JANUARY 1979/$1

AIR FORCE MAGAZINE

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F-16 Goes to Operational Units: The F-16B Fighter/Trainer

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AIR FORCE MAGAZINE
PUBLISHED BY THE AIR FORCE ASSOCIATION

JANUARY 1979
VOLUME 62, NUMBER 1

This Month

BOUT THE COVER

Following extensive testing, the F-16 jet fighter is being delivered in January to the US and Belgian Air Forces. Shown on the cover is the two-seat "B" fighter-trainer version. The story on the performance of F-16 production models in the test flight program begins on p. 34.

Departments

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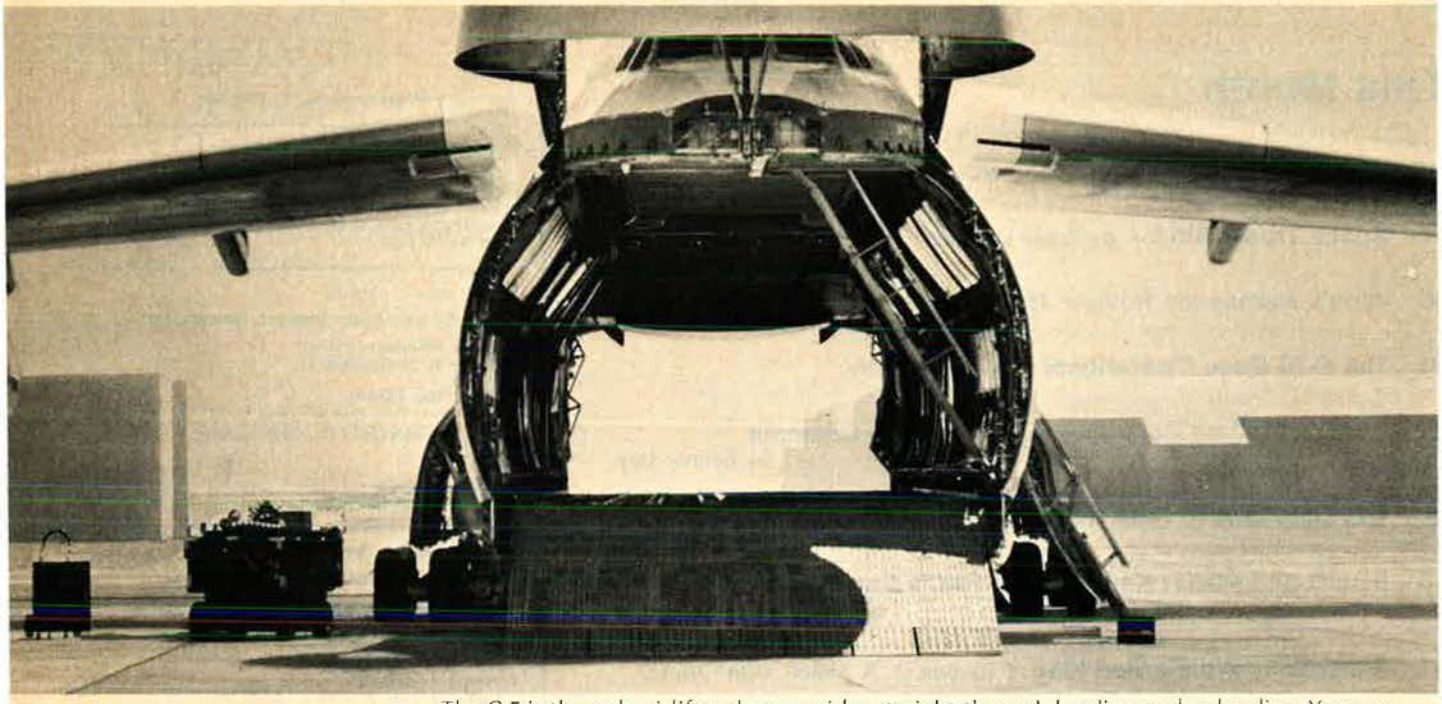

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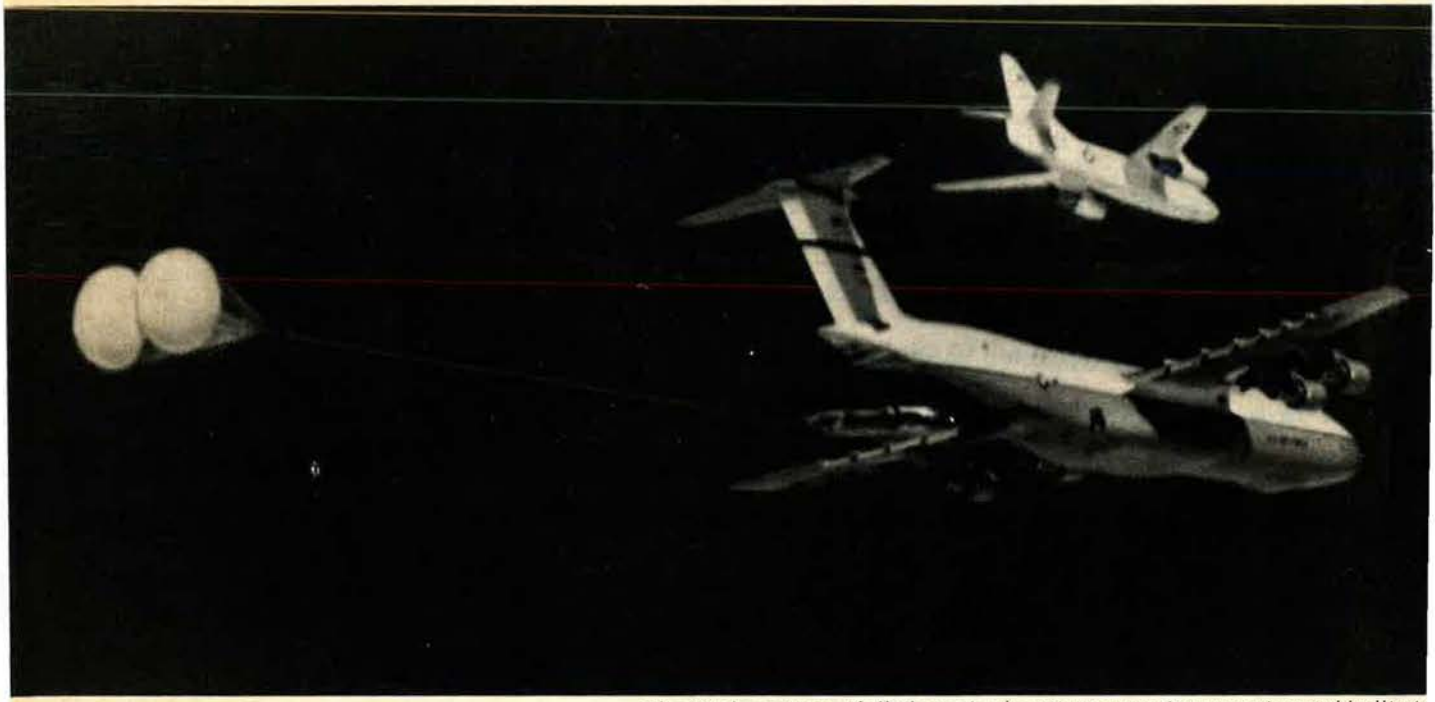

Air-launched ICBM champion. The C-5 has successfully launched a Minuteman intercontinental ballistic missile. It's the only aircraft in the world that has been able to achieve th

There's a lot more to the C-5's versatility. Its high-flotation landing gear enables it to lift the Army's heaviest tank into and out of semi-prepared runways as short as 3500 feet. Its advanced navigational systems enable it to operate in remote areas of the world. These and other features give the C-5 inherent versatility. Moreover, it can be adapted t many missions at low cost. The C-5. Built on the on

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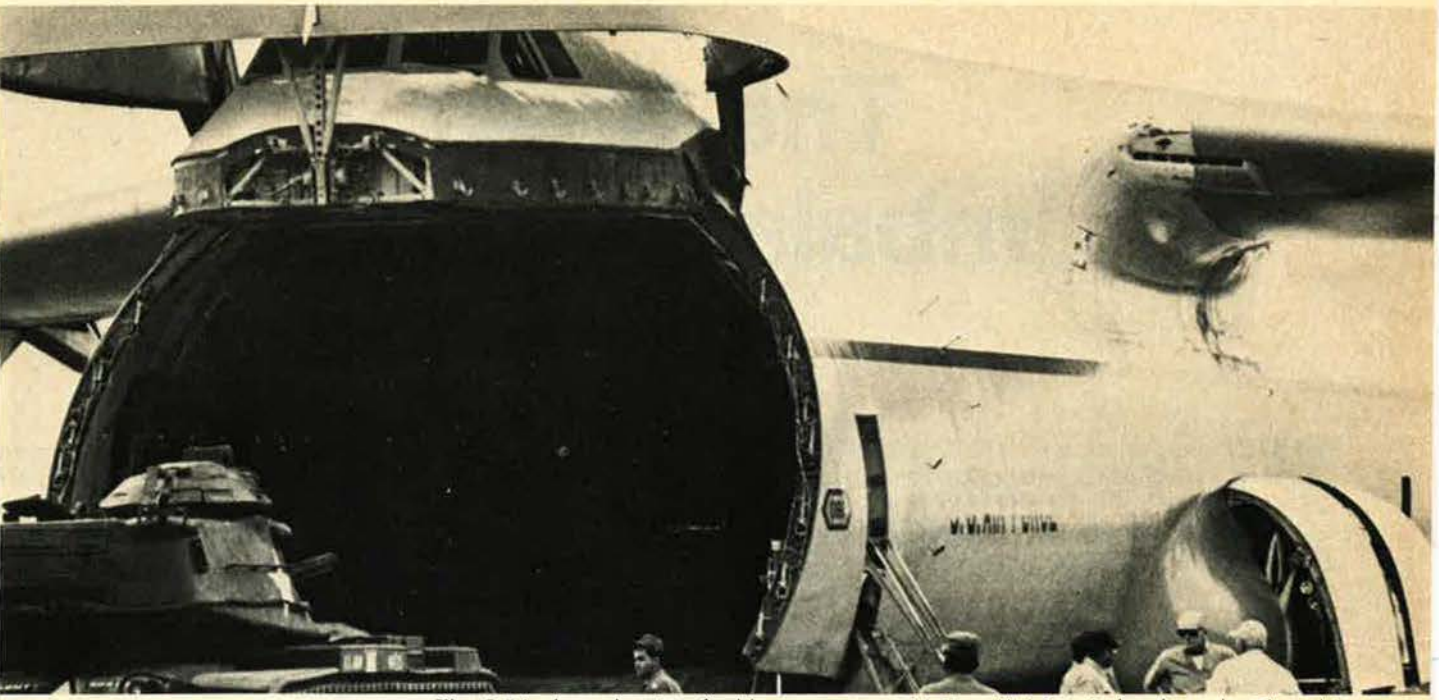

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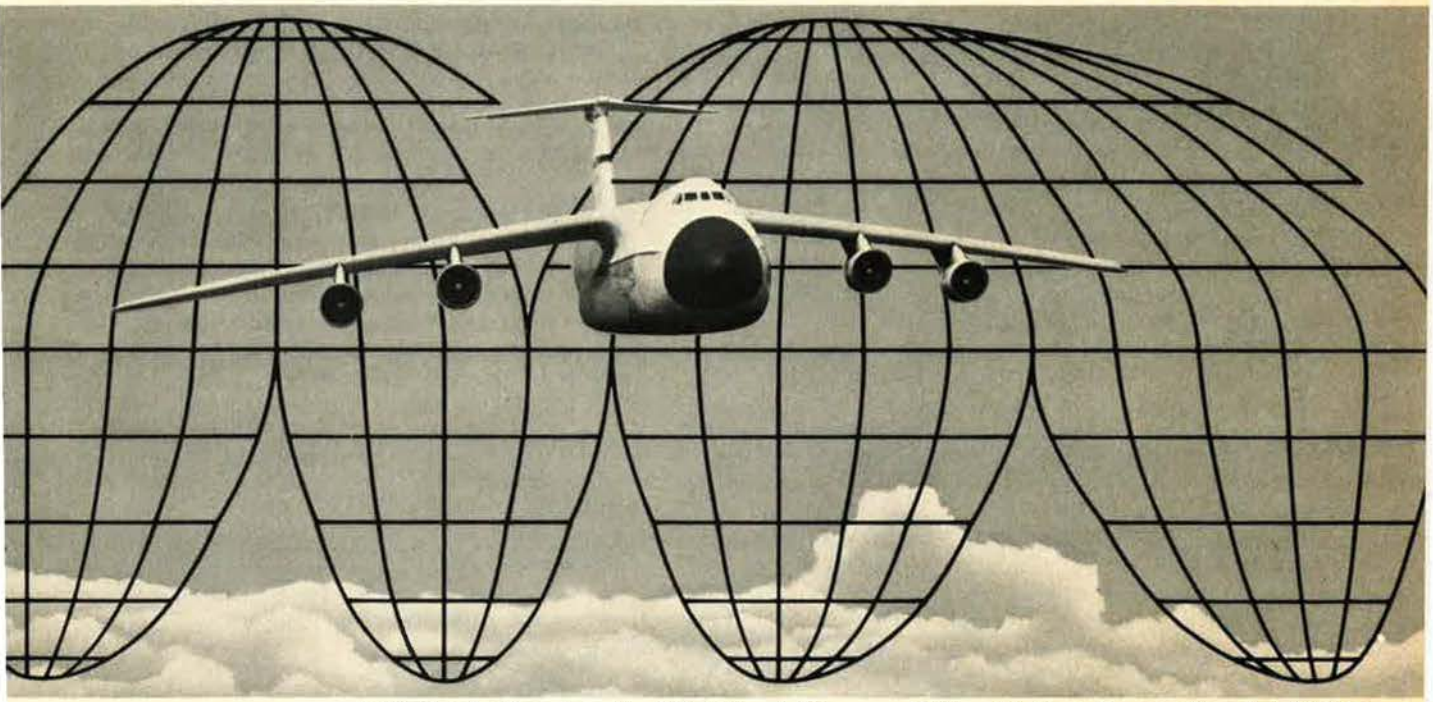

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AN EDITORIAL

The Great Imbalancing Act

THIRTY-five years ago, Walter Lippmann wrote that "in foreign relations . . . a policy has been formed only when commitments and power have been brought into balance." Those words, as true today as they were then, provide a basis for assessing where US foreign/defense policy stands and where it is going.

US commitments are less broad than they were a few years ago, but still extensive. They must be assayed on at least three levels. The first is the constant commitment to deter attack on the US itself by the only nation capable of launching such an attack—the USSR. The second relates to those areas where US and Soviet interests may clash, but where the US can expect little or no assistance from its stronger allies. The Middle East and Africa are two such areas.

The third level involves alliances headed by the US, conceived to protect allies from direct aggression and US interests from the effects of aggression. NATO is the prime example, followed by our bilateral treaties in the Pacific.

Putting the first level aside, the US commitment at the other levels is to maintain the *status quo* so far as domination by another power is concerned, but to a lesser—and lessening—degree relative to internal change. Advancement of human rights, while a worthy and still frequently articulated goal, has given a great deal of ground to the exigencies of economic and political life.

At all three levels, US power is falling behind commitments that we can ill afford to further reduce.

In contrast, the Soviet Union's commitment is to expansion of its direct control or hegemony on a global scale. Whether the impetus behind that commitment is ideological or nationalistic is important only to the extent that ideology helps or hinders expansion.

For the past decade, the US has attempted to balance commitments and power at a relatively low level of defense spending by seeking to persuade the USSR to reduce its base of power—its armed forces. Soviet policy, on the other hand, has sought with considerable success to balance commitments and military power by expanding the latter at the maximum rate allowed by Soviet resources. The two policies are diametrically opposed, with little if any middle ground on which to construct any sort of compromise.

In the long term it may make little difference whether the Kremlin in fact agrees to a nuclear, intercontinental compromise at strategic parity (an unlikely prospect) so long as the Russians remain willing to continue their much greate investment in conventional forces, and so long as the USSF is seen by the non-Communist world as historically, hence currently, willing to spend lives at an exorbitant rate in orde to reach its objectives.

The roots of the imbalance between US commitment and power do not lie in the Carter Administration. But th imbalance, which the previous Administration recognized and had set out to correct, has been exacerbated by three hallmarks of the Carter regime: consistent inconsistency delay, and the frequent espousal of mutually exclusiv goals.

A prime example of inconsistency is the President's pledge to the other NATO heads of state that the US wi increase defense spending by three percent in real term if their countries will equal that growth. It now seems almos certain that this commitment will be hedged, on the prag matic grounds that the US economy has suffered seriou setbacks. This calls to mind Peter Viereck's comment tha "pragmatism is unpragmatic; it won't work." It also brings to mind the fact that Soviet defense spending has grown b at least four percent a year for the past decade.

The foremost example of delay is the Administration' repeated postponement of a decision on production of th MX intercontinental ballistic missile. And from a gallery c mutually exclusive goals—both foreign and domestic—on could pick Mr. Carter's avowed aim of regenerating publi confidence in the openness and integrity of US foreig policy formulation while concealing such adverse event as the stationing of MiG-23s in Cuba and Soviet encodin of their ICBM test transmissions in violation of SALT understandings.

There is a subtle danger in the Carter Administration' handling of foreign relations: namely that the gap betwee commitments and power—in the final analysis, militar power—will widen at a rate too slow to create public alarm until the US has reached a point where recovery may b impossible.

In our view, the course of US foreign/defense polic is on a declining road due to the Administration's mis reading of Soviet goals, or to plain self-deception. Th ultimate destination of that road is disaster. And the on way to avoid disaster is to take an uphill path that will clos the gap between commitments and the military powe needed to back them.

—JOHN L. FRISBEE, EDITO

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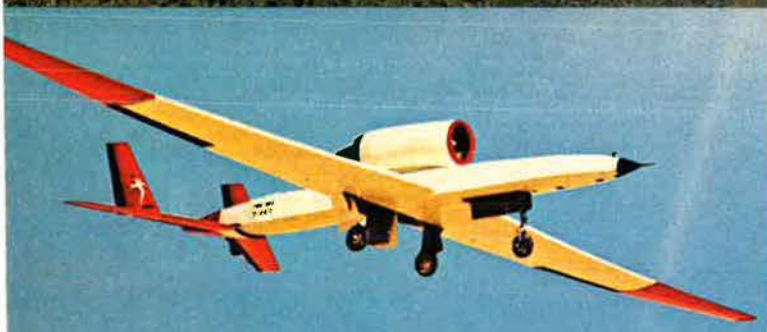

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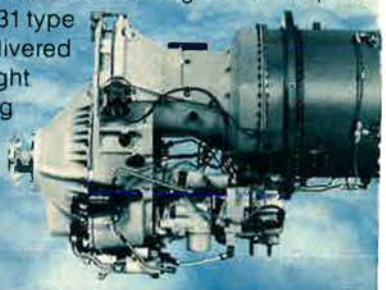

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More Authority for the CJCS?

