 = 723 ft gained
 Full chute altitude = 420 ft + 723 ft = 1143 ft

You may not get to 1143 feet! If you don't get to a 20° zoom or if you "ham fist" the aircraft to below 200 kts, you're not going that high. But, if you can balloon an F-106 during a flameout pattern with the gear down — and you most definitely can — then you can rotate to a positive rate of climb from a 250 kts dive — and get a full chute above ejection altitude.

SUMMARY:

The point of this article, if you have lost it in all the figures, is that each pilot should preplan for situations that require fast actions. To help you, we have pointed out a few facts — the way we see them. We have quoted a few figures from physics and a computer run on the F-106 ejection seat. The computer was static, an airplane isn't, but the small errors in our computations won't kill you — sink rates will.

This discussion does not apply if you are at 450 kts and 50 feet. In that case, zoom up two or three thousand feet while you think about it. But if you are:

LOW AND SLOW

1. Zoom for an up vector, trim, and eject.
2. Never trade airspeed to merely maintain altitude. This leads to sink rate.
3. If you have enough airspeed and control to round out — you are still inside the ejection envelope. But the closer you get to the ground, the less your chance of survival.
4. Sink rate is the greatest single threat in low and slow ejections.

Although this article was written for the F-106, the principles presented on up vector, zooms, and sink rates apply to all ejection seat aircraft. Think about them — they may save your life. ★

Our thanks to Captain Ron Diggs, SAAMA, for his aid in the computations.

it's all in your mind



by **LT COLONEL GARLAND H. SPICER, JR.**
4 WW, Ent AFB, Colorado

The job I had in the Year One BBC (Before Back to the Cockpit) was with Seventh Weather Wing at Scott AFB. At the time, Seventh Wing counted the Military Weather Warning Center at Kansas City among its prized possessions. When MWWC's Colonel Bob Miller revised the manual covering their forecast techniques and our Scientific Services types wanted to test it on a relative dullard, they naturally gravitated to me. (Rationale: If *he* seems to understand it, then any pilot will be privy to our secrets and we'll have to double the fog count.) Being much flattered by their attention, I glossed over my lack of rapport with the intellectual content and plunged in.

Well Bless Bess, didn't I find a ding dong bell ringer right there on page one! As I recall it, Bob had briefly described two sets of meteorological (big word for weather) conditions favorable for tornado development. He then went on something like this, "Unfortunately, these two conditions rarely occur at the same time."! Obviously we wasted little time in pointing out that the rest of the country was howsomever relieved to know they didn't.

A few days ago, in response to a suggestion from the Boss, I finally made the pilgrimage to the Air Force Global Weather Central at Offutt AFB. (There is, here, a sort of analogy to the dying elephant seeking out the graveyard — the old

weather man in his waning years finally visiting what is fast becoming the repository of all forecasting knowledge.) Enscenced in the middle of the whole works was Bob Miller, having recently moved his operation into the GWC (dast I suggest he occupies the same chair as at Kansas City?). Taking a nearby seat, with great anticipation I awaited the final brilliant culmination of the rising crescendo of activity as banks of sophisticated communications gear strained to satisfy the voracious appetites of a trio of monster computers which spewed forth an endless stream of thoroughly digested material into the eager hands of a whole phalanx of PhDs. Just then Bob spoke a dozen

unintelligible words to a coworker (who nodded sagely), examined a few teletype reports and a chart full of multicolored squiggles, briefly consulted a small yellow paper-backed book retrieved from a drawer, and intoned, "Two inches of snow in the next 12 hours over Nebraska, South Dakota, Iowa, and Eastern Wyoming."

SMALL YELLOW PAPER-BACKED BOOK !!! Five hundred people and five million bucks to play with and those sneaky soothsayers are stealing their stuff from The Old Farmer's Almanac (forty-five cents at your local BX)! Talk about shattered faith — O Tempora! O Mores! Back here at the Springs I checked *my* copy of that magical little manual, from which I quote: "Rocky Mountain-Central Plains Region, Verification Base, Omaha Neb (airport), Feb. 4-7, snow, two inches." It's on page 88 if you want to check it yourself.

In all seriousness, with computers handling the fantastic masses of pick and shovel work, some of the things the boys at Global are doing are little short of amazing. We'll be hearing more from them as austerity accelerates the existing trend toward centralized forecasting.

Anyhow, in the course of some small talk about improvements in severe weather forecasting made possible by the greater data base available at Offutt, I asked Bob if he remembered the incident from Seventh Wing days. He did, and allowed as how he was required to change that part (remove the "un" from "unfortunately," I suppose). Recalling that incident, and being on the hook for a spring weather article (it's hard to withstand INTERCEPTORS flattery) it occurred to me that something could be made of one's point of view in looking at the weather.

Colonel Miller (or Mr. Miller, now retired from the Air Force but not from the job) certainly indicated a vastly different viewpoint from the rest of the world, but a little background should explain why. As my increasingly imperfect memory has it, back in the late forties Bob was inconvenienced by a tornado which intruded upon Tinker AFB while he was a forecaster there. This made him somewhat unhappy and he's been busy getting back at tornadoes and other severe weather ever since. The upshot is that Bob must be credited with a good deal of the responsibility for the capability we now have to forecast tornadoes and severe thunderstorms, which is pretty darn good considering the size and the life cycle of the average event. When he said "unfortunately," Bob was thinking in terms of the increased forecast accuracy made possible by the additional clues, not of the greater number of tornadoes which might occur.

One can be tripped up by his own viewpoint, as I found out to my everlasting edification about 20 years ago. At the time I was working in the weather station at Westover which was then a MAC (MATS) base and APOE. As a support type, I was getting much of my flying time taking C-54s to Dallas for overhaul. The trip was a good time builder, we got to ride home on DC-6s (the hottest transport around), and the bird watching was superb out in front of the Adolphus. About 2200 one spring evening we lumbered off into the murk, knowing that we would encounter a cold front somewhere over Arkansas. Drawing upon my vast experience (18 months) as a working forecaster, I had concluded that the front offered no great problem. As a *rated* forecaster, my viewpoint was altered somewhat by the knowledge that forecasts occasion-

ally go awry. In this instance, however, such an event could be effectively countered by a simple (though often ignored) maneuver known as the "180." As a slick wing pilot with a fulltime ground job, the old viewpoint got further bent by the crying need to grab the flying time when and where possible — those were also austere days.

About two in the morning as we passed Memphis we could see lightning ahead, so we amended our routing toward what looked like a less terrifying area. The wisdom of this move shortly became open to question, so we reversed course and hightailed it for Memphis Muni. Meanwhile, an increasing southerly flow ahead of the front had brought low stratus into the Memphis area, requiring an instrument approach. That extra few minutes was all it took. Just as we came out of the procedure turn inbound, the roof fell in. Ever wondered what it was like inside an automatic washer? The range signal disappeared in the static and the ADF needle started practicing continuous 360° steep turns. Lacking any better idea at the moment, we proceeded inbound on heading and time, never seeing anything but flat black frequently punctuated by stark white. (There was no question about keeping track of times; you couldn't fly the approach otherwise. Anyone who has never forgotten to hack the missed approach time as backup on an instrument check is excused from reading the rest of this article.)

We called missed approach, and the gist of what came back was "Memphis range is out of service. Climb to 7000 on the northeast leg and report reaching"!!! We struck off in that general direction and upon reporting seven were asked if we had ILS. That was the time when ILS was a dirty word in the Air Force. We had one of those

yellow and blue Gizmos on the dash, but a hurried check through the old facility chart revealed that the nice "how to" page had been deleted (no requirement, I suppose). Talk about a classic case of false pride. There I was, in danger of getting thrown out of the sky before I could get on the ground, and would you believe I was reluctant to ask which side of the ILS was which? That dilemma was eliminated by a beautiful voice out of the blue (make that black) which said, "MATS 4321 this is Navy Memphis GCA. Can we help you?"

Could they help me? Friends, that was just about as close as I have ever come to being addressed directly from On High. GCA was able to work us even though it took three tries, after losing the precision scope on the first two. Ultimately we were one mile on final with the field alleged to be dead ahead. Peering through the wipers in the early morning light (it was now about five o'clock) all we could see was a confounded lake! Just in time to forestall cardiac arrest, we realized that Navy Memphis was one of those all pavement jobs with a couple of inches of rainwater standing around, and we were able to pick out the runway and land safely (a safe landing is one you can . . .).

I don't know whether the Navy counts saves as does AFCS, but for our money they sure got credit that morning. Also after more than two hours of sheer terror, I had gained an everlasting respect for the old C-54. It was a sturdy bird and one heck of a good instrument airplane. All the while, a variety of inputs had been forcing an automatic update of my viewpoint. Once we finished heaving sighs of relief and had properly discussed the dubious ancestry of the conditions from which we had miraculously escaped,

I concluded I shoulda stayed in bed. In attempting to finger a scapegoat I very shortly found myself staring cross-eyed at the end of my own pinky. Having sold myself a bill of goods, I was forced to admit that I had promptly been hoist by my own petard. For those of you who think we should have (1) turned around sooner, or (2) kept on going, I can only say, "Vas you dere, Sharlie?"

One man's meat is another man's poison. If the slide rule boys say your ILS equipment is 98% reliable, that makes it 100% suspect at RVR 2400. If Stormy gives you an 87% probability of hacking the mission, then, brother, you'd better have a firm alternate plan and use it when you get caught by the other 13%. Everybody up and down the line is sincerely interested in having you come home safe and sound. What MAJCOM doesn't have a reg which says, "The peacetime mission of this command does not require you to go off stupidly blundering into thunderstorms getting yourself killed and busting up our airplanes in the process."? But day in, day out, other concerns just naturally tend to get the attention.

The big man worries about flying hours, knowing full well that what he doesn't use this year he'll lose next year. The folks over at division want those training exercises to see if the computer is getting forgetful in its old age or do the darkroom boys need new spectacles. (I once flew with a navigator who used a pair of 8X40 binoculars to do pilotage in the Gooney Bird. When his vision got a little worse, they made him a weapons controller. Honest. Hey, where are you, Sully?) The squadron commander is thinking about his OER index and the next colonel's list. Maintenance wants everything just like the quarterly schedules so all the

periodics come out just right. Ops sure loves to see those training squares filled. The crew chief hopes you get stuck on the other side of creation for a week and transient alert clears all those delayed discrepancies. Transient alert wishes the runway would go zero-zero and stay there for twenty years. The old lady wants you home right now because number one kid broke his arm, the washing machine quit with a load of the baby's dirties, the car battery blew up and the acid is eating through the hood, and the last check she wrote at the commissary just bounced.

And old Foggy — he's Special Category. To begin with, if you see a pair of wings there amongst the fax charts and teletype paper, you are looking at one of MPC's mistakes, and they say they don't make any (well, hardly any). The rated, working forecaster is about as rare as the passenger pigeon and is unlikely to make a comeback any time soon. No matter how hard he tries, the forecaster can't see it through your eyes. There just isn't any substitute for having been nose to nose with it from the business end of the machine while your hands are full of sticks, throttles, channel selectors, and mike buttons. Like the blind men checking the elephant, Weather's viewpoint is more than likely different from and even contrary to yours.

Further, with the premium now being placed on manpower, fewer forecasters are going to be covering more territory and more of your encounters will be phone to phone rather than face to face. While a tough terminal forecast waits impatiently in the wings and weather warnings insist on being checked and transmitted, with some poor iced-up soul pleading on PFSV for a safer and saner altitude and you glowering across the counter filling

his face with El Ropo fumes, old Foggy is just that, foggy. His ability to hack the program is pushing the red line, and it just may not be possible to give you the individualized and undivided attention that you need.

His viewpoint is rapidly getting focused on the door through which his unsuspecting relief should shortly appear. This, finally, is when you have to break lock on that cute WAF dispatcher and concentrate on helping the forecaster help you. Recognize that some things, like the fellow who is already airborne, have to be given priority. When he gets to you, listen carefully so he doesn't have to repeat; then, if anything is still unclear, ask questions. Run a little mental check. Has he covered weather advisories and equated forecast events to recent developments as indicated in radar reports, cloud analyses, and the like? Did he tailor the advisory discussion to fit your particular aircraft route, altitude, and time? Did you discuss possible diversions to avoid the more hazardous weather? Did he let you con him into an alternate across town from homeplate? In other words, make him help you develop the viewpoint you need for a safe flight — it's your neck! Redouble your efforts if you're filling out your 175-1 by phone. When all else fails, invite him to make the trip with you.