It is unfortunate that as a part of his farewell to the armed forces, Gen. George S. Brown chose to endorse some of the principal recommendations of the "Steadman study" on how to organize the civilian/military policymaking interface. The history and current situation of the JCS structure can be interpreted in ways that differ from General Brown's (AIR FORCE Magazine, October 1978).

If it is correct to say, for example, that a major difference between World War II and now is that the country as a whole was then "mobilized and motivated," this amounts to saying that successful wartime experience should not be used as the basis for organization on grounds that the experience is unlikely to be repeated. Actually, General Brown seems to have stumbled into what I think is the most consistent error made by people who study organization. This is the idea that problems can be best solved by increasing the authority of a single leadership figure, in this case the Chairman of the Joint Chiefs of Staff.

It is possible to interpret WW II experience as an outstanding example of what can happen when the central leadership figure is "weak" rather than "strong." JCS Chairman Leahy had the confidence of the President, but he functioned primarily as a coordinator and communications link, *not* as a strategist—Marshall, King, and Arnold being the "strength" of that function. It seems dubious to conclude, as General Brown does, that the service secretaries of WW II were all that weak in comparison to current service secretaries. Overall, it seems reasonable to suggest that the JCS worked best (WW II) in a climate of interaction, not all-inclusive central authority.

Since World War II, we have progressively increased the formal authority of the JCS Chairman, on the vague ground that only a single authority figure can develop a "national viewpoint" (the Steadman language). This is dubious on two grounds: (1) no single individual can possibly have enough background and knowledge to deal with all issues involving all weapon systems and all military services; and (2) to ostentatiously define individual service chiefs as interested only in "parochial" or "subnational" issues is, essentially, to impugn anything and everything they might say. Is it not time to suggest that the effectiveness of the JCS may be *inversely* proportional to the authority of its Chairman, regardless of some hallowed theories of organization?

General Brown's conclusion seems curiously contradictory. He points out on the one hand that a major problem has been the steady increase in the size and scope of the OSD staff, but he then turns right around and argues for a substantial expansion in the immediate staff of the Chairman of the JCS. The combined abilities of an OSD staff, a CJCS staff, and a JCS staff to create new work for other staffs would seem to ludicrously increase the extent of the paperwork in Washington.

It is similarly misleading to place so much emphasis on the supposedly centralized authority of the CINCs, and USAF history is pertinent here. Strategic bombing operations in World War II were not controlled by the CINCs. In Europe, an agency of the Combined Chiefs of Staff reviewed bombing operations, although Eisenhower certainly had a voice. The point is that when effective management was needed, a team approach was used, because no single commander can ever be knowledgeable enough to control everything. . . .

Frederick C. Thayer
Pittsburgh, Pa.

• *General Brown passed away December 5, 1978. See obituary in "Aerospace World," p. 24.*—THE EDITORS

A Look at What's Wrong

My congratulations to all AIR FORCE Magazine writers who have attempted to deal with what I consider to be the biggest personnel problem in the military today. However, they are zeroing in on the most visible symptoms of what is a deeper probl

As an airline pilot for the p twenty-one years, I have had am opportunity to talk with former s vice pilots who have already jump over into the seemingly greer pastures of commercial aviati Their answers as to why they left t military are so amazingly similar th I expanded my informal survey include *any* junior officer, rated c nonrated, who had left the service. found many varied "symptomatic' reasons given, but eventually the common underlying reason became apparent. My conversations usually go something like this:

Q. Why did you leave the service?

A. The airlines (read law office, accounting firm, etc.) were hiring and the pay was too good to pass up.

Q. Is that the only reason you left?

A. Actually the pay and fringe benefits in the service are not all that bad, but the future in a service career is not too bright.

Q. What, specifically, do you mean by that?

A. Well, with the present OER system, all I have to do on my way to major or lieutenant colonel is get one mediocre rating and I lose my promotion. With the Air Force policy of up or out, there are a lot more going out than up, and I don't want to have to start another career at that stage of my life.

Q. Do you mean to say you would have changed your thinking about getting out if the service told you that, as long as you were a good officer and did your job properly, you wouldn't have the worry about being forced out halfway through your career?

A. Absolutely!

Now the real problem comes into focus. Wanting more pay, more recognition, and more privileges takes second place to the prime issue—that of wanting to be afforded the same opportunity that private industry offers. That is, to pursue one's career until normal retirement age.

General Milton, in his September article, "Why Pilots Get Out," finds hope in the fact that the hiring boom in the airlines is just about over. Don't you believe it! There are still hundreds of retirements due every year, and some experts predict that in five years the airlines will be forced to hire bodies off the street and train them to fly while on the payroll. . . .

First, let's get rid of our up-or-out policy. Promote a man to a higher rank when there is a space available, and only if he is qualified. Otherwise, either fire him for incompetency or allow him to continue doing his present job and accrue benefits in accordance with his longevity. Not everyone is qualified to be president of the company. Why should all Air Force officers have to be qualified to be a wing commander? Have you ever considered where General of the Army Dwight D. Eisenhower would have spent his later years had the up-or-out policy been in effect in the 1930s?

Second, let's consider a different scheme for contracting for a man's services. Assuming a man desires to make the service his career, at the end of ten years of service let's do an in-depth analysis of his abilities as an officer and his performance to date. Now, tell him if he has a future in the service or not. Any employer who cannot assess an employee's worth after ten years is not going to stay in business very long.

At the end of ten years, the man presented with the prospect of a dim future in the service is still young enough to pursue another career. If the man is evaluated as having done his job well, then the service should make some sort of commitment so that, although he may never be a wing commander, assuming continuance of his prior satisfactory performance, he can expect to continue his service career until a normal retirement at age fifty-five or sixty.

If these solutions are not viable, then let's have our leaders and policymakers shoot them down and produce some of their own. In any case, we can no longer afford to do nothing about the attrition of our junior officers.

Those who believe that money and glamour are luring some of our best officers away are mistaken. The real problem must be recognized for what it is, and addressed soon.

John H. Bell, Pres.
Redwood Empire Chapter, AFA
Novato, Calif.

I have read with some dismay Ed Gates's article, "Why They're Leaving the Air Force," in the October '78 issue, because of the overwhelming concern he shows for money items. There's a lot he didn't tell.

I associate with hundreds of AF officers and senior NCOs during the year. Money is, of course, of importance, but few of these people relate it to be major in their dissatisfactions with current Air Force life. Officers talk far more about the Officer Effectiveness Report system, up-or-out polices, the frequent make-busy efforts they are subjected to, the need to fill squares, and the way they and their families are treated in service organizations of the AF. Senior NCOs talk of similar things and add the loss of responsible jobs and the fact that very often they are not asked to or make input to organizational policy or directive efforts.

I can assure you that the OER system gets more bad comment than anything else, and the feelings are, in my experience, almost unanimous among the O-1 to O-4 classes.

Up-or-out is next for the officers (and is often also mentioned by the NCOs) who see little validity to a requirement that everyone must be measured against the same mold—the ultimate Chief of Staff. Many ask why this must be in the Air Force when hundreds of large and successful businesses fail to see merit in such a program and succeed without it. What, they ask, is wrong with a professional captain doing what he likes and doing an expert job? Why is it necessary for people to become what they aren't merely to meet someone else's arbitrary determination of what they should be by some specific time frame in their careers? Why is it necessary to be promoted to be of value?

Filling squares fits both the above but comes in for its share of complaint separately. Very few of the officers I talk to are unfavorable, for example, toward the idea of continuing their education during their work career. But many are decidedly unhappy over their perception they "must" pursue this extra education in order to fill certain accomplishment blocks at certain career points or suffer when compared with contemporaries. . . .

Jerome G. Peppers, Jr.
Fairborn, Ohio

Having just left (after ten years) myself but continuing to talk to many who haven't yet, I feel Ed Gates is way off beam. His whole article sums to pay when it should sum to job. I am an engineer (registered PE, MS (EE) electrical) so that defines my vantage point. The article defines a vantage point also: twenty-six col-

HOLD THOSE LINES

We receive many letters that are so far in excess of our 500-word limit that it's not feasible to extract or condense and still retain the writer's message. Blaise Pascal (1623–62), in *Provincial Letters XVII*, wrote: "I have made this letter longer than usual because I lack the time to make it shorter." If you've got the time, we've got the space.—THE EDITORS

umn inches to pilots, five to engineers, scientists, and doctors.

Without support people pilots don't mean much. The Air Force is driving most competent technical people who desire to remain technically competent out with its up-or-out management obsession. We have been told till I'm sick that the "Air Force can buy all the engineering it needs." Which may be true in a vacuum. But it can't buy people who understand the multitude of engineering applications in-house. They must come up in the system. Now, just when those people can really make contributions, the system says, "Oh. Now it's time to be a manager." That's crazy!

Why can't a person put in twenty or twenty-five years as technical specialist and retire as major or lieutenant colonel? Because the system labels him as out of step in career progression. Many good people would remain in the Air Force if they didn't have to fit in nice neat boxes in some organizational chart.

In summation, remove the engineer-to-manager discontinuity and keep more quality people!

Robert H. Cordella, Jr.
Silver Spring, Md.

And a Look at the Good Side

I am approaching the end of my first year in the Air Force, but I'm no stranger here as my father is approaching his twenty-ninth year. In other words, the Air Force has been a major factor in my life.

As I finish up this year of pilot training, I see and hear many reasons for leaving the service as soon as possible in favor of more lucrative employment, in the face of an unpredictable and relatively dismal outlook for all three branches of the service.

Looking back on some twenty

Airmail

years of the Air Force, there is no doubt in my mind that I have reaped the benefits of those years and I think that I—and a few others—could weather the bad.

2d Lt. Christopher L. Manno
Reese AFB, Tex.

Wrong Emphasis

I'm getting tired of reading letters to the editor from peevish junior officers complaining about the OER system, lack of choice in aircraft they can fly, fringe benefits, declining "dignity" and prestige in officers' clubs, etc. A cursory glance at the recent correspondence shows an excessive concern for the material benefits of an Air Force career. In today's Air Force there is precious little stress placed on the military virtues of loyalty, camaraderie, esprit de corps, mental and physical stamina. Instead, there is growing emphasis on comfort, elitism, and careerism.

Perhaps I could sympathize more if junior officers were underpaid or underprivileged. They aren't. One could even argue that a disproportionate share of the military budget goes toward pay and personnel policies. One could argue, for instance, that if the Air Force had as many new military vehicles as there are new sports cars parked outside BOQs, the force would be a bit more efficient. I wonder if our potential adversaries are as worried about their material conditions. Or are they of tougher stuff?

The lack of dignity in an Air Force career has also been discussed. One recently separated pilot even suggested that had the officers' clubs been a little more "dignified and stuffy," he might have stayed in. Let me suggest that dignity isn't something one automatically receives with a commission or puts on with mess dress. It is developed from within through sacrifice, strengthening of character, dedication, and an overwhelming belief in one's purpose and mission.

In an international order of increasing complexity and danger, the Air Force needs men and women with a depth of commitment to their country, their people, their service, and their ability to win in combat. All else pales in comparison. At least, it should.

Robert C. Fonow
St. David's University College
Lampeter, Dyfed
Wales, UK

First Black Graduate

I do not wish to detract in any way from General Milton's excellent November issue editorial, "Impersonality Curtails Unit Pride." But I feel I should point out that Henry O. Flipper, Class of 1877, was the first black graduate of West Point. He graduated more than thirty-five years before Lt. Gen. Benjamin O. Davis, Jr., was born. However, General Davis, Class of 1936, was the first black graduate to rise to the rank of lieutenant general.

Incidentally, General Milton might be surprised by "that hidebound old school on the Hudson." It's not so hidebound these days. General Goodpaster, the new superintendent, is dedicated to a full examination and update of all programs while still maintaining tradition and traditional values.

Lt. Col. Walter M. Patterson
USMA Class of 1958
O'Fallon, Ill.

Dignity vs. Greasy Burgers

As a flight-suited pilot who has been refused dining-room privileges in several of our "dignified and even a little stuffy clubs" in the last ten years, I am troubled by Mr. Karaffa's proposal [November issue, p. 5] to broaden the mandatory coat-and-tie rule in our officers' clubs. I am not certain as to the type of aircraft he flew, but my experience with emergency and weather diversions, maintenance problems, and scheduling aberrations has included attempts to dine in an officers' club when garbed in a flight suit. Oh, yes, at almost every club "hamburger service" (or worse) is offered at an adjoining bar, but before a flight or after a long crew-duty day I resent being shuttled off for a greasy sandwich in a rowdy pub. Besides, my flight surgeon just does not approve.

The reduced operation of flightline snack bars and BX cafeterias, coupled with the prohibition of wearing a flight suit off base, makes the proposition of feeding an aircrew an ever-increasing problem. All those commanders who may be contemplating more strict dress codes in their clubs should consider the transient or assigned crew member who will not have the time to search out adequate dining facilities.

Sometimes we tend to forget that "officers' club" should be taken literally. It is my opinion that some of our clubs are financially troubled and pilot retention is in jeopardy because a "dignified and even a little stuffy club" causes a crew member to miss a meal or suffer through one more greasy burger.

Capt. Richard S. Baldwin
Tinker AFB, Okla.

Name of the Game

Let me guess—Capt. James P. Qualey, Jr. ["Perspective," September 1978 issue, p. 152] is a fighter pilot. That part wasn't so difficult. What was difficult was figuring out what he was unhappy about. As one of the "team" players who, according to Captain Qualey, is supposed to keep him flying while idolizing the green pajamas he lives in, I find great difficulty in feeling sympathy for the respect he just doesn't get. You'd have to be a ground pounder to really catch the joke in his lament —*he's* got the extra pay, the world travel, the thrill of flying, the challenging job opportunities (if he wants them), and he's the star player of the team.

I always figured the satisfaction was in yourself. In *knowing* who you were and that you were doing a vital job—not in being *told* you were important. Maybe Captain Qualey's argument has some merit. The Air Force has possibly created a false image of the flight officer—making him "something he isn't"—a prima donna. The specialness of a pilot is *not* that he can do something few others can, but that he has been given an *opportunity* to do a difficult and sacrificing job which places him in the trust of his fellow men. That is not as fine a distinction as it may sound, for many of us can/could fly, many more want to, but few are selected to receive the extensive training and the trust. That's just the breaks and not the act of God in selecting the chosen few.

As for management vs. leadership, I couldn't agree with Captain Qualey more. There has been a serious overstatement of management dogma at the expense of leadership development. It seems as though the old heads have forgotten what it was like to be an eager, resourceful, and aspiring young officer (NCO, airman, civ, etc.). The managerial controls

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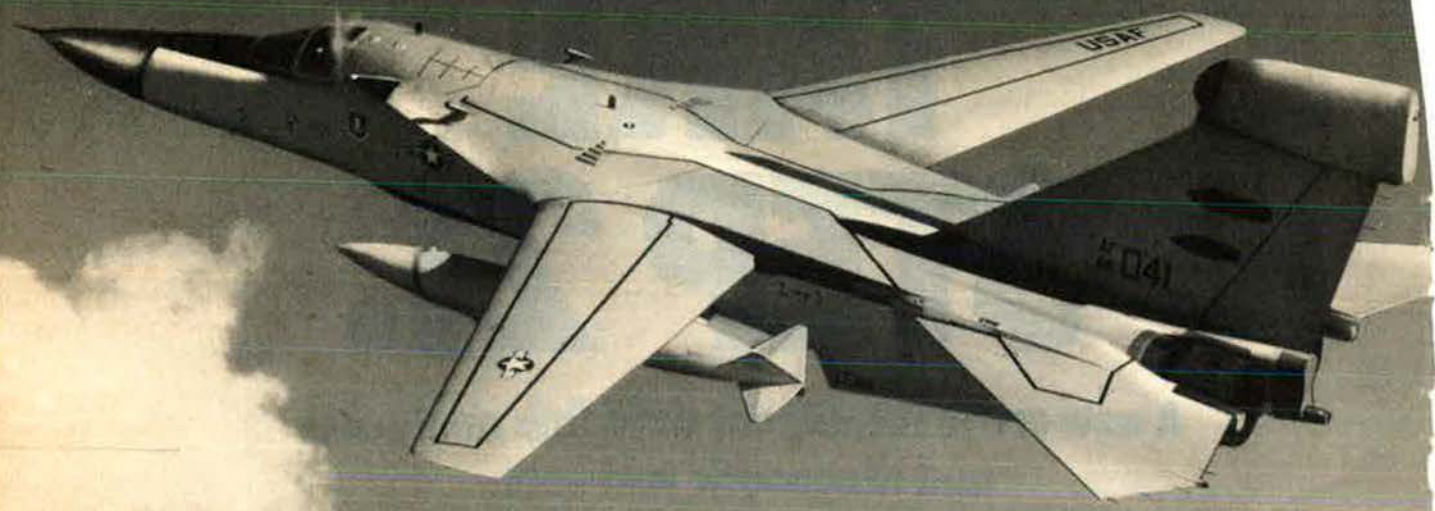

To defeat an enemy, first you have to reach him—undetected. The EF-111, the world's most powerful airborne ECM system, overwhelms and blinds ground radars to incoming aircraft.

And even if multiple, hostile radars switch to a variety of frequencies, the EF-111's broad range of jamming capabilities can handle them immediately.

Adaptable—the EF-111's system is designed to convert quickly and economically to new electronic threats. Compatible—its speed and maneuverability complement any strike aircraft. And versatile—it's ready for standoff, close air support or escort missions. The EF-111 will be the most advanced electronic warfare aircraft to join the U.S. Air Force Tactical Air Command.

GRUMMAN AEROSPACE CORPORATION

Airmail

t all levels, all functions, reflect a high degree of *mistrust* and an attitude to those below of, "You people just don't have the stuff we had back then." There is no recognition of the fact that to grow and to learn requires freedom to make decisions (and mistakes).

This state of affairs is a shame, but pilots like those Captain Qualey refers to may, in fact, be supporting that attitude. Where, after all, is the demonstrated dedication, sacrifice, and leadership example in quitting the service to fly for Eastern? When you get down to it, I'm not sure the Air Force is losing the type of people it really needs—the self-actuating, self-confident, self-sacrificing officers—the stuff of which leaders are made.

The real problem is to ensure that those who stay are given the opportunities to lead and to grow as leaders. As an American, I'd rather see the prima donnas fly for the airlines and the pros fly for the nation. As a ground pounder, I'd much rather work with or for the tough-minded realist and true soldier.

Capt. James H. McDermott
Miami, Fla.

Captain Qualey hit the nail on the head. I took two passovers to major while on active duty—one before going to Vietnam, the other shortly after completing 100 combat missions over North Vietnam in RF-4Cs. I left active duty in December 1967....

The military has gone way overboard in providing all the niceties of the country club set in order to help retain not only pilots but enlisted people as well. But you won't keep a person working for you very long if you don't respect him and give him responsibility along with a chance to advance in rank based on his ability and demonstrated job performance. . . .

Gross overstaffing of noncombat positions shows a breakdown of responsibility and thinning out of command authority. The *absolute* name of the game for the Air Force is to maintain a high state of combat readiness and defend the policies of the United States. Good fighter pilots are a national resource, and should be encouraged to stay in the Air Force through increased longevity pay. Also, let a lieutenant or captain make the decisions that now are made by lieutenant colonels or higher. Rank should come slower....

I am proud to have served my country as a fighter pilot and soldier, and even prouder to know that in all my years I have not had to compromise my ideals of high-quality, maximum-performance training that keep fighter pilots thinking like fighter pilots. This philosophy would help keep pilots in the military.

Lt. Col. James A. Fitts, USAFR
Urbandale, Iowa

Member of the Board

My mother and I are most appreciative that the Air Force Association has made a contribution to the Aerospace Education Foundation in memory of my father, Joe Hodges [a member of AFA's Board of Directors for many years, who passed away in October 1978].

Dad's long affiliation with AFA was an important part of his life. He was proud of the organization, what it had become, and what it had achieved. Most of all, I think he was proud of what it stood for, an association of free men committed to great ideals.

His efforts in behalf of the Association were tempered by his failing health in the past few years, but his interest and concern never slackened.

As a fighter pilot and career officer, I'd also like to thank you for your interest and concern for those of us in uniform, and much more importantly for your diligent efforts to ensure the security of the free world.

Maj. Joseph L. Hodges III
South Boston, Va.

Photographic Record of JCS

The Historical Division of the Joint Secretariat, Organization of the Joint Chiefs of Staff, is attempting to compile a photographic record of the activities of the JCS, with a view to the possibility of eventual publication of such a record.

Contributions are invited from those having photographs or snapshots that might constitute a useful part of such a record. Particularly desired are photographs that record any of the activities of the Joint Chiefs of Staff, or of any individual members thereof, in connection with combat operations or with overseas or CONUS training activities.

Unfortunately, contributions cannot be returned. Copies of photographs, appropriately annotated, should be sent to

The Historical Division
Office of the Secretary
Joint Chiefs of Staff
Washington, D. C. 20301

Song Kran Festival

I am trying to determine among military members and dependents from Thailand those who would be interested in visiting Thailand in April (Song Kran water festival)....

If enough people participate, a round-trip, no-frills air package can be developed at large savings. Please contact:

Maj. Leland R. Simcoe,
USAF (Ret.)
4810 Foxhead Dr.
Del Valle, Tex. 78617
Phone: (512) 247-2307

B-47E #53-6244

I would like to hear from former crew members of B-47E #53-6244. This aircraft was assigned to the 40th Bombardment Wing, Smoky Hill AFB, Kan., from October 1956 to January 1957. From January 1957 to January 1965 it was assigned to the 307th Bombardment Wing, Lincoln AFB, Neb.

This aircraft is now derelict at the Fire Training Center at Wright-Patterson AFB, Ohio. I would very much like to learn of its history, service, and crews.

Christopher Bright
513 Glenrose Dr.
Vandalia, Ohio 45377

UNIT REUNIONS

IIIi-Nines

10th Annual Air Derby, May 25–27, 1979, Coles County Airport, Mattoon, Ill. Entry deadline April 30, with a limit of 60 planes. Entry kit $3.00. **Contact:** Norma Freier, 226 Kelsey Rd., Rte. #1, Barrington, Ill. 60010.

Lawyer-Pilots Bar Association

February 22–25, 1979, La Costa Hotel, Carlsbad, Calif. **Contact:** Arthur Alan Wolk, Lawyer-Pilots Bar Association, 1712 Locust St., Philadelphia, Pa. 19103.

26th Fighter Squadron, 51st FG

"China Blitzers" stationed in Karachi, Dinjan, India; Kunming, China; and other areas of CBI theater from 1942–45; 4th minireunion, Anaheim, Calif., February 18, 1979. **Contact:** Gordon F. Spence, 1464 Beverly Dr., Anaheim, Calif. 92801. Phone: (714) 535-9630.

In Focus...

BY EDGAR ULSAMER, SENIOR EDITOR

Washington, D. C., Dec. 6

Space Treaty Rift?

There is evidence of considerable polarization within the Administration concerning national policy on space weapons and electronic warfare related to military spacecraft. The point at issue is a treaty that is being negotiated between the US and the Soviet Union barring the deployment of antisatellite interceptors, or ASATs. Several sticky, gravely consequential points are involved, beginning with the fact that the Soviet Union has fully operational ASATs that clearly are capable of blowing up—by nonnuclear means—spacecraft at low to medium altitudes.

The US has no such systems in being although there can be no doubt that launchers with nuclear warheads are readily available to destroy Soviet spacecraft, if, in case of war, the National Command Authorities should decide to disown the 1967 Outer Space Treaty that prohibits placing in orbit objects that carry nuclear weapons.

This prohibition probably becomes academic in case of nuclear war between the superpowers. But there are operational drawbacks to using nuclear weapons—especially those meant to protect US military spacecraft from attacking interceptors—since nuclear effects in space propagate over great distances and don't differentiate between friend and foe. Even relatively low-yield warheads would disable most if not all unhardened spacecraft within a radius of several hundred miles. Thus, the destruction of a Soviet ASAT at the cost of dooming the US spacecraft that is to be protected—at least until US spacecraft can be fully hardened—would be a Pyrrhic victory.

A strong case is being made by the Defense Department and other elements of the Executive Branch against halting the embryonic US ASAT program before it has demonstrated intercept capability. Agreeing to "freeze" the Soviet and US ASAT programs at the present levels obviously is tantamount to granting Moscow a fundamental advantage in perpetuity. Such a condition would enable the Soviets to break out from the agreement since they have all required technologies, if not operational hardware, while the US would need years to reach that point.

Arrayed against the reservations of the Defense community is a loose liaison of Arms Control and Disarmament Agency (ACDA) and top-level State Department officials, tacitly supported by the National Security Council's Victor Utgoff. The latter group seeks to dilute President Jimmy Carter's guidelines concerning the US position on a space weapons treaty—such as the instruction not to perpetuate existing asymmetries and not to agree to terms that can't be verified—by urging that Soviet promises and good will be taken at face value.

The State Department/ACDA group has proposed further that the US commit itself to a policy of comprehensive "noninterference" with Soviet military satellites. The term "noninterference" in the context of an anti-ASAT treaty tends to take on extremely broad meaning. At stake are prohibitions against jamming hostile satellites, inspecting them by visiting Space Shuttle crews, hindering their operation by placing foreign objects in the paths of their transmissions and their fields of view, incapacitating them in various ways—such as overheating or overloading their sensors with ground-based high-energy lasers—and either "pirating" them through electronic means or causing them to "self-destruct" through spurious command signals.

The Defense community—whose views at this writing seem to have greater leverage in the White House than do ACDA's views—believes that a space-weapons treaty should be treated as a two-step process. During the initial phase—possibly a protocol period similar to the one envisioned for SALT II—a certain number of ASAT tests would be permitted, thus enabling the United States to catch up with the Soviet. This is considered essential—and has been received sympathetically by the White House—since Soviet pledges to dismantle that nation's ASAT hardware are totally unverifiable and largely meaningless.

Once there is parity, provisions that limit both sides' capabilities within verifiable bounds could be drawn up to provide the framework for the second, permanent phase of such an accord.

The "Sullivan" Affair

The New York *Times's* November 13, 1978, revelation that Sen. Henry M. Jackson (D-Wash.), chairman of the Senate's Arms Control Subcommittee, was furnished a bootlegged copy of a secret, highly informative CIA report on Soviet SALT tactics and duplicity leads to a story behind a story.

Attributed to "Administration and intelligence sources," the report contains misstatements and omissions, the latter including information disclosed in our December "In Focus . . ." (p. 25) under a November 3, 1978, dateline. A good case can be made for the proposition—widely circulated on Capitol Hill—that Administration sources leaked the story to Seymour Hersh of the New York *Times* in order to embarrass Senator Jackson, one of the Congress' pivotal and most uncompromising and knowledgeable SALT experts, and his influential staff advisor on SALT matters, Richard Perle.

Well-connected congressional sources also view the leak as part of the opening round of a brass-knuckle campaign—patterned after but far more energetic and refined than the selling of the Panama Canal Treaties last year—to ram SALT II ratification through the Senate. Key protagonist in the New York *Times* story is former CIA strategic analyst David S. Sullivan, a former Marine Corps captain who served in Vietnam and is the son of retired Air Force Maj. Gen. Henry R. Sullivan, Jr.

Sullivan improperly but not illegally furnished to Senator Jackson's staff a copy of a highly classified CIA report—authored principally by him—that demonstrates the near-absolute control over Soviet SALT policies exerted by that nation's military hierarchy, as well as Moscow's elaborate deceptions of US SALT negotiators. The Sullivan

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Orbiter arrives.
The first spaceship was Orbiter. Crammed with a dozen scientific instruments, it was launched last May by NASA. 300-million miles later, it arrived at Venus. But it's still traveling. It's now on a series of 243 one-day elliptical orbits around the planet—studying its atmosphere and mapping its terrain, close in and far away.

Multiprobe arrives.
The second spaceship was Multiprobe. Carrying 18 instruments, it was launched in August by NASA on a more direct 220-million mile trip. At a point 7.8 million miles from Venus, it divided into five fact-finding probes. And then these probes, including the parent "bus" that took them there, entered Venus' atmosphere to explore five widely separated planet areas. The information they beamed back about the planet's winds, clouds, and atmosphere will help clarify the mystery of how our own weather operates here on Earth.

A hostile neighbor.
The twin mission was the most complex unmanned space venture ever undertaken. What made it still tougher was the downright hostile nature of our nearest planet neighbor, as experienced firsthand by Multiprobe.

920° hot.
Venus has a surface temperature of 920°F.—hot enough to melt tin or lead. Its surface pressure is as crushing as the ocean 3,000 feet deep. Its atmosphere is almost pure carbon dioxide. And its dense clouds aren't innocent water. They're sulfuric acid.

Aluminum blankets.
But scientific ingenuity at Hughes took up the challenges. For example, Multiprobe's fragile internal electronics were guarded by blankets made of special aluminized plastic sheets with great resistance to intense heat.

Titanium shells.
Special titanium shells proved to be ideal pressure vessels. Light in weight, they still could resist corrosion and 1,400 pounds of pressure per square inch.

A diamond window
Finally, our designers needed an unusual window for an instrument that senses radiant energy. Typical window materials weren't rugged enough. Sapphire windows used for other probe instruments would block infrared wavelengths. Solution: a 13-carat diamond window the size of two pennies stacked together. It worked.

90 revealing minutes.
In 90 minutes, the twin mission managed by NASA's Ames Research Center told 115 scientific and technical investigators more about Venus than astronomers have learned in the five centuries since Galileo.

Mission impossible?
NASA didn't think so.
And neither did Hughes.

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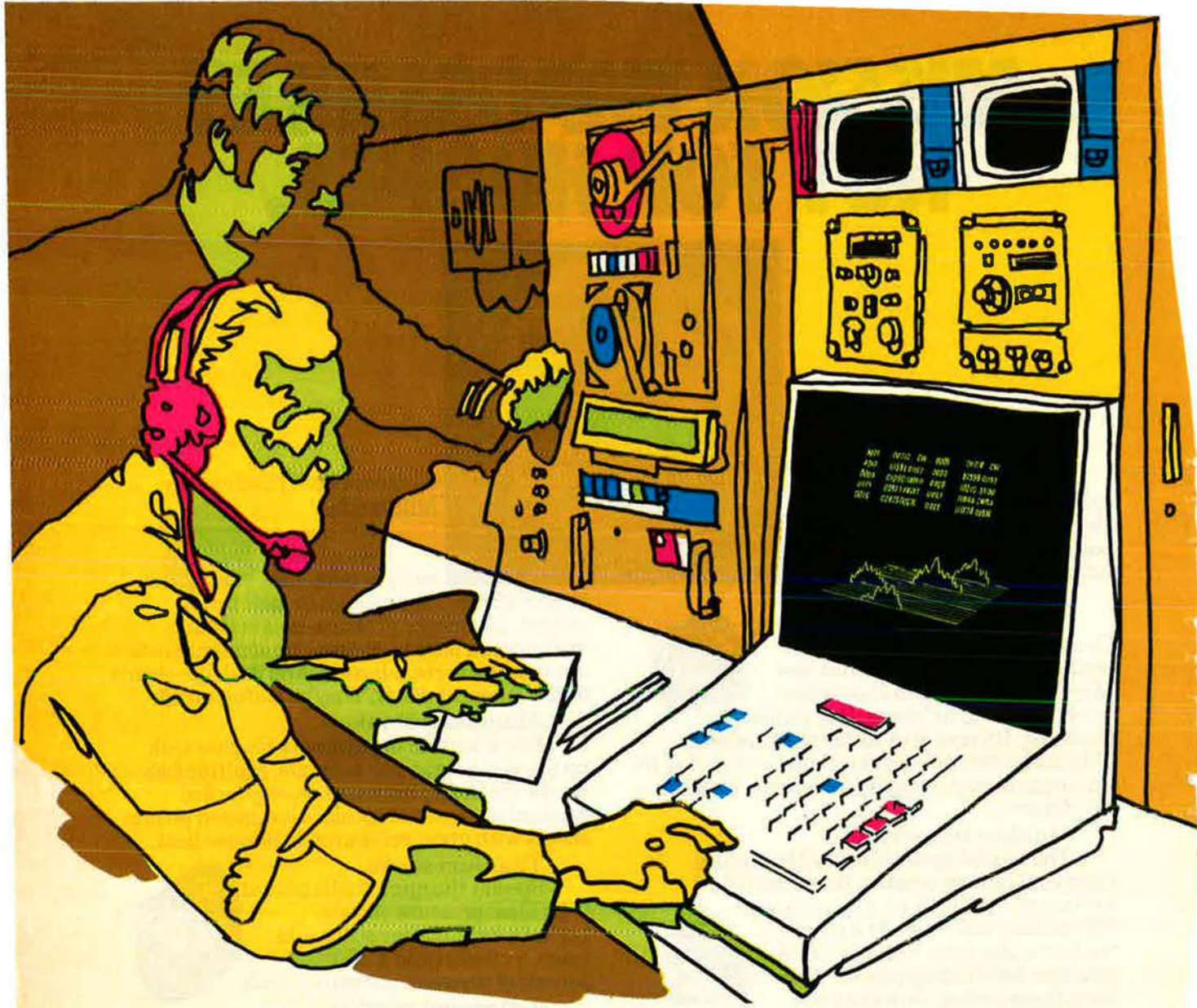

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In Focus...

report is based on hard evidence—including written communications between Soviet President Brezhnev and the late Defense Minister Marshal A. A. Grechko—and brings out in precise detail the fact that the Soviet military five-year plan predetermines Moscow's SALT negotiating positions in a binding way. (The reverse condition obtains in the US, where strategic planning and weapons programs often are made to fit SALT terms in a procrustean manner.)

The Sullivan report generated considerable interest in the upper echelons of the Pentagon and elsewhere where it circulated under tight security controls. Word of the report's existence eventually reached relevant congressional committees that then requested the CIA to provide briefings on the subject. These requests were denied summarily by the CIA, even though there appeared to be a bona fide case of "right to know" and no problem with the required security clearances and procedures.

Congressional sources intimately familiar with the situation are convinced that the report was withheld from Congress improperly and for the sole purpose of suppressing information that might make Senate ratification of SALT II more difficult. (The CIA public affairs office, when queried by this writer, declined all comment on the incident.)

Mr. Sullivan seemingly reached a similar conclusion, for he provided a copy of the report to Mr. Perle, with whom he had previous professional contact. (Both Mr. Perle and Senator Jackson had the required security clearances to receive the material. It is ironic also that subsequently Adm. Stansfield Turner, the CIA's Director, personally offered to make the report available to Senator Jackson.) Sullivan, in the meantime, informed his CIA superiors of what he had done and resigned. He was not, as the New York *Times* story claims, dismissed by Admiral Turner. Equally incorrect is the newspaper's citing of an unnamed source who quoted Admiral Turner as requesting Senator Jackson to fire Perle just as the CIA allegedly fired Sullivan. Also erroneous is the newspaper's assertion that Senator Jackson and Mr. Perle apologized to the CIA Director for their part in the episode.

The CIA's strange reluctance to provide important arms-control information to relevant elements of Congress has not helped the agency's standing on Capitol Hill. It comes on the heels of strong congressional concerns over alleged slanting of National Intelligence Estimates by the CIA boss to serve political ends. The CIA's luster was tarnished further by an egregiously off-the-mark assessment of the political situation in Iran—described in news reports as "180 degrees wrong" and causing a White House reprimand. It may be sheer coincidence—but is noteworthy nevertheless—that the Joint Chiefs of Staff, with the full blessing of Defense Secretary Harold Brown, have now set up their own intelligence net assessment organization.

MiGs in Cuba

The strangest aspect of the recent press disclosure that the Soviets have sent MiG-23 combat aircraft to Cuba is the fact that the American people found out about this Soviet provocation through the entrepreneurship of two columnists and not the candor of their government.

It is noteworthy that this disclosure by columnists Roland Evans and Robert Novak triggered one of the most intensive drives in recent Pentagon history to track down a "news leak."

What makes the situation even more puzzling is that the US government reportedly learned of the arrival of the MiG-23s (an arrant violation of the Kennedy-Khrushchev agreements that followed the Cuban missile crisis in 1962) about the time that Fidel Castro now says the first aircraft arrived on his island—almost a year ago. (Equally startling was the government's withholding of information that the Soviets had resumed the encrypting of their SS-18 ICBM flight-testing until that fact was first reported in this space two months ago. This column learned further that there have been other relatively recent instances of Soviet provocative behavior, but highly placed sources are unwilling to reveal details because of the high classification involved.)

After the news of MiG-23 Floggers had leaked out, the White House ordered the resumption of SR-71 flights in the Cuban area to reinforce satellite observations and to establish the precise nature of the aircraft and their armament. The "D" model of the MiG-23 family is optimized for ground attack and delivery of nuclear weapons and recognizable through a pointed and drooped nose that boosts pilot visibility. (Contrary to blustery comments in Moscow by Premier Kosygin to visiting US Senators that all the MiG-23s in Cuba were of the air-superiority type—which would not preclude of itself carriage of nuclear weapons—some of the aircraft, AIR FORCE Magazine has learned, are in fact "D" models.)

But a strange surprise set in, after the SR-71s had begun their surveillance flights. According to authoritative sources, the MiGs vanished, apparently because the Cubans had moved the aircraft to underground hangars or revetments. The case of the disappearing MiGs may prove as much of a hurdle in the forthcoming selling of SALT II as their presence in Cuba. Senate skeptics of US ability to verify SALT II terms can be counted on to point out that if "verification" in a relatively small country located off shore and involving use of the SR-71s can be thwarted, an even tougher problem exists with regard to the Soviet Union. Feeding congressional concerns further is the reported inability of US intelligence to establish whether or not the Soviet Union delivered to Cuba nuclear weapons, to go along with the MiGs. The dilemma regarding tactical nuclear weapons' detection, this column learned, is no different from the situation in Europe.