Everybody who has an interest in your flight (including you) has a point of view potentially inimical to your health if allowed to influence unduly your reaction to the weather, forecast or observed. You, however, are the gent with whom the buck stops and who must place all those viewpoints in their perspective. It might help to remember upon whose headstone will be chiseled that immortal epitaph which begins "Pilot factor in that

he" So, next time you're in Basops in the middle of a blizzard preparing for that mission which has just got to go and Weather laughs uproariously and does a buck and wing while he cheerfully informs you that destination has gone from absolutely impossible to utterly unbelievable and in between is even worse, don't take it personally. He's not laughing at your discomfiture. What it was, was the first time his forecast has verified right down the line since he got out of school. Show me a forecaster who claims THAT won't influence his point of view and I'll show you one who prevaricates about other things besides the weather.

EPILOGUE

If you think that the emphasis on thunderstorms was more than coincidental, you are correct. With winter and summer fighting it out, we are suddenly in the season of the big bangers, just when we had got used to not having them around.

Back in the late forties, the Air Force participated in an extensive investigation of thunderstorms over Ohio and Florida, using the P-61 for the airborne observations. The otherwise excellent published report had one unintended but unfortunate result: the dispassionate approach so necessary to an unbiased scientific discussion led to some complacency on the part of pilots and forecasters with respect to the degree of hazard presented by the thunderstorm. In retrospect, I think we can conclude that airplanes have ever been correcting this misconception by falling out of the sky in pieces with distressing frequency.

Even as the thunderstorm and its related phenomena have forced a greater respect on our part, we have increased manifold our ability to forecast, observe, and avoid these phenomena. Consider the vir-

tually complete coverage of the country by ground based weather radar, the nationwide extent of radar traffic control, the advisories prepared by Mr. Miller's group and their National Weather Service counterparts. (Notice I didn't even mention airborne radar.) Still, the one in a hundred that can kill you is there just like always, and we are a long way from 100% assurance that the one you blunder into won't be *The One*.

The danger is still there, but proper use of all the aids we now have makes it that much easier to stay out of trouble. Ten years ago while homeward bound in the old Goon on a beautiful sunny afternoon, we were given an advisory (based on MWWC's output) for severe storms in the area at arrival time. After grouching among ourselves the required amount, we turned around and spent another night at our TDY point. This same front literally drove an airliner into the ground when it tried to take off at an unpropitious moment during the storm. Within the last year I respectfully declined to start an 8 hour flight home after an already tiring day in the face of a severe weather forecast for a night arrival. The earlier suggestions concerning the color of my backbone were strangely silent after the area was hit by hail, heavy rains, flooding, and sixty knot winds. There's no need to quit altogether every time a thunderstorm is around, but we should always give careful consideration to the possible effects of severe weather on a safe and successful mission.

POSTSCRIPT

And keep those pilot reports coming in, folks, they're being used more than ever. Did you know that GWC feeds them into their infernal machines to help make those three-dimensional cloud cover forecasts?

A Tragedy of

"Airs"



by

MAJOR FREDERIC M. BROWN, USAF MC

ADC/SG

When flight surgeon turns playwright, a drama evolves that may leave you breathless.

Who gets hypoxia nowadays? The last time most of us had it was during our last altitude chamber ride. Remember how they'd set the chamber altitude at about 25,000 feet and made every other one of us take off our masks and write our names on a clipboard? I was having a great time just writing away, but I guess I was turning a light blue and my chamber partner got worried and

put my mask back on. After reading what I wrote, it was apparent that I had hypoxia. But no one gets hypoxic in airplanes anymore . . . well, almost no one. With today's pressurized cockpits and reliable oxygen systems, a pilot getting hypoxic is about as unusual as transient alert parking him in front of base ops. The guesswork of the old pipe-stem oxygen days is gone for-

ever. Isn't it?

Yet each year we still get a few cases of hypoxia. Why? Well, except for a few rare cases of a breakdown in the oxygen system itself, most of the hypoxia cases are due to a breakdown in the pilot's oxygen discipline.

Recently, a pilot suffered from hypoxia and was lucky. He realized his symptoms while he still had time to recover and land safely. This

pilot realized how fortunate he was and was man enough to admit his mistake and to recount his adventure so that the rest of us who haven't yet been taught like he was might benefit. Read what he says and maybe you won't experience an "attention-getter" like he did—or worse.

"I proceeded out to the aircraft, made the normal preflight and start. I always turn the oxygen system on and check it just prior to calling for clearance, whereby I check the quantity, pressure, and put the mask to my face to insure positive flow of oxygen. The system indicated 4 liters and 80 psi. I then unhooked my mask, turned the oxygen off, taxied to the active, took off, and started to climb to FL 240. At FL 180 I reset the altimeter, made a required call to (deleted) Center, turned my oxygen system on, and hooked up my mask. I was unable to inhale with the mask on, and a check of the liters and pressure indicated the system was depleted — both were at zero.

"I took the mask off, recycled the switch, checked my connection, but the results were the same. A check indicated cabin pressurization functioning properly for that altitude.

"The mission was briefed to be a quick front (attack) at altitude with a descent to the low altitude range. Taking into account our practice ORI rules (aircraft would have to be flown again if no attempt on the high [attack] was accomplished) and that it would be a quickie on the high, I elected not to abort, but to press on — on the cabin altimeter.

"When I arrived at altitude (Ed. Note: 35M), two other aircraft were being vectored for a setup. I loitered while they completed their intercept and then became target for the preceding target. Finally I was descended to 30M for my intercept attempt.

"At approximately 20 miles out on the intercept I was given a turn from 270° to 300°. When I rolled out I realized I was leading 360°. I then turned back left to correct my heading error and realized I was inverted. From this point on, I cannot be sure in my own mind as to the actual sequence of events and my actions. I had the sensation of being asleep, awakening to the situation, sleeping, and awakening again. I remember thinking I had to get down and pulling the throttle to idle, extending the speed brakes, pulling the emergency bailout bottle, and attempting to call GCI for an emergency letdown while squawking emergency. After that I vaguely remember trying to hold the stick forward and hold my oxygen mask to my face. First recollections of cockpit instruments was seeing a '5' or '6' on the altimeter and wondering if it indicated 5 or 6 thousand, 15 or 16 thousand, or what altitude. At between 8 and 10 thousand feet I had recovered enough to fly the aircraft and try to determine where I was. Direction to home plate was ascertained and a recovery started at 6 thousand as a fellow pilot joined on my wing. Recovery was made with no further problems."