"We really don't know where the Warsaw Pact stores most of its nuclear weapons, and we know even less about the overall number of 'nukes' available to the Pact," according to an authoritative defense expert. He added that short of security slipups by the other side, the US stands little chance of proving that tactical nuclear weapons have, or have not, been introduced into Cuba.

Among the many uncertainties surrounding the Cuban MiG affair, none is more bewildering to US Sovietologists than the timing of the provocation, whose severity in terms of American public reaction was no doubt crystal clear to the Kremlin. It is difficult to divine a reason for the Soviets playing straight into the hands of the US SALT II critics when they could have waited until after the Senate vote on the accord and still realized the same objective.

(More "In Focus" on p. 18)

InFocus...

The Great SALT Sale

According to a recent front-page story in the Washington *Post*, a high-level SALT committee that meets regularly in the White House's situation room has begun "plotting the sales campaign for the new agreements." A number of so-called "tiger teams" have been formed to "merchandise" the pending treaty across the country. The reason for this sales blitz is Administration concern that the makeup of the new Senate, plus the continuing aggressive behavior of the Soviets, aid the already formidable opposition to SALT, in the Senate as well as across the country.

Symptomatic of the mood of the Senate—which would have to ratify a SALT II treaty by a two-thirds vote—are the sentiments of Sen. John Glenn (D-Ohio), who characterizes himself as "definitely not a hawk or hardliner" on this issue. At a recent press conference, Senator Glenn said that increasing encrypting of telemetry data from Soviet ballistic missile tests "might well be the single issue" on which congressional SALT II approval will stand or fall.

Congressional vote counters now believe that SALT II approval is "not thinkable" unless at least one of four principal bellwethers—Senate Armed Services Chairman John Stennis, Minority Leader Howard Baker, and Senators Jackson and Sam Nunn (D-Ga.)—decides to vote on the Administration's side. Senator Stennis is known to seek responsibility for SALT II for his committee, along with the Foreign Relations Committee, because of the basically military nature of the accord. There is high probability that he will succeed and certainty that in such eventuality the road of SALT through the Senate would become a great deal longer and harder.

Senator Jackson, meanwhile, gave indications of how the SALT critics will challenge the Administration's "tiger teams." In a detailed speech on "SALT and European Security" before the North Atlantic Assembly in Lisbon, Portugal, he cited as key flaws of the emerging SALT II treaty the failure to constrain the Soviet threat to the US Minuteman ICBM force and that it "permits the Soviet Union a significant force of heavy missiles that the United States is denied (and for which it is not compensated). . . ." (Many congressional and military SALT experts believe that the 326 Soviet heavy ICBMs, SS-9s and SS-18s, should each count as two units under the treaty's 1,320 limit of MIRVed strategic nuclear launch vehicles, thus extending the same logic to ICBMs that the Soviets apply to large US cruise-missile launchers.)

On balance, Senator Jackson warned that the "treaty will permit the Soviets to deploy a substantially superior strategic force than the United States will be allowed." Further, SALT II, as it is developing, "profoundly and adversely affects European security," according to the Chairman of the Senate's Arms Control Subcommittee. SALT II not only fails to deal with the Backfire bomber and the SS-20 MIRVed intermediate-range ballistic missile, which "have given the Soviets the capacity to engage NATO's tactical nuclear forces—possibly in a first, disarming strike, [but the treaty] is likely to make matters worse both by permitting the Soviets to deploy the SS-20 and the Backfire in virtually unlimited numbers and, perhaps most importantly, by restricting severely the deployment by NATO of ground- and sea-launched cruise missiles," according to Senator Jackson.

The argument by proponents of SALT II that constraints on theater cruise missiles are in force only for three years, he said, is "hopelessly naïve. . . . The West will find it difficult to the point of impossibility to turn back the clock on 'temporary' arms limitations and plunge ahead with new and previously banned weapons as though they never had been prohibited."

MX Uncertainties

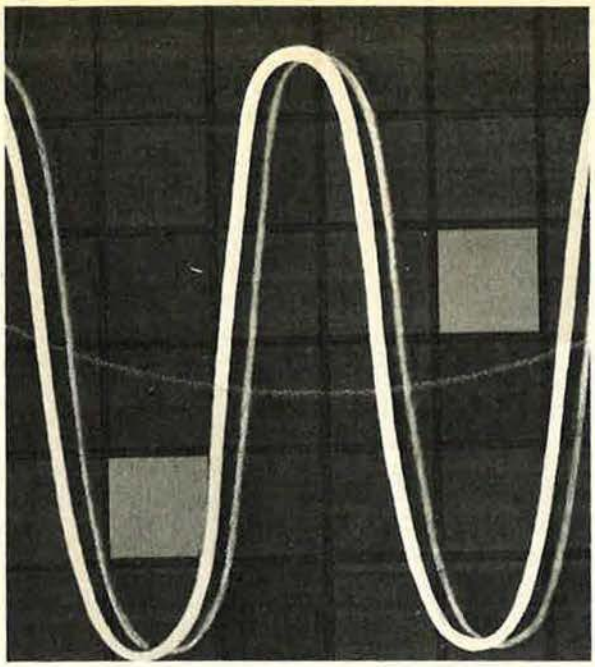
Classified letters by Defense Secretary Harold Brown to the chairmen of the two armed services committees, Sen. John C. Stennis and Rep. Melvin Price, dated October 31, 1978, contained the promise that the Defense Department would inform Congress on or about December 3, 1978, concerning the pending decision to develop a new, survivably based ICBM. As reported here last month, both letters propose some limited go-ahead on the missile itself—following a DSARC II A, the Defense Systems Acquisition Council's formal permission to start initial engineering development—but will defer until later in 1979 the decision on how these weapons should be based.

The pertinent DSARC II A was scheduled for December 5, 1978. The Air Force, meanwhile, has decided to treat this DSARC as a full DSARC II, meaning the service's recommendations are for full go-ahead on both the missile and a multiple aim point (MAP) basing mode. The chances of the Air Force's carrying the day must be rated as slim.

Sen. Jake Garn (R-Utah), in a related move, pointed out to Senator Stennis in a formal letter that "to consider the missile apart from a basing decision will not provide the commitment we need for a strong and durable triad of strategic forces. . . . I would recommend a public debate on this issue as principal objective of the Committee at the opening of the 96th Congress."

Washington Observations

- Ominous evidence of significant advances in Soviet antisubmarine warfare (ASW) capabilities is reaching the US intelligence community, indicating development of a new sensor system that can pinpoint the locations of deeply submerged subs within a radius of approximately 100 miles.
- The "Ethics in Government Act of 1978," signed into law by the President late in 1978, contains stringent prohibitions against employment and other activities of retired military officers and government employees, especially general officers and certain GS-17 employees and above, that could be perceived as constituting conflict of interest. The Act's key provisions won't go into effect until July 1 of this year. Expect an exodus of senior Pentagon personnel before then. Some of the prohibitions are for life, others for one and two years.
- Concern is mounting in Washington over the Soviets installing SS-20 IRBMs—and possibly SS-16 ICBMs—at a deactivated SS-7 site at Yurya.
- Defense Secretary Brown, in response to White House instructions, has examined the potential for changing the strategic triad into a dyad by phasing out ICBMs. Such a step is feasible, he concluded, but would drive up costs because of the need to beef up the bomber and SLBM forces. ■



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Aerospace World News, Views & Comments

By William P. Schlitz, ASSISTANT MANAGING EDITOR

Washington, D. C., Dec. 5

★ In late November, USAF gave McDonnell Douglas Corp. a green light for the production of KC-10 Advanced Tanker/Cargo Aircraft (*also see p. 64*).

Some $132.5 million will be spent in 1979 for the purchase of two KC-10s and to pay the balance of nonrecurring engineering costs. In addition, McDonnell Douglas was authorized to purchase initial spare parts and other KC-10 support, the first time aircraft and support have been contracted for at the same time.

The mission of the military derivative of the DC-10 convertible freighter will be to increase US force mobility in contingencies by: refueling fighters while simultaneously hauling their support equipment and personnel on deployments abroad; refueling strategic airlifters during overseas deployments and resupply missions; refueling strategic offensive and reconnaissance aircraft during long-range conventional operations; and providing increased cargo capability on selected missions.

In most instances, the new tanker/transport can perform these missions without having to land outside CONUS and thus not deplete critical fuel supplies in theaters of operation.

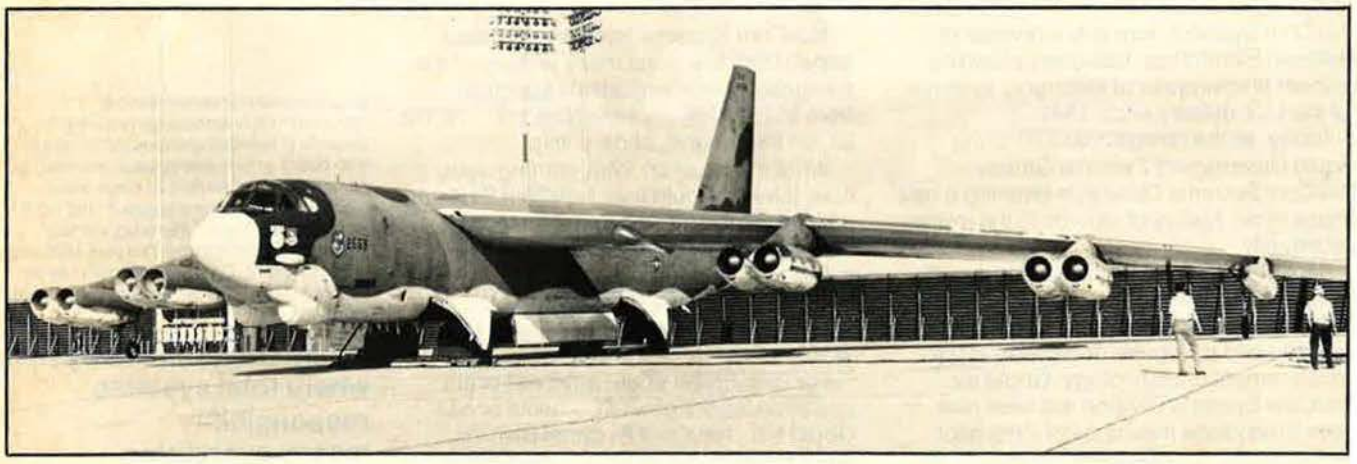
Over the next five years, available funding will determine the numbers of KC-10s acquired, but USAF is expecting to procure up to twenty.

Another factor in the KC-10 buy is its commonality with its DC-10 counterpart, thus access to the commercial worldwide logistics support system and spares inventory, repair facilities, and repair specialists in the field.

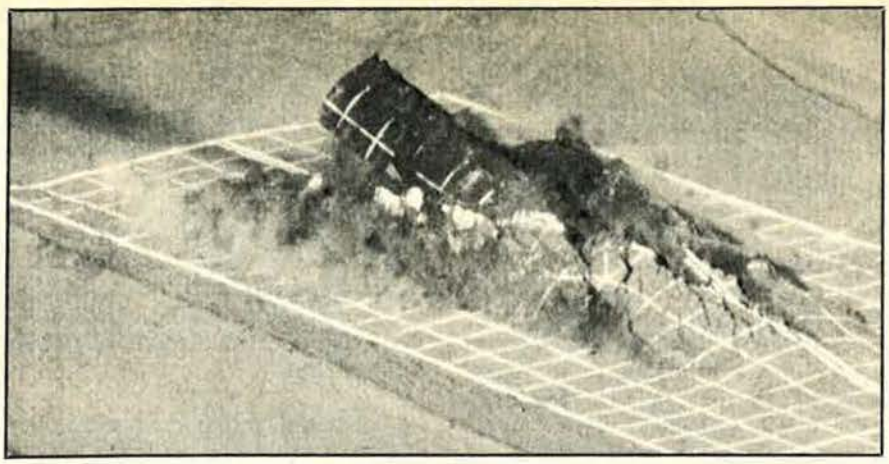
★ This past summer, a high-level team of thirty People's Republic of China space experts visited Japan to study that country's space facilities and programs. (*For a rundown on PRC's border troubles and a related article on that nation's military posture, see p. 38.*)

At the conclusion of their stay, the group's leader, National Aeronautical Technology Institute Chairman Ren Shin Min, delivered a two-hour presentation on space activities in the PRC. Some of the highlights, as reported in a recent issue of *Wing*, Japan's aerospace and aviation weekly newsletter:

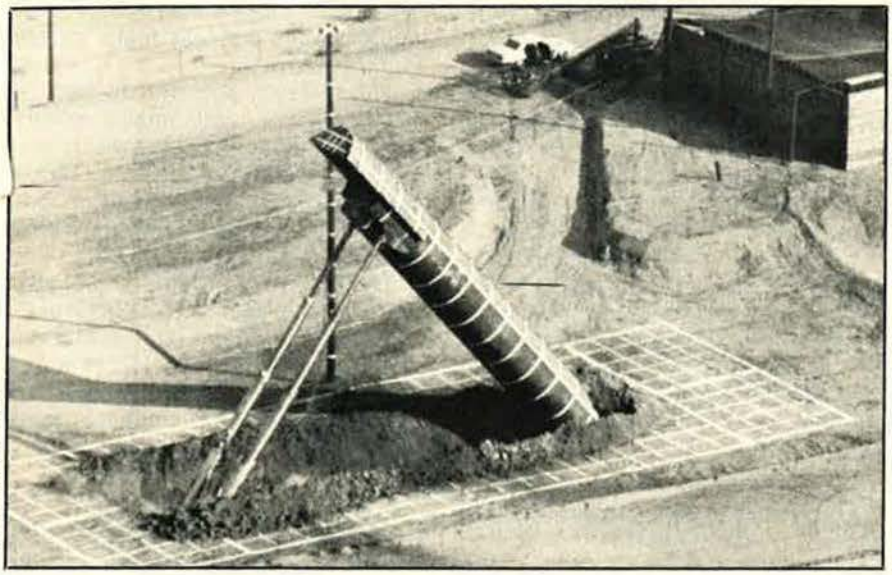
• China's full-scale space activities began with the founding of the aeronautical institute in 1968. Since, there has been "steady achievement" in the rocket field (solid- and liquid-fuel stages) and the successful launch of eight satellites, with



Right, an artist's concept of the KC-10 Advanced Tanker/Cargo Aircraft derivative of the commercial DC-10. Below, electronically agile radar equipped B-52. (See related items.)



—Wide World Photos



—Wide World Photos

At Luke AFB, Ariz., in November, a Boeing Aerospace Co. prototype breakout mechanism punched through ten inches of concrete and five feet of dirt to prove the feasibility of the buried trench concept for ICBM protection. Also in November, the Carter Administration requested $190 million to begin accelerated development of a mobile ICBM.

the recovery of three. The institute formulates all space planning and directs various laboratories, factories, and universities in conducting research. It also coordinates all domestic space-related activity and cooperative efforts with other nations.

• China is planning the three-stage liquid-fuel launch of two geostationary communications satellites, one each in 1980 and 1981. Ground facilities to receive satellite transmissions have already been completed, as have two tracking stations. In addition, observation ships are under development.

• Under study are such satellite echnologies as communications, veather observation, earth resources earches, fishing, and space surveys. China is "also carrying out preparaons for a skylab and manned satelte."

• "By using new foreign technology, we can speed up our own development. . . . For this purpose, we plan to send as many scientists, engineers, researchers, and exchange students overseas as possible. In early 1979, we plan to send 500 of these people to study in Japan and 3,000–4,000 to Europe and other places. Moreover, we want to participate in many international scientific congresses, invite foreign scholars to lecture in China, and to participate in joint projects."

★ In November, the Air Force began the first of a planned fifty B-52 test flights of its new electronically agile radar (EAR), a multimode system especially tailored for use aboard strategic aircraft.

The EAR terrain-following flights will originate from the Boeing facility in Wichita and fly over Kansas, the Ozark Mountains in Oklahoma, the Rocky Mountains in New Mexico, the White Sands Missile Range in New Mexico to check out navigational capabilities, and west to the coast of California. The program should be concluded by June 1979.

The flights will mark the first time that three different radar functions—mapping, terrain-following, and ground-speed measurements—are accomplished by one radar.

One major test of EAR in its terrain-following mode will be to accurately measure the height of certain towers in its flight path as well as perform in bad weather, snow-covered terrain, and in electronic countermeasures environments.

During the navigation segments of the test flights, two modes will be exercised: synthetic aperture radar mapping, and position and velocity updating for the B-52's gimballed electrostatic aircraft navigation system (GEANS).

EAR has built-in fault isolation that allows it to automatically identify ninety-five percent of faulty circuits and components, down to individual line-replaceable modules or electronic "cards." Because of redundancy in critical subsystems, EAR should provide a very reliable system, officials said.

★ November was a busy month for the nation's space agency.

In a long-term scientific research project, NASA boosted into orbit on November 13 the largest X-ray telescope ever built. Aboard High Energy Astronomy Observatory-2 (dubbed "Einstein" in honor of the great physicist whose work made this field of science possible), the X-ray telescope is to probe specifics of such outer space mysteries as pulsars, quasars, exploding galaxies, and black holes.

The first HEAO, launched last year and still operational, is charting an overall survey of X-ray sources throughout the celestial sphere and has already pinpointed some 1,500 —or four times the previously known number. "Although HEAO-1 was designed for only a six-month lifetime, the quality of the data return was so excellent that an extension was authorized," NASA said.

The two HEAOs are to be followed by HEAO-3 in 1979, for the collection of celestial gamma and cosmic ray data. The orbiting telescopes are free of the atmospheric obstructions encountered by their ground-based

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SSgt. Richard I. Devault, 388th TFW, Hill AFB, Utah, has been named the first crew chief of an operational F-16 unit. The fourteen-year maintenance veteran considers the assignment an honor. For a report on the new multinational aircraft, see p. 34.

counterparts. Scientists believe that much more can be learned about the way in which X-rays and gamma rays are produced in deep space—some with incredible intensity.

In another effort on November 15, NASA orbited NATO-III-C, the third and final communications satellite that will back up its predecessors that make up the NATO Integrated Communications System (NICS).

The same day, but much farther away, under orders from earth, Pioneer Venus-2 released the first of its four planetary probes (the transporter "bus" itself is also a probe); all will enter the Venusian atmosphere on December 9. The probes each have their own command, communications, power, and other systems.

The multiprobe Pioneer Venus-2 and her sister craft—Pioneer Venus-1 which was to go into Venusian orbit December 4—together will conduct thirty experiments so that scientists can better understand the planet's weather.

★ With the possibility that the lifespan of the aging T-37 trainer can't be extended beyond its certified service in the late '80s, USAF has initiated preliminary spadework toward a successor.

The T-37, built by Cessna Aircraft Co., Wichita, Kan., was the first USAF jet trainer designed from scratch for that role. More than 1,000 A and B versions were built over the last twenty-five years, and many are serving as the basic trainer in air forces of countries around the world.