Is that hairy enough for you?

On a recent fact-finding junket with those stalwarts from the INTERCEPTOR staff, we stopped by one of our newer Fighter Squadrons — the famed 320th FIS. In case you haven't heard of the 320th, they were founded to augment the 319th FIS (We Get Ours at Night). The motto of the 320th is "Nihil Obtinemus" (We Ain't Gettin' Any). There was a big meeting in the Commander's office when we got there and there was little doubt that there was something important in the air. Sensing a scoop, the editor ordered his assistant editor into the ladies' room next to the Command-

er's office and told him to get his ear to the wall while he (the editor) regaled the Squadron Commander's secretary with tales of derring-do about winter-time flying at Loring. I could hear some of the conversation and together with the assistant editor, we put together this scenario.

CHARACTERS

Lt Colonel Val Kriterian, Chief of Stan/Eval
Maj U. (NMI) Topia, Flying Safety Officer
Capt Ripling (named for Kudyard Ripling) Cord, Life Support Officer
Capt "Doc" (isn't that clever) Koldfinger, Flight Surgeon
Lt Elroy A. "Slick" Whyng is the recorder
Lt Colonel Ness T. Knitpicker, an IG representative, wasn't invited but was present anyway
Scene: The office of Colonel Will Byet, Commander of the 320th FIS. He has just heard about the latest oxygen incident that had happened in his squadron and has called together his expert staff.

CURTAIN

Col Byet (struggling to maintain his cool).

Gentlemen, this last incident almost cost me a trip to you-know-where to answer to you-know-who. I would not like this. I have not had to practice my "Headquarters rug dance" in a long time and I am quite rusty.

I would like to keep it that way. Lt Colonel Knitpicker (jumping up eagerly, elbowing through Kriterian and Topia and knocking curdled coffee over Col Byet's "Coolstone" desk blotter). Sir, it's obvious. This was a gross violation of (he genuflects deeply) AFM 60-16, paragraph 6-5b as further explained in AFM 60-16 Table 1 and AFM 60-16/ADC Supplement 1 paragraph 6-5b(1). This is a major discrepancy and must

be answered in accordance with AFR 123-1 as supplemented. What more is there to say? (He skips back to his place and curtseys prettily.)

Col Byet. Sheesh!!! (He raises his eyes toward heaven in a manner as if to say "Why can't those IG types do anything without constantly referring to regs and manuals. I'll bet their love life is something to behold.)

Maj U. Topia. He's right, sir! But there are much more far-reaching implications. This incident could have knocked us out of the "Top of the Heap" list. It would have increased the accident rate to about 6.2 overall, and about 15.6 for the F-102. Furthermore we are out of 711 forms. As it is, I have to figure out a way to tell higher headquarters about this without looking too bad.

Lt Colonel Kriterian (his voice cracking). If? Could have? . . . this jock blew it! He was my best man. He's a Master of Air Defense. He got an H. Q. on his last stan/eval. In fact, his last proficiency check report could fly by itself. Division even picked him as an F. E. to eventually replace me. How do you think this will look?

Colonel Byet. OK—we're in trouble. I knew that before we started talking. What are we going to do about it?

Maj U. Topia. We must come up with a fix that will preclude a recurrence. We could brief all aircrews on the details of this incident.

Lt Whyng. *That* sounds familiar!

Colonel Byet. What was that, Lieutenant?

Lt Whyng. Nothing, sir.

Doc Koldfinger. I don't understand it. I just gave the whole squadron a briefing on aviation physiology. I talked about vertigo, spatial dis-

orientation, and flying with a cold. Colonel Byet. Hey, Doc, this was hypoxia.

Doc Koldfinger. Oh yeh — that's right—But he should have gotten all the hypoxia poop during his last chamber ride. Why did he run out of oxygen?

Capt Rip Cord. His P.E. worked fine. The mask and hose were OK. The regulator bench checked. The entire oxygen system was fine —no leaks.

Lt Colonel Knitpicker. That's all well and good, but he violated 60-16 by taking off his mask and then by flying above 10,000 feet without available oxygen. That's flagrant.

Colonel Byet. Oh come off it, Colonel! Even you can't fly an aircraft today without violating some reg. Hell, during the war when I flew with the ole 8th, we used to suck on the pipe stem whenever we thought we needed oxygen. We didn't have any pressurization and commonly flew at 15-18 thousand feet. I used to blow the oxygen through my cigar at the copilot. Boy! That sure got his attention. You know we all take our masks off from time to time — no sweat.

Lt Colonel Kriterian. That's right, sir. Unofficially — the mask is a nuisance. Besides that, all that oxygen gives us an ear block later — on the ground. Nobody wears it all the time.

Capt Cord. That's an inherent problem with a 100% continuous flow oxygen system. If you are wearing the mask, you get 100% oxygen — under some pressure, too. That causes ear blocks. Isn't that right, Doc?

Doc Koldfinger (who had been counting the days till his separation). Huh! I missed the question.

Lt Whyng. Excuse me, sir.

Colonel Byet. Go ahead, Lieutenant.

Lt Whyng. Begging your pardon, sir. But I have to disagree with much of the content and direction of this discussion. Granted, I don't have your flying experience. But I don't dare violate any flight regs. I can't fall back on experience to explain it. I admit I feel pretty restricted when I fly. Especially when I talk to the old heads who tell me "how it used to be" in the good old days. Somehow I am still able to fly with these restrictions, and I can accomplish the mission. I guess I have not had enough experience to be able to decide which regs I can violate and get away with it.

Lt Colonel Kriterian. That's OK, Lieutenant. After all, the regs were made for the inexperienced or the weak pilot — no offense, Colonel Knitpicker.