AFSC's Aeronautical Systems Division, Wright-Patterson AFB, Ohio, has already begun planning for the establishment of a "Trainer-X" System Program Office, and requests for proposals for both the engine and aircraft competitions are expected to be issued this spring. These moves are for planning purposes only, it was stressed, with no funds to be obligated before FY '80.

Trainer-X is visualized as a twin-engine (about 1,400 pounds of thrust each) aircraft with side-by-side seating and not more than 6,000 pounds (2,722 kg) maximum gross weight. It will be about the size of the T-37.

In developing the Trainer-X, USAF is emphasizing across-the-board economies—in production, operating costs, and fuel consumption. And while the use of off-the-shelf equipment will be encouraged, "new airframe and engine technology will be investigated as a means to provide a training system with the greatest possible fuel economy," officials said.

★ Helium-filled lighter-than-airships capable of hauling freight? That's the direction in which a Venezuelan company—Aerovision Desarrollo of Caracas—is heading.

Under a $12 million contract let to the UK's Aerospace Developments Ltd. of London, the first of twelve airships designed specifically for the Venezuelan firm is already flying. Filled with 160,000 cubic feet of helium, it is 165 feet (fifty m) long and 49.5 feet (fifteen m) abeam. Powered by two Lotus 170-hp engines, it is designed to facilitate use of engines of other makes in the same horsepower range.

According to officials, "This first airship will be used mainly for advertising and will carry a series of illuminated signs. Later models will be larger and designed to act as flying freighters for urgent or perishable freight."

★ Reaching a maximum altitude of 24,000 feet (7,315 m) and speed of 300 knots, Navy's new F-18A strike fighter made its first flight on November 18.

The aircraft, powered by two GE F404 engines, will make several more test flights from the McDonnell Douglas facility in St. Louis before beginning its flight evaluation program at the Naval Air Test Center in Patuxent, Md., early in 1979.

The plan is to procure at least 811 Hornets for Navy and USMC use.

With capability of nearly twice the speed of sound, the Hornet has a combat radius of more than 550 nautical miles and ferry range of more than 2,000 nautical miles.

★ NASA and the Department of Energy picked ten companies from a field of thirty-three to pursue improved methods in the manufacture of photovoltaic (solar) cells.

A reduction in the cost of producing solar cells—crystalline wafers that convert sunlight directly into electricity—is essential if DoE is to meet its 1986 goal of making photo-

Index to Advertisers

Ottawa Plays Host to Eagle Squadron Reunion

Twenty-two Americans, former fighter pilots who engaged in the air battles over Europe during the early years of World War II as members of RAF's Eagle Squadrons, held their thirty-seventh reunion in Ottawa, Canada, late in 1978.

Together with members of the Royal Canadian AFA and Canadian Fighter Pilots' Association, the Eagle Squadron veterans participated in Battle of Britain services at the city's Green Island Commonwealth Air Forces Memorial.

Col. Reade Tilley, USAF (Ret.), president of the Eagle Squadron Association, laid a wreath at the Memorial in honor of the many fallen American Eagle Squadron comrades. Wreaths were also laid by Canada's former Prime Minister, the Rt. Hon. John Diefenbaker, Maj. Gen. William Garton of the RCAFA, and Col. J. B. Peart, commander of CFB Ottawa.

During their reunion the Eagles were hosted by the Minister of Veterans Affairs, the Hon. Daniel J. MacDonald, and by Group Capt. K. J. Goodwin, Royal Air Force Attaché to Canada. They also visited the Canadian War Museum and the National Aeronautical Collection, where they fondly viewed and photographed their valiant old war birds—the Hurricane and Spitfire fighters.

A brief compilation of the war records of these twenty-two American ex-fighter pilots is worthy of special mention. Of them, seven became aces, while six were shot down and became POWs. Their combined victories include 85.5 enemy aircraft destroyed (62.5 confirmed, four unconfirmed, nineteen probables) and they damaged thirty-six more in air combat. They also destroyed twenty-seven enemy aircraft on the ground, plus numerous other targets such as tanks, trucks, trains, gun positions, etc.

For World War II air warfare history buffs, the story of the American Eagle Squadrons will be told in a book by aviation writer Vern Haugland. The book, to be published by the Ziff-Davis Publishing Co., New York, should be off press by mid-1979.

Former fighter pilots of the RAF's World War II Eagle Squadrons pose in front of a Spitfire during their 1978 reunion in Ottawa. The reunion was the group's thirty-seventh.

voltaic energy economically competitive with conventional power sources. Solar cells produced through this program must have a lifespan of more than twenty years.

The ten firms are: Arco Solar, Inc., Chatsworth, Calif.; Energy Materials Corp., Ayer, Mass.; Kayex Corp., Rochester, N. Y.; Kluicke & Soffa Industries, Inc., Horshan, Pa.; MB Associates, San Ramon, Calif.; Motorola, Inc.'s Semiconductor Group, Phoenix, Ariz.; RCA Corp., David Sarnoff Research Center, Princeton, N. J.; Sensor Technology, Inc., Chatsworth, Calif.; Siltec Corp., Menlo Park, Calif.; and Sollos, Inc., Los Angeles, Calif.

NASA's Jet Propulsion Lab, Pasadena, Calif., is program manager.

★ A remote village named Tangaye in Upper Volta, West Africa, has become the focal point of a NASA project that has potential for easing the burden of underdeveloped areas around the globe.

Tangaye is located in the semi-arid Sahel, where the rainy season is limited to July through September. During the dry months, the villagers have one reliable well; they spend hours each day hauling water by hand from its thirty-foot (9.15 m) depths. The village women also spend many hours hand-grinding flour for each meal.

Solar-cell technology may alleviate these conditions.

Under an agreement with the US Agency for International Development, NASA's Lewis Research Center, Cleveland, Ohio, is building a solar-cell electricity producing system specifically to assume these

Aerospace World

chores. It is designed to pump up to 1,200 gallons (4,542 liters) of water daily and also to grind the flour.

Success of the project could have considerable impact since, according to NASA officials, there are 3,000,000 villages in the world today without a source of electricity.

The Lewis Center has been involved in transferring space-related solar-cell technology to earthly uses since 1971, mostly under the aegis of the Department of Energy.

★ The Stuart M. Speiser Collection, twenty-two paintings with an aviation theme, was recently presented to the National Air and Space Museum, Washington, D. C. The collection is the most valuable gift of art from a private donor ever received by the museum.

The paintings are in the photo-realism school, which came into prominence in the late '60s and early '70s, and which embodies an extremely realistic style based on photographic imagery. The paintings were all commissioned in 1973.

The collection is to be exhibited in the museum's Flight and Arts Gallery in 1980. It is the gift of a senior partner in the aviation law firm of Speiser, Krause, and Madole of New York. Mr. Speiser is a WW II AAF pilot and multiengine commercial pilot who has been collecting aviation art for more than twenty years.

★ **NEWS NOTES**—Under a provision of the FY '79 DoD appropriations bill recently signed by the President, the **Marine Corps Commandant** will now be a **full member of the Joint Chiefs of Staff.** Previously, he had equal status only when matters directly concerning USMC were under discussion.

A WW II Army Air Corps veteran, **TSgt. Mary Strader,** 1901st Communications Squadron, Travis AFB, Calif., at seventy-one was believed to be the **oldest person on active duty in the armed forces** before her recent retirement.

Being restored at Dover AFB, Del., by volunteers of AFRES's 512th MAW is *Shoo Shoo Baby,* the **only WW II combat Flying Fortress known to exist** besides famous *Memphis Belle,* on display at the National Guard Armory in Memphis. *Shoo Shoo Baby,* when restored, will go to the Air Force Museum.

USAF's new **E-3A Sentry AWACS aircraft** is to assume CONUS air defense duties for the **first time in January.** E-3As flown by TAC's 552d Airborne Warning and Control Wing will operate from **Tinker AFB, Okla.**

Fourteen **World War I Overseas Flyers,** led by the organization's president, Ira Milton Jones, **journeyed to Italy** for their eighth reunion October 22–29. Among other events there was a Papal audience, a visit to the Italian Air Force Academy, and a wreath laying at the Tomb of the Unknown Soldier. ■

Gen. George S. Brown, Former Chairman, JCS

USAF Gen. George S. Brown, recently retired Chairman of the Joint Chiefs of Staff, died of cancer December 5 at the Malcolm Grow Medical Center at Andrews AFB, Md. He was sixty.

Born in Montclair, N. J., in 1918, General Brown began his military career in the Army Air Corps following graduation from West Point in 1941.

General Brown flew B-24 bombers in Europe in World War II, including the famous low-level raid against the Ploesti oil fields in Romania for which he was decorated. In the Korean War, he was Director of Operations for the Fifth Air Force. From 1968 to 1970, General Brown commanded the Seventh Air Force in Vietnam, after which he headed the Air Force Systems Command at Andrews AFB.

Promoted to Air Force Chief of Staff in August 1973, he was named Chairman of the Joint Chiefs in July 1974.

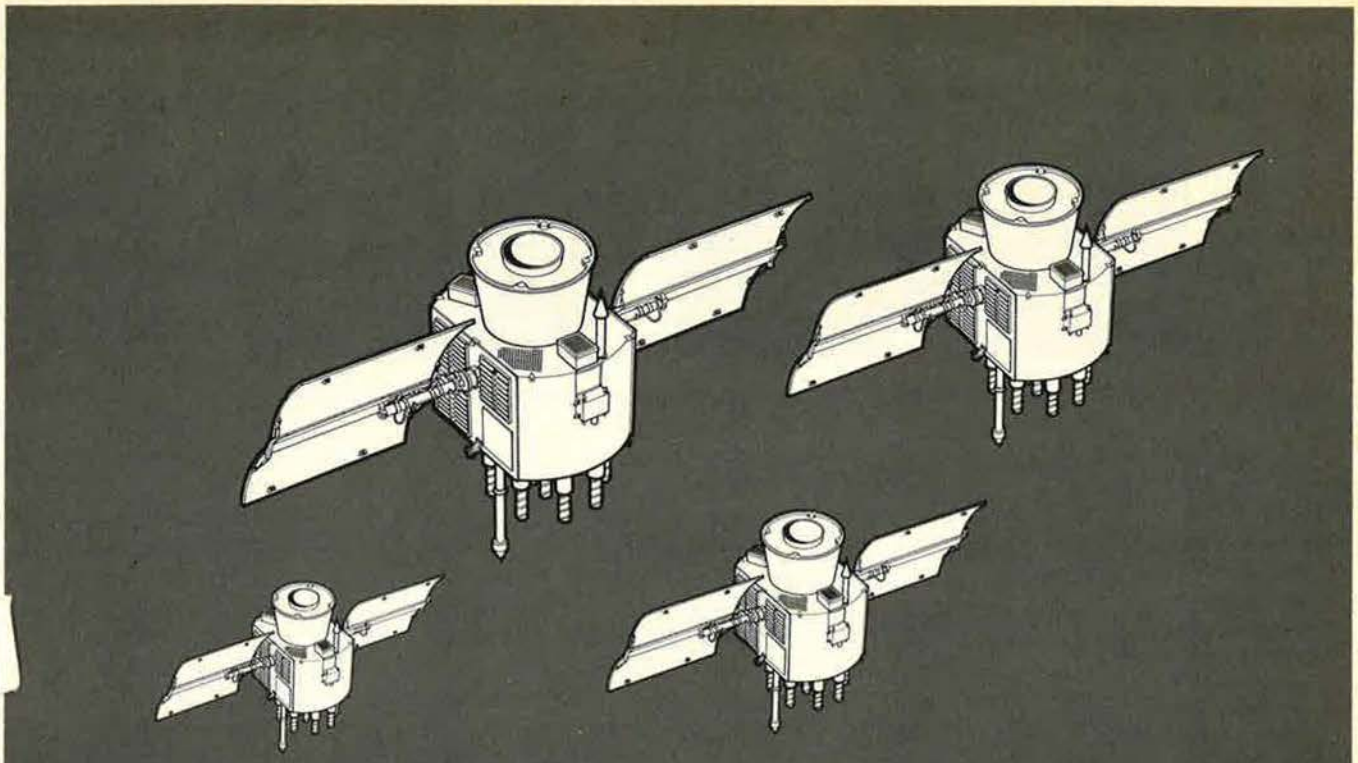
As a key military advisor to the President, General Brown testified before Congress that the JCS was in favor of putting the B-1 into production and won high praise from Defense Secretary Harold Brown for helping to develop the cruise missile after President Carter canceled B-1 production in 1977.

A friendly and outgoing man, he was frequently the focal point of controversy because of his frank comments on defense affairs.

General Brown during his retirement ceremony farewell address.

The General, a permanent member of the AFA Board of Directors, was the recipient in 1974 of AFA's H. H. Arnold Award, the organization's highest honor.

General Brown, who often said he'd have been happier in a cockpit than manning a desk in the Pentagon, retired from the Air Force last June 30, following forty-one years of active service. He is survived by his wife, Alice, two sons, and a daughter.



Meet the all-star cast that's making navigation history.

There are now four Rockwell-built Navstar satellites in 11,000-mile-high Earth orbit. And they're pointing the way to totally new standards of accuracy and convenience in world navigation. These are the first in a series of 24 Navstars to be operational by the mid-1980s for the Department of Defense's Global Positioning System.

This space-based navigation system will provide instant three-dimensional navigation to every user equipped with a GPS calculator/receiver: his longitude, latitude and altitude. The system is already being tested in aircraft, land vehicles and backpack units at a U.S. Army test range in Arizona. And it's more than living up to expectations.

As the name implies, GPS will provide a common positioning capability over the entire globe, greatly improving the navigation capabilities of America's armed forces around the world. When fully operational, it will enable users on land and sea, in the air, and in Earth orbit to calculate their positions to accuracies of 30 feet or less, their velocities to within a fraction of a mile per hour, and the exact time. All instantaneously, in any weather, anytime, anywhere on Earth.

And the best part is, GPS technology could someday provide precise and constant navigational data to airlines, general aviation, the merchant marine — even pleasure boats.

The Space Systems Group of Rockwell International is proud to be one of the prime contractors to the Space and Missile Systems Organization (SAMSO) of the U.S. Air Force — the lead service of the Department of Defense for Navstar satellite development. We're also proud to be building the reusable Space Shuttle orbiters that will launch GPS Navstars and other space systems in the 1980s and beyond.

Navstar is our kind of involvement, one of many Rockwell projects designed to bring the benefits of space down to Earth.

Rockwell International

JANE'S

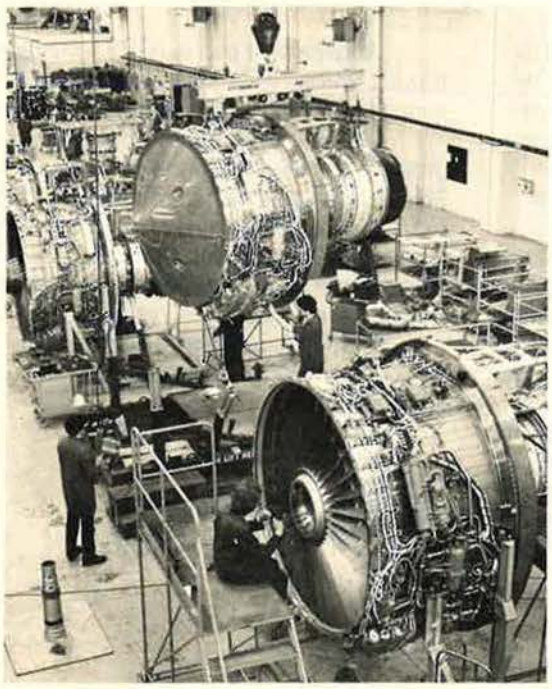
BY JOHN W. R. TAYLOR, EDITOR, JANE'S ALL THE WORLD'S AIRCRAFT

As we have since 1972, AIR FORCE Magazine begins the new year with a comprehensive review of the worldwide aerospace scene. The author, a leading authority on the world's aircraft, assesses the technological balance between East and West, and reports on the status and prospects of the aerospace industry. Of particular interest to readers is his assessment of innovations in military aircraft.

IN HIS Foreword to the first (1909) edition of *All the World's Air-ships* (the name was changed to *All the World's Aircraft* in 1910), Fred T. Jane commented: "It is, perhaps, not too much to say that the whole future of aviation rests with the engine and its general reliability." Seventy years later, few people would argue that he was wrong. The past year has emphasized repeatedly the importance of basing every kind of aerospace program on the right, reliable, power plant.

The promise of supersonic commercial air travel was quickly soured by engine problems. Concorde was conceived before it became fashionable to protest about noise pollution, so its Anglo/French designers built it around four uprated versions of the well-proven but raucous Olympus turbojet. Only as the aircraft progressed through its development program did it become clear that public objections to the engine noise, and the inevitable sonic boom, would limit Concorde's uses.

Concorde might never have got off the drawing board had its manufacturers been compelled to finance an entirely new, quieter but far more costly, power plant. Their Soviet counterparts did select turbofan engines for the Tu-144, which inaugurated Aeroflot's first scheduled supersonic passenger service between Moscow and Alma-Ata on November 1, 1977; but the inherent quietness of the basic turbofans was offset by their inadequate thrust, which required the use of afterburning, not just for takeoff and acceleration but throughout the entire period of supersonic cruising flight. This made the Tu-144 not only noisy but so fuel-thirsty that its 209,440 pounds (95,000 kg) of fuel was regarded as sufficient for only the modest 1,750 nm (3,240 km) journey from the capital to Alma-Ata. After a few months of fitful operation, even this was abandoned in mid-1978, leaving Concorde as the world's only supersonic airliner in daily, routine, operation.



Rolls-Royces for Pan Am: RB.211-524 turbofans of the kind that will power Pan American World Airways' TriStar 500s.

Poor engine overhaul life has long been an accepted norm in Soviet military circles; power plant worries are less familiar in the West. To what extent they affect the selection of engines for aircraft designed in other countries is difficult to assess; the availability of individual engines is often governed by politics or by unwillingness to pass on new technological advances to any but the closest of allies.

It is noteworthy that Rolls-Royce of the UK, after nearly forty successful years in the aircraft gas-turbine business, remains the largest aero-engine manufacturer in the world, with 58,800 employees. The way in which Rolls-Royce Nene turbojets made possible the first significant generation of Soviet combat jets, spearheaded by the MiG-15, is history that could well be repeated if Britain agreed to supply the RB.211 three-spool turbofans that would make such a difference to the potential of the 350-passenger Ilyushin Il-86 airbus.

Content with an engine from the previous generation, China is building its next series of fighters around the well-proven two-spool Rolls-Royce Spey, power plant of the USAF/USN A-7 Corsair II and RAF Phantoms, Buccaneers and Nimrods. Little news of the activities of the Chinese aviation centers comes out of Peking but the magazine *Aviation Knowledge* reporte

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China's intention to begin by importing from Britain fifty Spey 202M afterburning turbofans (each rated at 20,515 lb st; 91.25 kN) while a factory in Sian Province was gearing up for production. First application for the Spey was stated to be in a Mach 2.4 fighter designated F-12, which would be ready for flight testing in 1980.

International respect for even this earlier example of Rolls-Royce expertise was reflected during an exclusive briefing which the writer received concerning the new AMX combat aircraft which Aeritalia is studying to fulfill a key Italian Air Force requirement for the mid-eighties, and which may well be merged eventually with features of Saab's now-abandoned B3LA design to meet also a parallel need of the Swedish Air Force.

The basic Italian demands include ability to take over interdiction, counterair, reconnaissance, antiship, and close air support duties performed currently by four different types of aircraft (G91, G91Y, F-104G, and F-104S); a maximum takeoff weight of around 18,000–20,000 lb (8,165–9,000 kg); high subsonic speed at very low level, with low gust response; a combat radius of 180 nm (333 km); ability to carry a wide variety of external weapons, including laser-guided missiles; and self-defense capability with IR air-to-air missiles.

After months of careful evaluation of four power plants that offered the right combination of performance and aircraft thrust-to-weight ratio in the 0.5 to 0.7 bracket, the Italians chose the same basic engine as the Chinese—a Spey. Almost simultaneously, the Rolls-Royce RB.211-535 was named as the launch engine for the new Boeing 757 short/medium-range twin-turbofan transport. Earlier, when ordering a fleet of Lockheed TriStars, Pan American had raised many eyebrows by deciding to stay with the RB.211s that power all TriStars in service.

Altogether, then, a good year for Rolls-Royce, with a £150 million contract to power Delta's TriStars now supplementing the £250 million Pan Am engine order, and a likely £300 million from the first two Boeing 757 sales to British Airways and Eastern Air Lines. Added to Eastern's earlier decision to buy a large fleet of European Airbus A300s, this marks a major upswing in Europe's commercial transport fortunes.

British-French Aerospace Relations

After too-prolonged deliberation, Britain indicated that it would like to rejoin the European Airbus team that it ought never to have left. The French government objected on the grounds that Rolls-Royce is supplying engines for the Boeing 757, which it regarded as a direct competitor to the forthcoming Airbus A310. It insisted for a time that membership should be considered only if British Airways agreed to fly A300s or A310s; failing this, France was reluctant to concede more than a very junior partnership, giving the UK no rights in such commercial matters as helping to fix the aircraft's price to customers. To its eternal shame, the British government agreed to accept terms only a little less humiliating, in order to get back into the program.

Such haggling and suspicion prove mainly that aerospace business is handled better by engineers who respect one another than by governments. An industry as large as that of the UK, second in size only to that of the USA in the West, can provide engines for half the transports of the world, whether or not they compete with each other, *and* still choose to work simultaneously on a whole range of airframe designs, should they be justified by national need or international marketing prospects.

First TriStar 500 to fly, in British Airways insignia.

One full year ago, our 1978 "Aerospace Review" contained the remark that "Even the staunchest advocates of nationalization must

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have been dismayed by the absence of new life and drive since British Aerospace came into being officially in April 1977. . . . A decision on the future of the four-turbofan HS 146 short-haul transport seems as far away as ever. . . . Programs that might, one day, fill almost-empty production floors include the BAC X-Eleven or Aérospatiale A.200 twin-turbofan transports, or an aircraft embodying features of both, built as an Anglo-French collaborative venture; and joint manufacture of the Boeing 7N7 in partnership with the US parent company."

Fifteen months after its April 1977 birth, British Aerospace (BAe) was allowed to give the go-ahead to the 146, on which design had started originally in 1973 for an intended December 1975 first flight. The program still has some merit, not least because it involves partners in the USA, where Avco will build the engines and wings, and Sweden, where Saab-Scania hopes to manufacture all the control surfaces. BAe anticipates the sale of 225 basic eighty-eight-seat 146-100s and 135 stretched 102-seat 146-200s by 1990, ten years after the first flight of the prototype.

Since the relaunch of the BAe 146, the Airbus program has emerged as a fulfillment of the hoped-for new link with France. The Boeing 7N7 has materialized as the 757, with Rolls-Royce engines; but the UK is said to have declined an invitation to manufacture the wings as a subcontractor. This might be wise. Quite apart from the fact that such a deal might have ended all hope of acceptance as an Airbus partner, some airlines regard the 757 as little more than a stretched 727 with two engines and a new wing. It lacks the now-fashionable wide-body fuselage and may not fare well against designs of the 1980s, despite the reputation as world leader that Boeing established in the airliner business throughout the 1960s and '70s.

Soviet Aeronautics

This raises the worrying thought that, while Britain is too lethargic and France too nationalistic for the good of their industries, the United States may be overconfident at this vital moment.

A glance at the listings in the latest *Jane's* shows that US aircraft hold all but one of the current absolute records for speed, height, and distance recognized by the Fédération Aéronautique Internationale. Boeing is the only manufacturer in the world to have built more than 1,000 commercial jet transports of one basic type, and more than 3,200 in total. American astronauts are alone in having walked on the moon. . . . The catalog of US achievements seems endless, but not one of the aircraft holding the absolute records (including the Soviet E-266, which holds the absolute height record) was designed during the past fifteen years; the best-selling Boeing 727 first flew in 1963; and it is six years since anyone journeyed to the moon.

"So what?" may be the instant reaction to facts of that kind. No other nation is now capable of challenging the US records; Boeing already has a family of improved jetliners under development; and NASA will soon begin the exciting and profitable task of planting satellites in space from the manned Shuttle Orbiter.

Nor is there menace in the fact that European Airbuses are heading west to make their mark in the nation where powered flight was born. This is, however, a sign that Europe's aerospace industry is emerging with confidence from years of political indifference and crippling economic restrictions, to regain the place among the pacesetters that its designers and engineers never really lost. More significant, what competition there is for revolutionary concepts like the Concorde and V/STOL Harrier has come not from the United States but from the Soviet Union, except for McDonnell Douglas's fine work in upgrading the Harrier to AV-8B standard.

The high quality of Soviet airframe ingenuity is too often negated by aero-engine deficiencies, but at least the Russians have tried; experience suggests that they will not be deterred for long by initial limitations or setbacks.

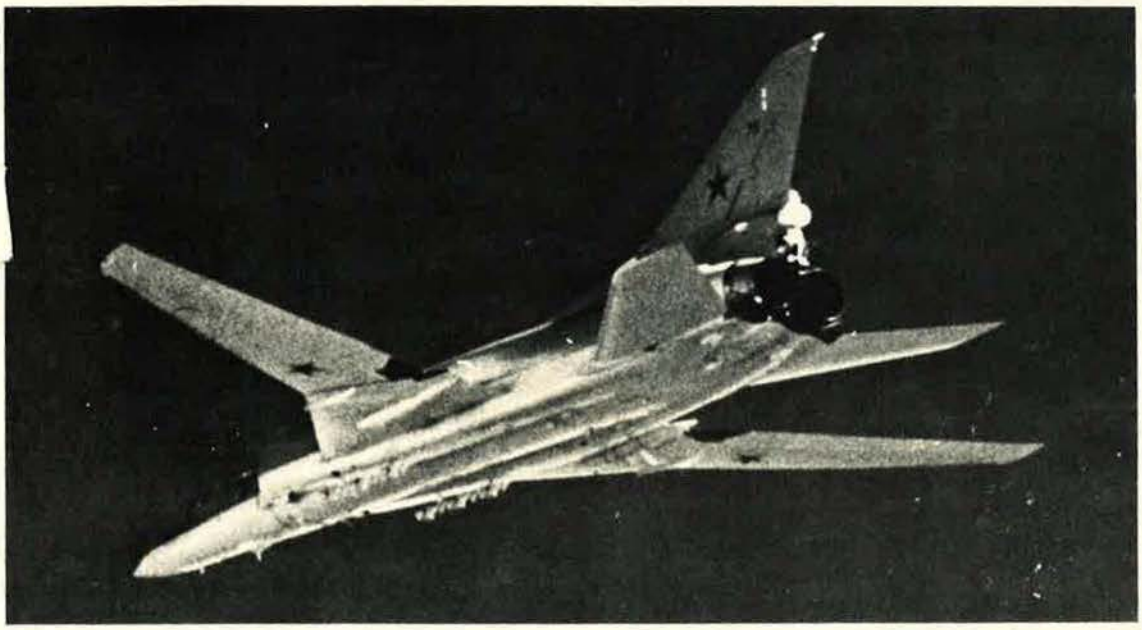
Only a lunatic would wish the US/Soviet Strategic Arms Limitation Talks (SALT) to fail; but it is absolutely vital to maintain a precise balance of power for peace until SALT I and II have been followed by a SALT *x* that makes all strategic weapons unnecessary. Nothing is to be gained by agreeing to regard the Soviet Tu-26 Backfire bomber as a tactical aircraft, just to reach a SALT II agreement, when everyone knows that it is capable of attacking virtually any target in the USA. The suggestion that the Soviet Air Force might agree to ensure Backfire's limitation to tactical roles by removing its inflight refueling probe is so naïve that it would be the joke of the year if we were not dealing in terms of millions of dead in Washington and Chicago, Moscow and Novosibirsk.

The new photograph of Backfire-B illustrating

Model of the 245-seat Airbus A310, which attracted Britain back into the European Airbus program.

this article should leave little doubt of the aircraft's quality. Nor do the Russians regard it as the last in the line of big bombers in a missile age. One of the many interesting revelations in Secretary Harold Brown's FY '79 DoD Report was that: "We now expect to see the first prototype of a new modern heavy bomber in the near future [which], if deployed, would presumably replace the Bisons and Bears as the backbone of the Soviet intercontinental bomber force."

Lacking access to satellite intelligence pictures, we cannot know if that bomber has yet begun its flight trials, or what it is like. Perhaps that is as well, for what we *do* know about hundreds of Backfires and F-111-class Su-19 Fencers, and other in-service Soviet military aircraft, is frightening enough.



ABOVE: McDonnell Douglas AV-8B second-generation Harrier with a graphite composite wing of supercritical section.
LEFT: First good-quality photograph of a Soviet Tu-26 Backfire-B supersonic bomber, taken from an intercepting fighter of the Swedish Air Force over international waters.

According to a recent television report, the US Army has to hold the Fulda Gap with fewer than fifty HueyCobra armed helicopters, against thousands of Warsaw Pact tanks backed up by every imaginable kind of mobile surface-to-air missile unit and tactical aircraft. By comparison, the Soviet air forces command more than 800 extremely formidable Mi-24 Hind assault helicopters and nearly 5,000 Mi-8 Hip assault transports with far heavier armament than is generally realized.

A decade has passed since the Soviet armed forces masked their imminent invasion of a rebellious Czechoslovakia under a blanket of electronic jamming. We can only guess what they might achieve today on each side of the East/West border across Europe. Gen. George S. Brown, USAF, then Joint Chiefs of Staff Chairman, admitted in his FY '79 military posture statement that "the Warsaw Pact dominates NATO in a number of relevant capabilities, such as chemical warfare and electronic warfare."

—Camera Press

The Soviets have more than 800 Mi-24 Hind assault helicopters. The ones shown here are Hind-D gunships—the most formidable helicopters yet put into service anywhere in the world.

JANE'S AEROSPACE REVIEW 1978|79

—Camera Press

—Camera Press

ABOVE, TOP: The other side of the Fulda Gap: Soviet ground forces demonstrate the major threat confronting NATO in Europe.
ABOVE: A few of the 5,000 Mi-8 Hip assault transport helicopters available to the Soviet armed forces.

What progress have the USA and NATO made in the ensuing twelve months, to ensure that Warsaw Pact dominance in these and other fields does not prejudice the balanced "peace through fear" that has been a sadly acceptable alternative to annihilation throughout the lifetime of many of our children?

B-1 and ALCM

We suggested in *Jane's*, one year ago, that America might have taken a suicidal decision in canceling the B-1 bomber. *Jane's* assured interviewers repeatedly that this conclusion implied no lack of respect for President Carter, whose motives then, and subsequent work for peace in the Middle East and with the Soviet Union, have been laudable. In any case, all was not lost. When he canceled the B-1 in favor of cruise missiles, the President was careful to explain that he intended to continue the existing test and development program, including completion of the fourth prototype, "in order to provide the needed technical base in the event that the alternative systems should run into difficulty."

The cruise missiles' effectiveness reportedly was reduced dramatically by US acceptance of a 2,500 km (1,553 miles) range limitation for the air-launched versions. Knowing where the potential targets are, it became easy for the Soviet Union to plan concentration of its air defenses in the few zones from which the weapons might be launched from aircraft that would hardly be committed to long penetration flights over its territory.

Nobody doubts the integrity of the veteran B-52s that will be the first-generation cruise missile carriers, but they belong to an earlier age of warfare. It has been proposed that the USAF should be given developed versions of a wide-body transport or of a military aircraft such as the C-5, C-14, C-15, or a B-1 variant as follow-on missile platforms.

Having kept his defense-cutting election promise by canceling the B-1, President Carter can now display the wisdom of his subsequent decision to keep the test-and-development program alive in case such an aircraft may be needed. The proposed Rockwell Strategic Weapon Launcher (SWL) would inherit all the proven technology of the B-1 program, but would also accord with the reported remark of Defense Secretary Brown to the House Budget Committee that "We're not foreclosing another manned penetrating bomber. We're just saying it's not going to be the B-1."

Theater Air Warfare Systems

Only the USA and the USSR need long-range strategic attack aircraft. Other nations must provide support at lower levels, to prevent a confrontation (intentional or not, and perhaps started by lesser opponents) from escalating into Armageddon. The requirement for them is a new generation of aircraft that may appear less sophisticated than America's SWL and Tomcat, or the Soviet Union's Backfire and Fencer, but which can embody new standards of accuracy, reliability, and survivability.

It became clear during 1978 that Germany, Italy, and the UK, together, have developed a fine aircraft in this category under the Panavia Tornado program. For the RAF in particular, with its advantage of long warning times of impending air attack, the Tornado offers both an interdictor able to be trusted at that service's usual operating ceiling of sixty meters (200 feet), and an interceptor able to climb to where it is needed and then wait confidently for intruders for very long periods. Any of the problems that are inevitable with an all-new weapon system and power plant have two more years in which

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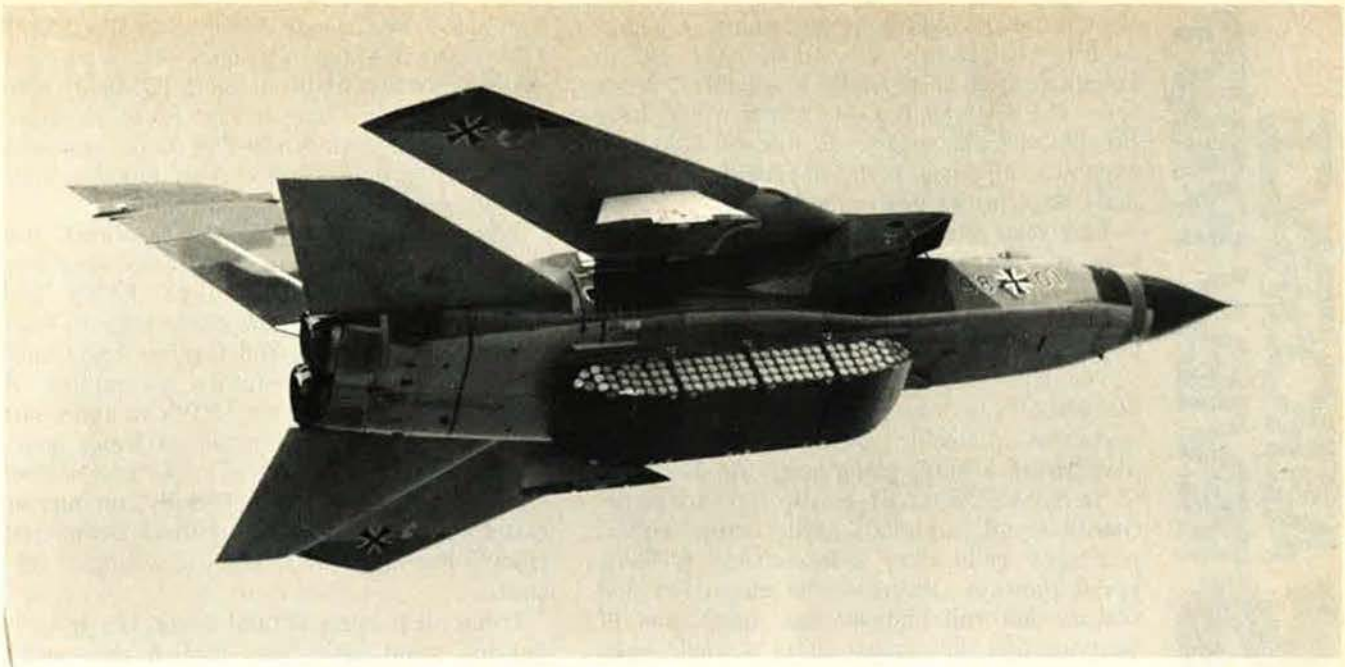
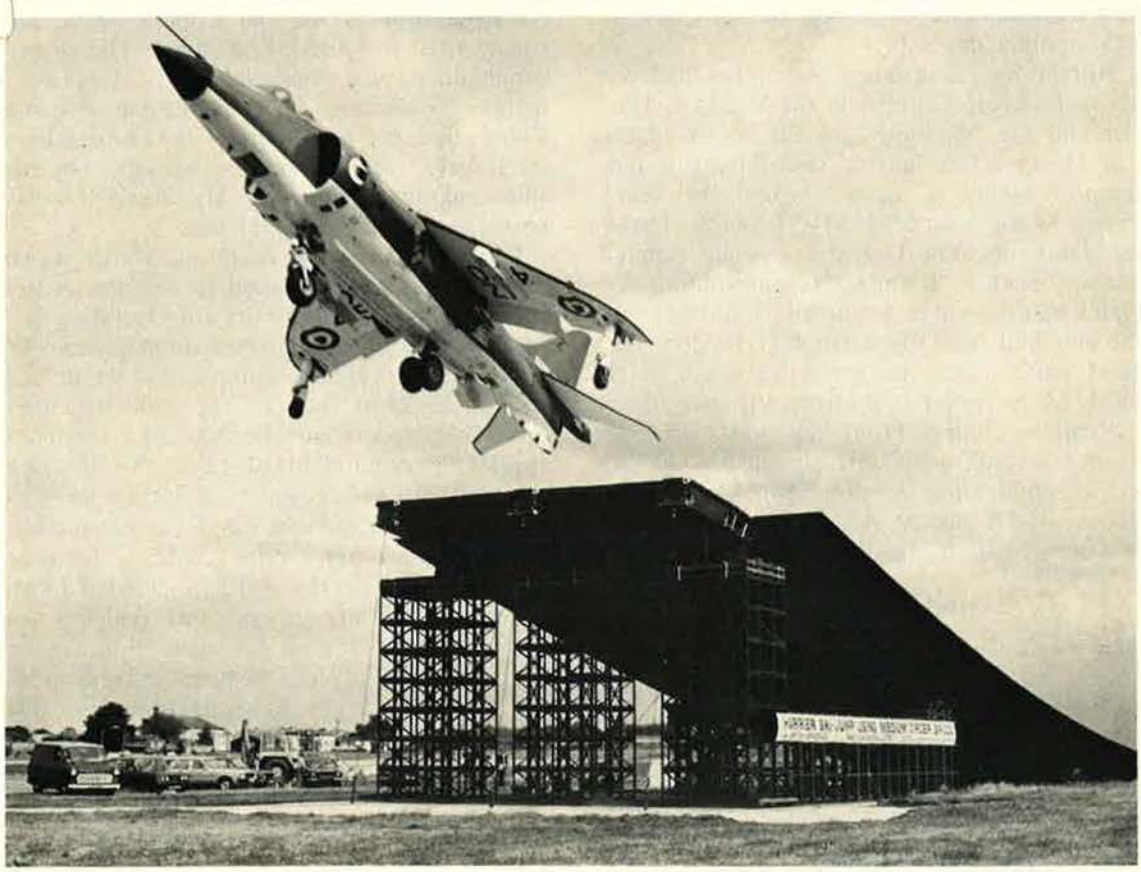




ABOVE: A Tornado, in Luftwaffe markings, armed with the new MW-1 weapon system that ejects to each side of the aircraft a very large number of small munitions. LEFT: The prototype Sea Harrier taking off from a "ski-jump" ramp that enables it to carry a much increased payload.

to be eliminated, and have not, in any case, proved very worrying.