Lt Whyng. Excuse me, sir. That may be true. But I found that most of them make sense. For example, AFM 60-16. (Lt Colonel Knitpicker faces toward San Bernardino and bows.) It says that you shouldn't fly above 10,000 feet without available oxygen. If I remember right, you can start getting mild hypoxia symptoms with a cabin pressure as low as 5,000 feet. That's the reason for using oxygen for night take-offs and landings. Right, Doc?

Doc Koldfinger. That's right. Decreased night vision is one of the first noticeable signs of early hypoxia. And remember that the ADC Supplement to 60-16 says that all those flying ejection-seat aircraft will be on oxygen from takeoff until landing.

Lt Whyng. Even if my cabin pressure is below 10,000 feet, I can think of all kinds of reasons for keeping the mask on for the entire flight. If I get problems in the cockpit, I don't want to have to

fool with the mask, too. If I get a rapid decompression, I'll need the mask to stay conscious and to communicate my problem. I'll probably need two hands to control the airplane. I don't want to have to hook up the mask, too. I'd have my hands full. Besides that, the pilot in this incident knew he was out of oxygen when he was at Flight Level 180. If his cabin pressure was good, it should have been about 10,000 feet. From there on up, the cabin pressure will drop. If he peaked out at 35,000 feet, his cabin pressure should have been about 14,500 feet. That's getting pretty thin. I understand his was actually 17,500 feet. Without supplemental oxygen, he should have had symptoms. Right, Doc?

Doc Koldfinger. That's right. Anyone could expect serious hypoxia symptoms at that cabin altitude without oxygen. It would only take a few minutes. He could expect cloudy thinking, marked dimming of vision, and even a "don't care" attitude. Say — this pilot was pretty lucky. He really was asking for trouble. Actually, it's quite amazing that he was able to recover the aircraft in time.

Lt Colonel Kriterian. OK, but what about those ear blocks after breathing all that 100% oxygen? They're pretty annoying. You wake up in the middle of the night with an ear that is sore as hell.

Lt Whyng (thinking, "That's probably the *only* reason you'd wake up in the middle of the night.") That's right, sir. But is an annoyance on the ground worth putting yourself in a dangerous position in the air? Not for me. Besides that, I can avoid those delayed ear blocks by clearing my ears with a Valsalva maneuver several times after I fly. I don't think taking off the mask routine in

flight will do any good, anyway. Right, Doc?

Doc Koldfinger. You're right! The delayed ear block is due to replacing the air in the middle ear chamber with oxygen. After you stop breathing 100% oxygen, the blood stream absorbs the oxygen and creates a partial vacuum in the middle ear. This is an ear block and can be painful. If one goes to bed right after a flight, he can expect to be awakened during the night with a painful ear. The way to avoid it is to perform a forceful Valsalva maneuver several times during the first few post-flight hours. Don't go to bed immediately. The repeated Valsalva maneuvers eventually replace 100% oxygen with normal air, but it takes several such maneuvers to do so. Taking your mask off during the flight won't even theoretically help.

Lt Colonel Kriterian: Are you sure about that, Doc?

Doc Koldfinger. Absolutely! Periodically removing the mask in flight does no good for the prevention of delayed ear blocks. By the way, if these delayed ear blocks are more than an occasional annoyance, you may have a real ear problem. Several conditions can compromise the ability to ventilate the middle ear. They may not be bad enough to cause problems during the usual pressure changes in flight, but could make one more susceptible to delayed ear blocks. These conditions are usually minor in nature and easy to fix.

Colonel Byet. Thanks, Doc. By jingo (the Colonel had been making a concerted effort to clean up his language), I sure misunderstood that. Then taking your mask off during flight makes no sense at all.

Doc Koldfinger. Colonel, there are times when you have to take off

your mask in flight. Such problems as a real ear block, a mask full of sweat, or, as in my case, when I barf. But these instances only require mask removal for very short periods — seconds.

Colonel Byet. Right. I forgot about that. This incident was really quite inexcusable. That pilot was really taking a chance.

Lt Colonel Knitpicker. He sure was. That's why we have regs.

Lt Whyng. (Wishing he could cram a copy of AFM 60-16 down Lt Colonel Knitpicker's throat while saving the supplements for Kriterian.) *He* was taking a chance? *He* was violating regs? What's with this "he" stuff? How about "we"? It seems to me that all of us lack some knowledge of our own physiology. Why have we been taking chances which make no sense? Maybe all of us had better get with the doc more often. Maybe there are some other stupid practices that are occurring "unofficially." ★

Ed. Note: This article, with its humor, was not meant to dispel the seriousness of the subject. Regulations are written after the necessary guidelines to keep you alive and flying. When you break them you jeopardize your life and your machine.





**OPERATIONAL
READINESS
INSPECTION TEAM
HQ, ADC**

ALERT FORCE CAPABILITY TEST

By the time you troops in the barn are reading this, you may have already been tasked to demonstrate your prowess and your aircraft's reliability in another of the command's long list of good deals — an AFCT. For those units yet to be evaluated, we would like to call your attention to ADCM 123-5 (Alert Force Capability Test).

This is not a new concept of inspection for ADC, but one that is sure to be a first of this type for many of our new aircrews in the Command. The most important job we have at this time, in fact the reason for our existence, is to be able to put reliable aircraft in the air with minimum notice, and get a hack or two, if required. The AFCT is designed, through periodic sampling of individual units, to test the capability of fighter squadrons, and selected on duty control elements to accomplish their primary air defense mission.

To start this type inspection, which will be strictly no-notice, the team will arrive by T-39 or T-33s. Implementation will be by a letter hand carried to the inspected unit. During the test, personnel from the ORI team will be present at the MOB, local ground environment control agency, and DOBs where applica-

ble. Aircraft and personnel on alert at the FIS, and on duty ground environment personnel at the control center will be the players.

After a short drill to test reaction time of the aircrews, a time out will be called and all alert aircraft will be downloaded and prepared for flight. No maintenance will be allowed on the alert aircraft. Two AWS verification attempts will be charged to each alert aircraft. Intercepts will be accomplished using standard tactics, and a qualified MSR/WSEM as well as a recorded MA on the film or NADAR is required for an MA. Proper authentication of the launch order between the controlling agency, ADCP and the aircrews is an integral part of this operation, and will be evaluated. After the start of the AFCT, 2 hours will be allowed the unit for evaluator checkout. MIs caused by evaluators will be charged to the unit.

Written examinations are primarily directed to what the alert crews and the ADCP controllers must know to get the aircraft airborne under a scramble situation, authentication procedures, etc. These exams are given to the aircrews, ADCP personnel, and certain ground environment personnel on duty at the time the inspec-



"The commander says not to volunteer you guys any information, so I'm not saying nothing, and not answering any questions, just minding my business, and fixing this here gidget."

tion is initiated.

A weapons handling spot inspection of a selected load crew, in a nuclear equipped unit, may be directed by the AFCT team chief.

We've tried to hit a few of the highlights here of what to expect. Don't wait till base ops calls you an inbound LOPEZ call sign to dig out ADCM 123-5. The rules should be clear to everyone, and practice

AFCTs are encouraged.

Take a little time and become familiar with ADCM 123-5, so you won't be caught short, because one of these days we may just drop in for some gas, a cup of coffee, and a quick look at your alert force capability.

JAMES M. THOMAS, Colonel, USAF
Director, Operational Inspection



✓ POINTS

We would sincerely appreciate your inputs mailed directly to:
The Editor, INTERCEPTOR, Hq ADC (SED), Ent AFB, CO 80912

✓ Two airliners recently played "leap frog" on a runway because one of them misunderstood a radio transmission. The tower advised a DC-8 "Take taxiway right — call on 121.7." The crew answered — you guessed it — "Roger." Then, thinking the tower had said, "Back track if you like, call on 121.7," they made a 180° turn and taxied into the path of a departing 727. The 727 leaped over the DC-8, but tore off eight feet of the taxiing aircraft's tail. It was not reported, but we assume that the DC-8's commander also suffered some damage in that area, later. If this can happen to a cockpit full of civilian pilots, it can happen to a single seat fighter jock or any of the Free World's Finest. This incident, again, points out the importance of good R/T procedures, the most basic of which are:

- Controllers and pilots should use standard phraseology to reduce the possibility of misunderstanding.
- Be suspicious of any unusual clearance.
- Never hesitate to read back a clearance or ask for a repeat if there is any doubt about what was said. Be alert, the tail you save may be your own! (SED)

✓ From our "How'm I gonna explain this one . . ." department, comes this incident. One of our T-bird jocks landed recently sans external tanks. It seems that his passenger was having some trouble finding a place to put his finger, so he placed it on the new red cover to the external stores jettison button. When the aircraft hit a little rough air, the passenger's finger jettisoned the tip tanks. If you are qualified to carry passengers (PCP), you might give your passengers' briefing an "in depth" treatment so you won't be surprised by something you didn't expect to happen. Preflight briefings are easier to give than postflight excuses. (SED)

✓ AFMPC is now handling the quotas for survival schools, so if you missed your first chance to enjoy the "great outdoors," you may get another one. AFR 53-28 requires all Air Force personnel on flying status to attend both the basic (Fairchild) and water (Homestead) survival training courses. If you have attended these courses before (basic at Stead, water at Perrin, Tyndall, etc) you have satisfied the requirement. If you haven't, don't give away your long johns or water wings. (SED)

✓ The U.S. National Advisory Committee for Aeronautics (NACA) conducted a study that showed 90% of lightning strikes on aircraft occurred during flight within 5,000 feet of the freezing level where the air temperatures were between $+10^{\circ}\text{C}$ and -10°C . The frequency falls off rapidly with increasing height above the freezing level, but strikes can occur at any altitude up to the top and even above the cirrus anvil. (AFSC Safety Management Letter)

✓ How far can you go and still return safely? CONUS flying, with an abundance of airfields, does not present this problem in the proper perspective; however, long overwater flights bring into focus the true scope of a safe return. Think for a moment of ditching within sight of land because of dry tanks! How far? Compute the Point of Safe Return (PSR). The PSR is the farthest point along the route to which the aircraft can go and still return safely to the departure point with holding and departure alternate fuel remaining. This computation can be significantly different from the Equal Time Point (ETP), which is defined as the point along the route at which it will take as long to continue to the destination as to return to the departure point. Complete

flight planning should also consider the PSR and ETP with an engine out or loss of aircraft pressurization which may dictate a lower altitude and a different wind factor. Confused? Check AFM 51-40 for formulas and details. (TIG Brief)

✓ The checklist has been a bothersome but necessary item in the working man's tool kit ever since Moses passed on the Ten Commandments. If the human brain could accurately remember a long list of procedures, there would be no need for this book of reminders. But it can't! This fact was dramatically proved recently when an egress technician overlooked a step while checking out a T-33 ejection seat. He had performed this check approximately 50 times before, but this time he forgot the step where you disconnect the catapult hose leading to the rear seat. When he applied gas pressure to the line, the back seat catapult exited through the roof of the hangar and smashed onto the pavement nearly sixty feet away. That little book of instructions may not be the most convenient item to keep near you while you're doing detailed work, but it can surely keep you out of embarrassing and dangerous situations. And if you think your checklist is bothersome, try carrying around a couple of stone tablets. (SED)

SAGAS SING THEIR SAD SATIRE

FUNN-N-E-EEEEEEEE !!!!!

While airborne in a T-33 on a night local orientation ride, an instructor and student were forced to end their "sight-see" because of the broken lower cloud coverage. Struck by an irresistible impulse for humor, the instructor in the rear seat informed the student that he would demonstrate instrument flight if he (the student) would raise the canopy a little to free the hood from behind the headrest.

The remainder of the flight was a little cold and windy.

an ounce of PREVENTION

IF IT ISN'T RIGHT — WRITE

From time to time problems arise with our aircraft or operations and we tend to live with them rather than try to correct them. For example, how many times have you received a poor radar approach and failed to bring it to the attention of the supervisory personnel at approach control? A simple phone call from the debriefing room may correct a minor problem area. The controller may think he had you lined up perfectly and if you were not, you are sorely remiss for not advising him. At times even a hazard report may be warranted, but it is not submitted because it causes too many "headaches" and may cause bad relations with the personnel at approach control. What happens when we lose one on a bad approach? Who will have the headaches then? This is in no way meant as a slam to controllers. They do an outstanding job, but at times mistakes occur or equipment fails. This is aimed rather at some pilots who would rather live with a problem and could die with it.