Ideas on the characteristics required by modern combat aircraft are changing rapidly, and this led to the Tornado's being what might be described as the most consistently underrated military aircraft for the 1980s. Why the RAF chose it was explained by Group Captain John Fraser, Deputy Director of the UK Ministry of Defence Operational Requirements Branch, during a press briefing at the Aeroplane & Armament Experimental Establishment, Boscombe Down, in August of last year. After outlining the features of the ADV Tornado F.2, he explained:

"Obviously, it was necessary to evaluate the alternatives, and the main contenders were examined in some detail. The General Dynamics F-16 lacks the fundamental all-weather capability we need, and the McDonnell Douglas F-15, though a good [NATO] Central Region fighter, is a single-seat aircraft with only a

limited radar and electronic counter-countermeasures capability. We would have had to largely reequip it to make it suitable for our role. The Grumman F-14, which would have broadly met our needs, was and still is far too expensive and had to be discarded at a very early stage in our deliberations."

This does not, of course, imply any criticism of the three US fighters to which the group captain referred. Each is superb for the tasks for which it was designed, but Europe's circumstances often call for European solutions.

The days when the effectiveness of a combat aeroplane was measured solely in terms of maximum attainable speed and ceiling have long passed. Today's major assets are the ability to terrain-follow under trustworthy automatic control in all conditions during strike sorties; prolonged endurance; independence of long, paved runways; availability of electronics and sensors that will pinpoint any target, and of weapons that will destroy it in a single pass; and the assurance of getting back to base to fight another day.

Britain has contributed techniques that are yet to be accepted fully, in the V/STOL Harrier and the "ski-jump" takeoff system of the Sea Harrier. Germany is contributing a new weapon against a massive assault by heavy armor, in the form of its MW-1 family of scatter munitions. The United States has pointed the way back to a concept of hard-hitting and highly maneuverable ground attack aircraft with the Fairchild A-10 Thunderbolt II, which makes good sense under the protective cover of an EF-111A to render it electronically invisible.

Russia's Central Front superiority in electronic warfare would be diminished greatly by a combination of the EF-111A and the Boeing E-3A Sentry AWACS, which is still in a class by itself. The Thunderbolt II has also proved its effectiveness during trials like JAWS (Joint Attack Weapon Systems) II, in which it demonstrated its ability to work efficiently with Army helicopters and ground forces in simulated battle against Soviet-type tanks, armored personnel carriers, surface-to-air missiles, anti-aircraft guns, and fighter aircraft.

Fairchild Republic A-10 demonstrating its low-level maneuverability during the JAWS II combat exercise.

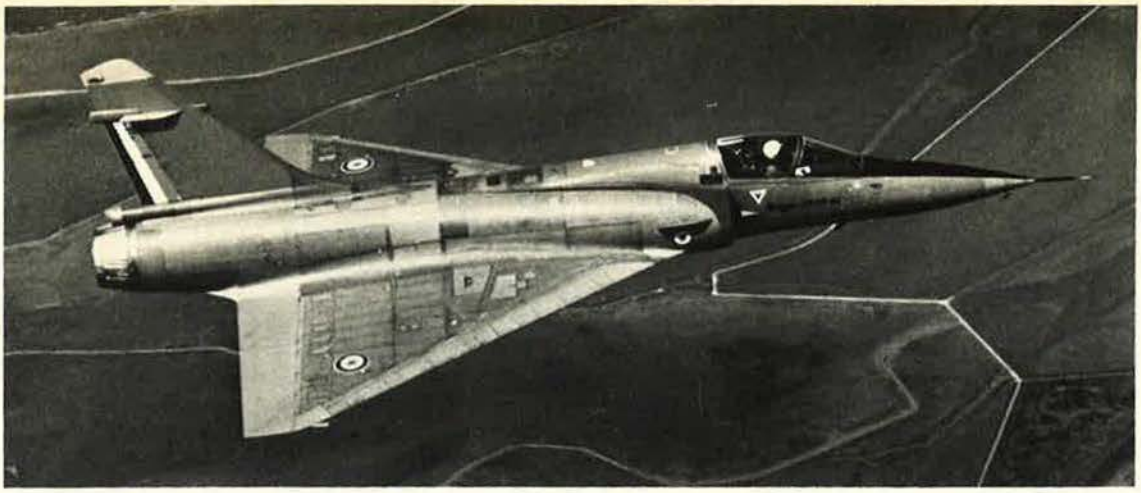
America's ability to deploy captured and simulated examples of modern Soviet weaponry and aircraft in exercises like JAWS and Red Flag is giving a new sharp edge to both current NATO tactics and features being built into the present and future generations of weapons. Each day of the JAWS scenario, last summer, began with a threatened armor penetration by an "enemy" force in the area of Fort Hunter Liggett, Calif. The friendly commander called up assistance from artillery, scout and HueyCobra helicopters, and close-support aircraft.

Using all possible natural cover, the ground-hugging scout helicopters located the enemy air defense units for the Cobras, while the enemy tried to knock them down. The enemy commander could also call in F-5 "Aggressor" fighters to simulate MiGs in dealing with the Cobras and A-10s. Results of the ensuing low-level melee were monitored by gun cameras (film and video), which quickly identified weaknesses in tactics and techniques.

Other tests, at Shaw AFB and Myrtle Beach AFB, S. C., were designed to test the A-10's effectiveness under the Forward Operating Location (FOL) concept of rearward maintenance/forward employment conditions that might face aircraft based in Europe. The eight Thunderbolt II's ten pilots and the sixty-three logistics/support personnel involved in the exercise achieved an unprecedented 6.0 sortie rate, representing six missions a day for each aircraft.

Such figures are worth recording because, like the Tornado, the A-10 has tended to be underrated. If any grounds for criticism remain, they could soon be silenced because a two-seat night/adverse weather conversion of an A-10 will begin its evaluation tests this spring. Dimensionally, it will differ from the standard single-seater only by an increase of twenty inches (51 cm) in the height of the tail. Internally, apart from the tandem seating, it will have new, advanced electronics for navigation, terrain avoidance, target acquisition, and weapons delivery. Even the present A-10 is no fair-weather-only aircraft, as its maneuverability permits it to operate in weather with ceilings well below 1,000 feet (305 m) and with less than two miles (3.2 km) visibility. However, the Warsaw Pact forces have demonstrated that they can conduct major land and air offensives by night, and this makes it imperative for NATO to ensure its own round-the-clock capability.

In view of this, it is good news that the



Dassault's Mirage 2000, which will equip most of the French Air Force's combat units in the '80s.

USAF is evaluating the potential of the Tornado, along with several other US and European designs, as its next attack aircraft for the Central Front. It is equally reassuring that the RAF will not give up easily its preference for a STOVL (short takeoff/vertical landing) replacement for the Harrier and Jaguar, despite the advantages of a suggested three-nation partnership with Germany and France, which are satisfied with STOL.

A Changing Export Scene

The new French Mirage 2000 fighter, powered by a single M53 turbofan, was one of the stars of the 1978 Farnborough Air Show, displaying both exceptional maneuverability and a speed range that *Flight International's* Piper Seneca found hard to match at the low-speed end during an air-to-air photographic session. As the type destined to make up a high proportion of the French Air Force's first-line strength of 450 aircraft by the late '80s, it looks good; but Marcel Dassault himself has said that no country should be without a twin-engine combat aeroplane. He is backing his words by building a prototype of the Super Mirage 4000, with two M53s—probably the most expensive private venture in history and prompted by the likelihood of an oil-rich Middle Eastern market.

Unfortunately, the ever-changing pattern of politics is playing havoc with the smooth progress of such lucrative possibilities. Israel was prevented from concluding its first big export sale of Kfirs, to Ecuador, by a US veto on supply of the fighter's General Electric J79 turbojets. Italy has had to overcome a similar veto on the export of twenty Aeritalia G222 turboprop transports to Libya by embarking on a new version with Rolls-Royce Tynes instead of the standard GE T64s.

No such foreign component problems hamper British Aerospace in its negotiations with China, which has expressed interest in a very large order for Harriers. This time, the problem is said to involve political disapproval by NATO partners who fear that such a deal might, at the very least, sour relationships with the Soviet Union.

Life can be hard for manufacturers under such circumstances. Nor is this the only kind of problem affecting overseas business.

In theory, it can be highly profitable to assist nations like Iran, Egypt, South Korea, Greece, Libya, and Turkey to establish their own industries in which to manufacture aircraft under license; but what happens when US, French, or British designers and technicians find the terms of employment offered by the licensees more attractive than those offered by the parents, and decide to change jobs? The licensee then gets an instant transfer of technology far greater than any carefully calculated transfer under a licensed manufacturing agreement, bringing nearer the day when the parent will no longer be needed, license fees will cease, and another market will be closed.

New national industries in countries like the Philippines and Indonesia are already developing indigenous designs of great promise. The Indonesian LAPAN XT-400, for example, is an eight-seat light STOL transport in the class of the Britten-Norman Islander but with an extremely practical freight door under the upswept rear cabin structure.

First news of such projects made 1978 a fascinating year for students of the aviation scene, but few of the world's major aerospace industries are likely to recall it with much joy. Nor does the future offer entirely dazzling prospects.

Eventually, someone will have to face up to the fact that hydrocarbon fuels will dry up, despite the discovery of unexpected short-term reserves in new areas. Far worse is the growing certainty that charged particle weapons, or something equally sinister, will render existing forms of land, sea, and air warfare as obsolete as the crossbow by the end of our century, perhaps giving the combat aircraft builders nothing to do—even if they are fortunate enough to stay alive. ■

A new approach to the development of aircraft resulted in a low-cost, high-performance fighter that is destined to play one of the critical roles in US national security.

The F-16 Goes Operational

BY BONNER DAY, SENIOR EDITOR

A fighter version of the F-16, above, takes off for a test flight. At right, General Dynamics workers at the F-16 assembly line in Fort Worth, Tex.

JANUARY marks the start of a critical period for the F-16 multimission fighter, the newest aircraft in the Air Force inventory.

At Hill AFB, Utah, the first operational aircraft is scheduled to be turned over to the 388th Tactical Fighter Wing on January 6. By the end of the year, sixty-four are to be delivered, of a total of seventy-eight that will be assigned to the unit.

And on January 26, the Belgian Air Force is to accept its first model of the plane assembled in Europe.

Since the first flight of the prototype in February 1974, the F-16 has been flown by test pilots. Now the F-16 moves into the hands of those responsible for flying and maintaining it in combat, the operations people.

So far, the plane has been hailed as one of the big successes in Air Force R&D history.

Test pilots are impressed with its flight performance. NATO diplomats regard it as a model in efforts to put standard sophisticated weapons in

This view of an F-16B fighter/trainer shows the camouflage scheme. Each F-16 squadron will have two "B" models.

the hands of NATO allies. Defense Department managers cite it as evidence that modern, sophisticated weapons can be developed without the technological problems and massive cost overruns that occurred in many Pentagon programs during the 1960s. Defense officials are pleased with the cost of the F-16, which has remained substantially lower than the price of the F-15 and F-14, the other two major fighter aircraft entering the US inventory.

Successful Testing

Before the scheduled turnover of operational F-16s, the aircraft was tested extensively at Edwards AFB, Calif. The joint test team consisted of pilots from General Dynamics, Air Force Systems Command, Air Force Test and Evaluation Center, Tactical Air Command, and pilots from the air forces of the four participating European countries.

The aircraft's performance, propulsion, stability, and control were primary objectives of the tests. But test pilots were also charged with exploring the plane's ability to perform air-superiority and support missions. Ground testing involved extensive evaluation of repair and maintenance operations.

At the test center, two prototype F-16s and eight preproduction versions, by mid-November, had flown more than 2,100 flights totaling some 2,600 hours.

One test pilot, Col. James G. Rider, formerly director of the F-16 Joint Test Force at Edwards AFB and now assistant deputy commander for operations for the F-16 at the 388th Tactical Fighter Wing, has flown more than 320 hours in the aircraft. (*See* AIR FORCE *Magazine, October '76, for a pilot report on the YF-16 by Colonel Rider.*)

In a recent interview with AIR FORCE Magazine, Colonel Rider said that no significant changes were made in the plane as a result of flight and other tests of the preproduction model. Overall, he said, the production model is proving to be as efficient in flight as the prototypes were.

Colonel Rider's greatest praise is for the high Gs the plane is capable of withstanding. "The plane is built for the Gs necessary for tight and hard maneuverability. But the cockpit environment—the side stick controller and the thirty-degree inclination of the seat—also makes it possible for the pilot to actually use the higher Gs that are available." Colonel Rider says that seven Gs in an F-16 feel like five Gs in another airplane.

Test pilots also have found that the electronic flight control system, the so-called "fly-by-wire" feature, is as impressive to fly as it promised to be in design studies. Colonel Rider says this feature makes it virtually impossible for the plane to go into an out-of-control spin.

Early concerns about the engine's performance have been resolved. The aircraft is equipped with the Pratt & Whitney F100 engine, which produces twenty-five percent more power per pound of engine weight than the best previous fighter engine. The same engine powers the F-15.

Though some of the engines in F-15s have experienced stall-stagnation problems over the past six years, Air Force and Pratt & Whitney officials say the faults are being corrected and will not be a factor in the F-16. Engine stalls already have been reduced to less than two per 1,000 flight hours. The engine in the F-16 is expected to have a stall stagnation rate between .4 and .2 per 1,000 engine flight hours, which Air Force experts say is acceptable.

Costs and Benefits

Defense officials have been less pleased with the added costs associated with multinational production. There is general agreement, however, that the increased cost has been more than made up in other benefits.

Six months after the US decision to buy the F-16 was announced in January 1975, four European governments signed a memorandum of understanding with the US to buy and coproduce the aircraft. The five countries agreed that the US would buy at least 650 of the planes, and the European countries would buy 348. Of this total, Belgium would buy

Four NATO allies are buying the F-16. The Royal Netherlands Air Force has contracted to buy 102.

The Royal Danish Air Force has ordered 58 of the fighters, a major purchase for the small country.

116; the Netherlands, 102; Norway, seventy-two; and Denmark, fifty-eight.

The Europeans will pay a share of the development costs for the aircraft and its support equipment. This amounts to more than one half million dollars per aircraft. In addition, more than $1 billion has been added to US exports because of the European buy, which translates into at least 50,000 additional American jobs.

But Defense officials say less tangible benefits were the key to the decision to coproduce the plane. Says one Air Force officer: "From the NATO point of view, the joint production contract is the most important thing that ever happened in aircraft procurement."

Because the plane is being built and flown in Europe as well as the US, spare parts and repair facilities will be more readily available. Air Force planners can foresee times when aircraft down at allied airfields can be repaired and rearmed immediately, without the need to call men and equipment from a US base. In a war, the advantages of commonality would be multiplied, Air Force experts say.

The five NATO members are working together, not only on testing the plane, but on tactics to address the Warsaw Pact threat.

The management of the F-16 program is extremely complex, and the division of responsibilities, contracting, and multinational decision-making have presented many problems. But Air Force officers say the experience gained in the F-16 program now can be used in future multinational projects.

The plan calls for the four European nations to produce ten percent of the procurement value of the first 650 US Air Force aircraft, forty percent of the procurement value of aircraft purchased by the European countries, and fifteen percent of the procurement value for planes sold to other countries.

Two other countries have already signed up: Iran wants to buy 160, and Israel, seventy-five. Other countries have indicated a desire to buy the F-16, if the US Administration permits.

In addition to the assembly plant in Fort Worth, Tex., final airframe assembly lines have been established in Belgium and the Netherlands. The first Belgian Air Force plane was assembled at the Belgian plant.

The procurement value of the planned buy of 348 aircraft to the four European countries is $2.8 billion with a "not-to-exceed" contract unit price of $6.09 million, in 1975 dollars. The Air Force estimates that over the life of the longer US purchase program the unit price will average $10.76 million, which would mean a total program acquisition cost of $15 billion.

Military Missions

But while Defense Department officials see diplomatic and financial benefits, the military advantages of the plane weigh more heavily with Air Force officers. The Air Force pilots who have flown the plane are the most impressed, praising its flight controls in particular.

Already, the F-16 has become an integral part of the NATO strategy to counter the buildup of Soviet Air Forces in Europe. US policymakers decided on a mix of F-15s, which are more sophisticated but also more expensive, and the simpler F-16s, in an effort to retain NATO's qualitative advantage and partially offset the Soviet and Warsaw Pact numerical advantage in aircraft.

The F-16 will have two major roles as it is deployed in Europe. It is designed to augment the F-15 in achieving air superiority in the opening stages of a war. Once NATO forces gain control of the air, the F-16 would supplement the F-111, F-4, and A-10 aircraft in air-to-ground missions.

Because it will eventually replace the Air Force F-4, which has a nuclear strike role, the F-16 will also be equipped to conduct nuclear missions.

In nine years, the F-16 thus has grown from a study of modern aerospace technology to a multibillion fighter program that is vital to US and NATO defenses. ■

F-16s bought by the Belgian Air Force, some 116 aircraft, will be assembled in Belgium.

The Royal Norwegian Air Force will buy 72 F-16s in the major NATO standardization program.

China's Military Potential:
A Growing US Dilemma

China is on the move, looking for arms and allies as it confronts military threats on its borders with the Soviet Union and Vietnam. The search is less a change of heart than a recognition of weakness.

BY BONNER DAY
SENIOR EDITOR

SINCE the Shanghai Communiqué, signed by President Nixon and the rulers of the People's Republic of China (PRC) in 1972, US diplomats and military men have been looking at China with new appreciation.

There is no question of China's potential to be a truly international superpower. It has the world's largest population, a strategic location, and untapped natural wealth in oil and other resources.