ROLLERS AND WINGS

Another problem has recently developed with some main landing gear tires, this time with one of our interceptors. The action directed by the depot to monitor the tires was to watch each tire's pressure and the pressure loss to see how much pressure the tires were leaking. A 5% pressure loss is the maximum allowed in 24 hours. T.O. 4T-1-3 states that if a tire loses more than 5% of its inflation pressure in a 24-hour period, it must be leak-checked and then either repaired or replaced. Don't forget that temperature will affect the pressure drastically. This check applies to pre-flight crews and even to the jocks if they have to do their own preflight. A question also came up regarding tire cut limits. The T.O. 4T-1-3 also covers this quite specifically regarding allowable cut depth allowed for each aircraft. It goes into much more detail than we have room for here. Some of the newer tires even have the cut limit stamped into the side wall of the tire. If the limit is not stamped on the tire, consult the T.O. Remember, to complete a sortie, the tires have to get you there and back. The wheels must roll until the wings begin to fly and roll again when the wings cease to perform their function.

THE WAY THE BALL

Bounces

ACCIDENT RATE

	ADC	ANG
1 Jan - 29 Feb 1972	0.0	6.6

MAJOR ALL AIRCRAFT

ON TOP OF THE HEAP

MO	ADC	MO	ADC	MO	ANG
53	49 FIS Griffiss	36	4713 DSES Otis	107	112 Ftr Gp Greater Pitt
47	57 FIS Keflavik	35	5 FIS Minot	62	169 Ftr Gp McEntire
42	4650 CSS Richards/ Gebaur	29	2 FIS Wurtsmith	57	124 Ftr Gp Boise
41	552 AEW&C McClellan	25	95 FIS Dover	51	158 Ftr Gp Burlington

ACCIDENT FREE

CUMULATIVE RATE

ACCIDENTS FOR Feb	CUM TOTAL
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BOX SCORE

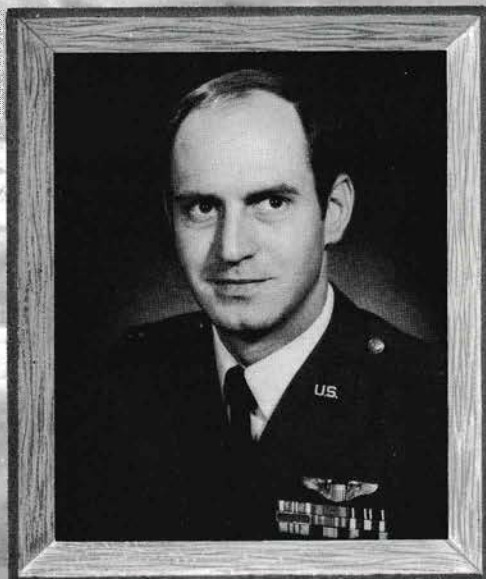
UNITS DIRECTLY UNDER HQ ADC

	ADC	ANG	20 AD	21 AD	23 AD	24 AD	25 AD	26 AD	ADWC	552	4600	4650	4677 4713	ANG
JET	0.0	8.7												
CONV	0.0	0.0												
F-101	0	32.1												1 1
F-102	0	0												
F-106	0													
T-33	0	0												
B-57	0													
EC-121	0													
CONV	0	0												

RATE = MAJOR ACCIDENTS PER 100,000 FLYING HOURS ALL RATES ESTIMATED

MINOR ACCIDENTS THIS PERIOD — 0
MINOR ACCIDENTS CUMULATIVE — 0

we point with



Capt William J. Bouldin
964 AEW&C Sq
McClellan AFB, California

PRIDE

EC-121 MULTIPLE TROUBLES

Captain William J. Bouldin was the aircraft commander of an EC-121 on an air defense training mission. During the flight, one of the engines began to lose power and Captain Bouldin feathered it. He declared an emergency, turned toward home base, and began dumping fuel in preparation for a three engine approach and landing.

As the aircraft reached final approach, Captain Bouldin lowered the landing gear handle, but the right main gear would not extend. He recycled the gear and requested a visual check from the tower. The tower confirmed the cockpit indi-

cations: the right main gear was still up.

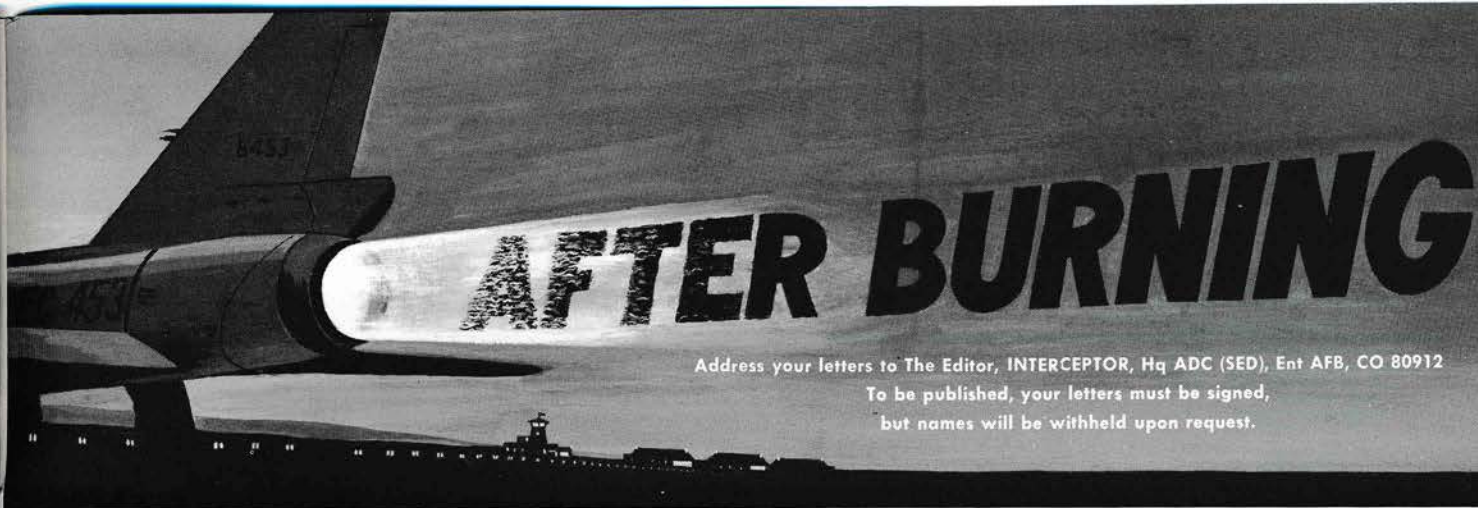
With approximately two and one half hours of fuel remaining, Captain Bouldin began circling the field. He tried the emergency system, but it had no effect. For the next two hours, he and his crew trouble shot the system and attempted all the gear-lowering procedures in the Tech Order. The gear would not come down. At this time Capt Bouldin requested the runway be foamed and prepared his crew for a crash landing.

Even after the crash landing procedures were initiated, Captain Bouldin persisted in his efforts to lower the gear. As a last resort he

used the emergency hydraulic hand-pump *and* the normal system simultaneously in an attempt to gain maximum hydraulic pressure. The gear extended and locked down. He then made a normal landing without further incident.

The post-flight inspection revealed that a foreign piece of rubber tubing had jammed the release system. Captain Bouldin's last attempt had dislodged the tubing and allowed the gear to extend normally.

Captain Bouldin's perseverance and ingenuity during a critical in-flight emergency prevented the loss of an irreplaceable aircraft and the possible injury to a 22 man crew. We point to him with pride.



Address your letters to The Editor, INTERCEPTOR, Hq ADC (SED), Ent AFB, CO 80912
To be published, your letters must be signed,
but names will be withheld upon request.

THE FAR REACHES OF THE PACIFIC

SAMTEC Operating Location 1, Canton Island, is interested in obtaining recurring safety publications from the various commands. If at all possible, please place our unit on distribution for 2 copies of ADCRP 127-2, "INTERCEPTOR." Your assistance will be greatly appreciated.

Lt Col Robert E. Hines
Base Commander
SAMTEC
Vandenberg AFB, California

***On Canton Island, you need something to read and we're glad you thought of us. The INTERCEPTOR is in the mail.**

"PACIFIC PLUNGE"

My congratulations to Major Russell Weber of the 84th FIS and to the INTERCEPTOR on the fine article "Pacific Plunge" that appeared in the February issue.

We (safety types) have written millions of words, conducted countless flight safety meetings, etc., all in an attempt to further the cause of safety education. But nothing works quite as well as one jock "telling it like it was," then passing on his personal observations and recommendations.

It's truly regrettable that some of our best material comes from the misfortunes of others. But until the accident rate reaches zero and we "X" types go looking for other work, more articles like "Pacific Plunge" can only increase the effectiveness of an already outstanding publication.

Major Jack S. Houser
Director of Safety
25 Air Division
McChord AFB, Washington

***Right on, Jack. We hope that this article will inspire others to write in and tell it like it is — or was.**

"I'LL BRIEF HER"

In reference to your December issue of INTERCEPTOR, on the cover Miss INTERCEPTOR is sitting on the canopy sill of an F-106A Dart. Unfortunately, Miss INTERCEPTOR, who is representing safety to us all, did not use one of the Number One rules of safety. She did not have the canopy jack or seat actuator pins installed on the aircraft. According to the T.O. 1F-106A-1, page 1-77 and figure 1-23 on page 1-62, it clearly states they should be on.

As Miss INTERCEPTOR is our example of ground safety, don't you think it would be a good idea to let her know some of the rules she stands for? I would feel it a privilege to be able to brief her on the use of ground safety concepts! As a mechanic on the radar system of the F-106, I have to know about all the safety stuff that goes along on the Dart. So if Miss INTERCEPTOR feels a little rusty in some areas of safety, I'll be glad to help her out!

As a person's not allowed on the flightline without a security badge, where was Miss INTERCEPTOR's?

Thank you for your time and cooperation and keep up the good work in your magazine.

A1C James N. Hall
5 FIS, MA-1 Avionics
Box 2729
Minot AFB ND

***We're always happy to find out that the ground troops read the INTERCEPTOR. Thanks for your acute observation — Carolyn has told us to be more careful next time. When we show a picture of a pretty girl, we have people who still look for canopy jacks and seat pins. Who said ADC maintenance troops aren't dedicated to safety?**

*U.S. GOVERNMENT PRINTING OFFICE: 1972-784-032/9

JOIN THE ANG!

Your reply in your January 1972 issue to SSgt Curbow, another obviously pleased reader of your fine magazine, deserves a note of appreciation. The total Air Force concept is working well when you keep the interest of the Air National Guard in focus.

Thanks for pointing Sergeant Curbow in our direction and we hope he follows through. And we here are fans of yours too.

Colonel George E. Moranda
USA - Ret
Exec Ass't, Public Affairs
National Guard Ass'n of the U.S.
Washington, D.C.

***The effect of the Air National Guard upon Aerospace Defense Command is felt each day. We are glad to help. It's great to get fan mail.**

CANOPY JACKS — AGAIN

Reference your reply to Captain Hawk's letter regarding F-106 canopy jacks. I don't know if your last sentence is a slap at Peterson Field's transient maintenance, but if so, this is a poor place to put it. The field may get the impression you were serious. T.O. 1F-106A-1, page 2-35, Item 4, under Before Leaving Airplane check, requires installation of canopy jack after each flight.

Major Joseph L. Nuvolini, Jr.
F-106 Project Officer
ADC/SEF-5
Ent AFB, Colorado

***No — the last sentence is not a slap at Peterson Field Transient Maintenance. It was simply a tongue-in-check reminder to aircrews that a canopy jack is required and that the aircrew should insure that one is used. Now you know that we know that all crews aren't using them.**



Just out of curiosity, I was thumbing through our dropped object statistics the other day and I was amazed at what I found. From the looks of things, it won't be long before the ecologists will be writing us nasty letters about littering the landscape. Since January 1971, we've had sixty incidents reporting everything from canopies to drag chutes leaving the airplanes — not to mention reefer panels, landing gear doors, and other stress-bearing parts. In most cases someone didn't do the job right, forgot to do it, or didn't check their work after doing it. I want to keep America beautiful and I hope you do too by giving your airplane a thorough preflight every time. It's safer that way — and a lot neater, too.

- Carolyn