But that military and economic potential, the cause of so much interest and concern in the rest of the world, has not as yet been developed, and is not expected to be for decades to come.

For the US, that potential and how it is developed pose a basic foreign-policy challenge in the years ahead. If the US decides to help, with diplomatic, financial, and technical assistance, it risks strengthening a rival and potential enemy.

If, on the other hand, China develops its potential without US assistance, the short-term advantage of delaying its coming to full industrial and military power may be even more costly to America, should this policy embitter China's leaders toward the US.

Adding immediacy to the problem is the fact that China is engaged in shooting battles and military maneuvering on two widely separated fronts.

In the north, the PRC has up to half its military might either along the borders or in support, facing the Soviet Union and Outer Mongolia, a Soviet client state.

And, in Southeast Asia, Chinese and Vietnamese troops are exchanging fire while their government leaders trade accusations of aggression.

What is the fighting about? On the surface, territorial disputes. In the border talks that have been going on for a decade, the Russians charge the Chinese have laid claims to

An island in the Ussuri River and the Vietnamese border have been the scenes of the latest fighting between mainland China and two of its Communist neighbors.

580,000 square miles of Soviet territory. China's current leaders contend that China, under the Manchu Dynasty in the 1800s, was forced into unfair treaties with Czarist Russia that ceded the area north and east of the Amur and Ussuri Rivers to the Soviet Union.

The dispute between China and Vietnam also is over borders, but far less territory is involved. Experts on Asia say the dispute for the most part involves a few square miles on either side of the present Sino-Vietnamese border.

Beyond territorial controversies, however, there is the much deeper division over ideology and competition within the Communist world. In the case of the Sino-Soviet dispute, a turning point was reached with Soviet Premier Khrushchev's reported refusal to back Mao Tse-tung, then chairman of the Chinese Communist Party, in his plan to attack Taiwan in September 1958. In the case of Vietnam, China is disturbed about Hanoi's assault on neighboring Cambodia, its growing authority in Southeast Asia, and its relations with Moscow and what this means to China's future.

Shooting Wars

How much actual shooting is going on? US government sources say military actions along the Russian border periodically occur, but with less frequency and between fewer numbers of troops than in earlier years. This decline was aided in part by a pullback of Chinese units from tension points along the border.

Still, the Soviet Union has an estimated forty-three divisions stationed in the four military districts bordering China and in Outer Mongolia. This force is backed by between one-fifth and one-fourth of Moscow's tactical air units within striking distance of Chinese targets.

Facing the Soviet military forces are about one-quarter of China's military might. Another quarter of its military strength is in direct support of the units deployed along the border. These include some of China's top armored and air units.

On the Vietnamese border, there are reports of regiment- and division-sized actions, supported on both sides by tanks. In one action in November, thousands of Chinese moved inside the Vietnamese borders and dug in. Casualties were reported in the hundreds. China has voiced complaints of similar assaults by Vietnamese forces.

Is China the aggressor and moving to settle its long-standing border claims by force of arms? Or is the Soviet Union, in concert with Vietnam, applying steady pressure on what the two countries consider the growing threat of China?

All three countries are guilty of aggression. China over the years has aroused the fears and suspicions of its two Communist neighbors. It, in turn, is deeply suspicious of both Vietnam's and the Soviet Union's military intentions. The result is a China almost completely surrounded by armed enemies who are fearful and aggressive at the same time.

In light of the nuclear weapons China and the Soviet Union have, there is reason for the rest of the world to be concerned as well. Already the two nuclear powers have gone to the brink of nuclear war.

It started on March 2, 1969, when tensions between Peking and Moscow broke out in armed conflict. Chinese forces attacked Soviet soldiers by surprise on Damanski island in the Ussuri River. The river is part of the disputed border between Manchuria and the Soviet Union (*see map*). Within a month, Soviet forces counterattacked with a battalion and quickly routed the Chinese garrison on the island.

There were more ominous overtones, however, than the relatively small skirmishes for a little-known island in one of the world's more desolate regions. Soviet officials alarmed US officials with an offer to jointly strike China and destroy its potential for nuclear war.

Nuclear War Threat

H. R. Haldeman, President Nixon's chief of staff, reveals in his book, *The Ends of Power*, some of the maneuvering of the US to forestall a unilateral Soviet effort. A key role in this drama was played by George Keegan, who later became Air Force chief of intelligence from March 1972 to December 1976. General Keegan, resorting to a ploy used in the earlier Cuban Missile Crisis, reportedly sent an uncoded message, in anticipation of a Soviet interception, pointing out that many thousands of Soviet citizens in Siberia would die as a consequence of nuclear fallout generated by a Soviet nuclear strike against China.

"If the periodic exchanges have been fairly evenly split in results, the rearmament has been one-sided in effect, with China falling further behind. . . ."

Haldeman credits "the timely diplomatic initiative" of then-Presidential Assistant Henry Kissinger and President Nixon, and "the good memory" of Keegan that "a Soviet-Chinese nuclear war that had been called probable by Kissinger in 1969 did not erupt into a worldwide catastrophe."

In the decade since, each country has been building up its forces along the troubled border. If the periodic exchanges have been fairly evenly split in results, the rearmament has been one-sided in effect, with China falling further and further behind its technologically superior rival.

Since the death of Mao, there has been a noticeable change in China's attitude of depending primarily on domestic armament production. Mao's successors apparently have decided they must import a greater proportion of advanced technology, for industry as well as arms, if they are not to fall still further behind the Soviet Union.

The US has encouraged this trend. Zbigniew Brzezinski, President Carter's National Security Assistant, is reported to have told the Chinese during his May 1978 trip to Peking that the US has dropped its opposition to European sales of "defensive" arms to China.

This concession is widely viewed as part of the "China card," the name opponents have given to US actions that favor China in its disputes with the Soviet Union. This policy is premised on the principle that the US can best and most cheaply frustrate the Soviet Union's aggressive military policies and keep its military

strength in balance by strengthening China. How this should be done varies among advocates, from trade and diplomatic concessions to the sale or transfer of military equipment and a break in relations with the Nationalist China government on Taiwan.

But even with foreign purchases, China has a long way to go. Further, it is hampered by a shortage of hard currency and a reluctance to borrow. Even if China's most optimistic plans are realized, it will not have, by the year 2000, the military strength the Soviet Union has today.

China's Military Problems

China, despite its huge population and tremendous resources, would be at the mercy of the Soviet Union's modern weaponry in any military confrontation. Only if the Soviet Union were to launch a large, conventional land invasion, an unlikely prospect, would the Chinese makeshift strategy of guerrilla war be even marginally effective.

The People's Liberation Army, which consists of China's ground, air, and naval forces—but not its militia—totals 4,325,000. It is the largest armed force in the world. But its equipment is at least a generation behind that of the Soviet Union. The mismatch would be an overwhelming handicap in any major confrontation.

China's most awesome weapon is not its superior number of troops but its nuclear arsenal. Though small by superpower standards, it is still capable of levying tremendous damage on the Soviet Union or any other neighboring country.

China first exploded a nuclear device in 1964, and in the years since has accumulated several hundred nuclear warheads. Delivery vehicles so far are confined to eighty or more 700-mile and 1,500-mile ballistic missiles, and 400 bombers. Pilots of other planes also get some nuclear strike training. The bombers include sixty to eighty Tu-16 intermediate-range jet bombers and more than 300 older Il-28 medium-range jet bombers. The planes were obtained from the Soviet Union or are Chinese copies.

A vigorous missile research program is under way to extend the range of missiles and to develop solid propellants. The present missile force is liquid-fueled.

The ground forces consist of 3,600,000 men, the majority assigned to ill-equipped infantry divisions. China has only twelve armored divisions and these are equipped with Chinese-built tanks or old Soviet models that would make a poor showing against the modern armored divisions of the Soviet Union.

Chinese ground forces are equipped to conduct conventional warfare within the PRC's own borders. Their ability to wage cross-border operations is limited by a lack of tanks and armored personnel carriers and by a rudimentary transportation network. These deficiencies would be extremely difficult to correct within the next decade, given the disparity between Chinese and Western production rates.

> "Though it is not official US policy, some policymakers argue that there is an advantage to the US in rapidly improving the Chinese Air Force."

China's Air Force

The Chinese Air Force is China's most potent force. Including its bombers, the PRC has some 5,000 combat planes, most of them old Soviet models or copies of Soviet aircraft that are a generation or more behind those of the USSR and the major Western powers. Chinese airpower problems are compounded by the few hours that Chinese pilots fly. The result has been a blow to pilot training and morale.

China is trying to shore up the most glaring weaknesses of the Air Force. The Chinese have been building their own planes since the mid-1960s and have in recent months indicated a willingness to buy aircraft from the West. Sweden, Britain, and France are mentioned as possible suppliers.

The Chinese Air Force, in fact, is seen as a possible shortcut should the US and its allies wish to counter Russia's growing military presence in Europe by bolstering China's defenses against Soviet ground and air forces in Asia. Though it is not official US policy, some policymakers argue there is an advantage to the US in rapidly improving the Chinese Air Force. The reasoning is that, once China has new planes and modern airborne missiles, the Soviet Union will be forced to deploy a greater proportion of its military forces in its Asian provinces, and thus reduce the present Soviet preponderance of military forces facing NATO in Europe.

The Chinese Air Force has had its peaks and valleys. It was not until the Korean War that the PRC developed a modern air force. Then it was through the benevolence of the Soviet Union, which furnished bombers and fighters, along with the pilots, instructors, and maintenance crews needed to keep them in the air.

When the Soviet government withdrew all its advisors and technicians from China in July and August 1960, it was a severe blow to the Air Force. The National Aircraft Factory at Mukden, kingpin of China's aeronautical industry though managed by Soviet advisors, ground to a halt, leaving unfinished Shenyang MiG-19 planes on the production lines.

Not until 1964 did the plant recover to the point that MiG-19 production could be resumed. The Chinese version of this plane is called the F-6. A few were exported to Pakistan and Albania. Before the production lines were restarted, China did receive some MiG-21 fighters and spare parts from the Soviet Union in an apparent Soviet gesture toward mending relations, and later by China's diversion of war supplies for Vietnam shipped by train through China.

The first purely Chinese aircraft was the F-9 fighter bomber, of which production began in 1969. Following the purchase of Rolls-Royce Spey jet engines, there have been reports that Chinese engineers are designing a delta-wing supersonic aircraft similar to the French Mirage series.

Today, the Chinese Air Force and Navy have more than 4,000 interceptors assigned to air defense missions. They are mostly the older MiG-17s and MiG-19s, but also include eighty MiG-21s. The air defense system includes about 100 SA-2 surface-to-air missiles (SAMs) and several thousand antiaircraft guns.

The tactical aircraft assigned to ground-support missions primarily include about 500 MiG-15s and some F-9s.

The Chinese Navy

The Chinese navy now ranks second in numbers only to that of the Soviet Union, though most of its surface vessels are under 100 tons displacement. The Chinese fleet of diesel-powered attack submarines is the third largest in the world.

But, as with its ground and air forces, China has a navy far behind the Soviet navy in lethality, and one that is a poor match for most of the fleets of the Western world.

China has one diesel-powered ballistic-missile submarine and one nuclear-powered attack submarine. Sources say the missile submarine has not yet been equipped with missiles.

The surface fleet consists of eleven destroyers, twelve frigates, sixteen patrol escorts, plus several hundred patrol boats. The ships are vulnerable to air attack, however, because they have no surface-to-air missiles aboard.

The destroyers are armed with the Soviet-designed Styx surface-to-surface missile, which has a range of twenty miles, far short of newer Soviet and Western ship missiles.

Missile patrol boats, also armed with the Styx, include seventy of the Russian-designed *Osa*-class and another seventy of the *Oku*-class, which is a Chinese variation on the Soviet *Komar*-class.

China's only ballistic missile submarine is the Soviet *Golf*-class boat, which was built at Dairen in 1964.

People's Militia

A fourth military element is the People's Militia, a part-time, quasi-military organization that is expected to play a major role should a successful Soviet invasion force China into a guerrilla war.

Altogether there are an estimated 100,000,000 in the militia, but the figure is meaningless in measuring China's military might. These forces range from the Basic Militia, which receives basic training but is unarmed, to the Armed Militia, which is equipped only with light weapons though organized into divisions and regiments. The great majority, 75,600,000 or more, are in the Basic Militia, while the Armed Militia numbers between 5,000,000 and 7,000,000. The rest are scattered in units similar to the Basic Militia.

The plight of the militia, a surfeit of men and a shortage of weapons, illustrates the problem, but on a grander scale, of China's military strength as a whole.

New Military Thinking

With the death of Mao Tse-tung, the idea that China could defend itself through guerrilla warfare against the superior weapons of its neighbors, in particular the Soviet Union, has been in decline, if not abandoned entirely. China's military leaders now are saying the country can best reach its potential militarily with modern weapons in combination with its large and disciplined ranks.

Chinese military and civilian leaders emphasize the gravity of the country's present military situation, particularly the threat of the Soviet Union. It is this concern, China experts say, that has caused, and even forced, considerable changes in its policy of foreign trade and international relations. China's leaders want outside help to improve the country's domestic arms industry, and they are even willing to augment this armament program with foreign imports.

What is the US role?

Experts on China say there is no doubt that China considers the Soviet Union its chief enemy. But the US, as the strongest "capitalist" power, still is considered number two.

China's immediate strategy to counter the Soviet Union, say the experts, is to take every measure to defend itself, without regard to the ideology of any support that is available. In addition, by reminding the US, West Europe, and Japan of the Soviet threat, China hopes they will increase their defenses and balance what it sees as Soviet expansionist policies.

But in its relations with the US, China shows little sign of being conciliatory. Rather, it has made some difficult demands as its conditions for improving relations. Though the original breakthrough in US-Sino relations occurred while Mao was alive, there is no sign his successors are any less demanding. The three major conditions China has placed on improving relations were outlined in the Shanghai Communiqué and in subsequent diplomatic exchanges. They are:

1. The US must abrogate its mutual defense treaty with the Republic of China on Taiwan.

"Chinese military and civilian leaders emphasize the gravity of the country's present military situation, particularly the threat of the Soviet Union. It is this concern, China experts say, that has caused, and even forced, considerable changes in its policy. . . ."

2. The US must withdraw all its military forces from Taiwan.

3. The US must sever diplomatic relations between Washington and the Taipei government.

At first glance, the US seems in an impossible position. It must abandon a longtime ally, the Republic of China, and damage the credibility of its military agreements, to improve relations with mainland China. The alternative is to risk the PRC's being overwhelmed or subverted by the Soviet Union, creating a world in which the US would face two giant Communist states united in ideology and enmity against the US and the rest of the Western world.

The pressures are strong for a US Administration to play the "China card."

But this option has uncertainty attached that causes concern. China's neighbors—including Japan, South Korea, and Taiwan—would regard an abandonment of Taiwan, after the debacle in Southeast Asia, with apprehension. Some analysts feel it would precipitate a rush toward nuclear armament, a move toward the Communist camps, or both.

Another argument against the "China card" is the instability of the Peking government. The present leadership could be toppled and replaced by another that is hostile to the US,

or even friendly to the Soviet Union.

Soviet Overtures

There were many signs after Mao's death of new efforts to reestablish Sino-Soviet cooperation. Some Chinese officers, trained in the Soviet Union and suspected of Soviet sympathies, have been rehabilitated by Peking. An agreement concluded in October 1977 between China and the Soviet Union settled one of the many border disputes.

The continual shifting of power within the current Chinese leadership also presents an opportunity for the Soviet Union to tilt the balance with diplomatic gestures and other maneuvers short of full-scale war.

Though Hua Kuo-feng is the chairman of the Chinese Communist Party, there has been a continuing shift in authority within the top leadership, with the rehabilitated Teng Hsiao-ping the rising star.

For these and other reasons, some China experts are advocating a less dramatic move than the "China card," which some are calling the "American card." This policy would continue to foster good relations with both China and the Soviet Union, but would be reinforced by stepped-up improvements in US strategic and conventional military strength.

Though it has no short-time advantage as the "China card" seems to promise, it does have some long-term benefits.

The US could continue to encourage both the Soviet Union and China to seek solutions to their severe economic problems without resorting to war. Rather than taking sides in a volatile and unpredictable struggle over ideology and borders, the US could seek to improve relations with both countries, as long as this did not require unilateral American concessions. Significantly, both China and the Soviet Union need US modern technology.

The US would, under this policy, at the same time preserve relations with an ally, Taiwan, and thus reenforce the credibility of its mutual defense treaties, which is the subject of some concern in Asia.

Finally, a buildup of America's military might would put the US and its allies in a better position should relations with the Soviet Union or China worsen. Rather than relying upon China, a weak and undependable ally at best, the US would be able to continue to fulfill its role as the leader of the free world through its own strength and independence. ■

—Wide World Photos

—Wide World Photos

—Wide World Photos

With the death of Mao Tse-tung, left, the scramble for control of China appears to be between Hua Kuo-feng, bottom left, chairman of the Communist Party, and Teng Hsiao-ping, the vice premier and veteran of purges within the ruling elite.

The Soviets are shooting for clear-cut superiority in conventional forces—an area where numbers can be critical.

The Only Way to Beat the Odds

By Gen. T. R. Milton, USAF (Ret.)

The RAF, reduced in numbers though it may be, still has a certain panache. It showed in their low-level operations across the Nevada desert and in their high-spirited contributions to the afternoon critiques. And so, when last November's Red Flag ended, everyone looked forward to the party given by the RAF at the Nellis Officers' Club. Judged by the jaded standards of nearby Las Vegas, it was a pretty simple affair. Just a little California wine, some Wisconsin cheese, and everyone dressed neatly but casually. True, the British Secretary for Air, a man with the Dickensian name of Mr. Wellbeloved, was there to add a little political tone to the occasion, and Air Vice Marshal Mike Knight had come over from the UK Strike Command to see how his fellows were doing.

Mostly, however, it was a tight little gathering of aircrews—both pilots and navigators—who shared a common profession and who took similar risks. An outsider felt welcome enough but at the same time curiously excluded. It is a hard club to get into, and there is no way to forge the necessary credentials.

Looking around the room that evening made reminiscing inevitable. The RAF faces were just as unmistakably British, and RAF, as those from long ago. Their skill was high, as it has always been. And, as was the case in another time, there are not very many of them.

Events are coming pretty fast these days. As we move into 1979, there are certain uneasy resemblances between our situation today and the one the British faced in 1939. Just as was the case forty years ago, there is a powerful dictatorship on the move, its aims still unclear but nonetheless threatening, and we have lost the initiative in this eternal struggle to keep our, and the free world's, end up. Even if, by some miracle, we do work out a SALT II that keeps the strategic arms situation from going dead against us, we are still faced with the ominous fact that the Soviets are making a determined effort to establish clear superiority in conventional forces. With our own aircraft production, and that of our allies, limited by the economic facts of life, we face a future where we are outnumbered. Whether we are outnumbered in a decisive way is going to depend on the elusive qualities of superior aircrew motivation and skill as well as the more precise one of better aircraft performance.

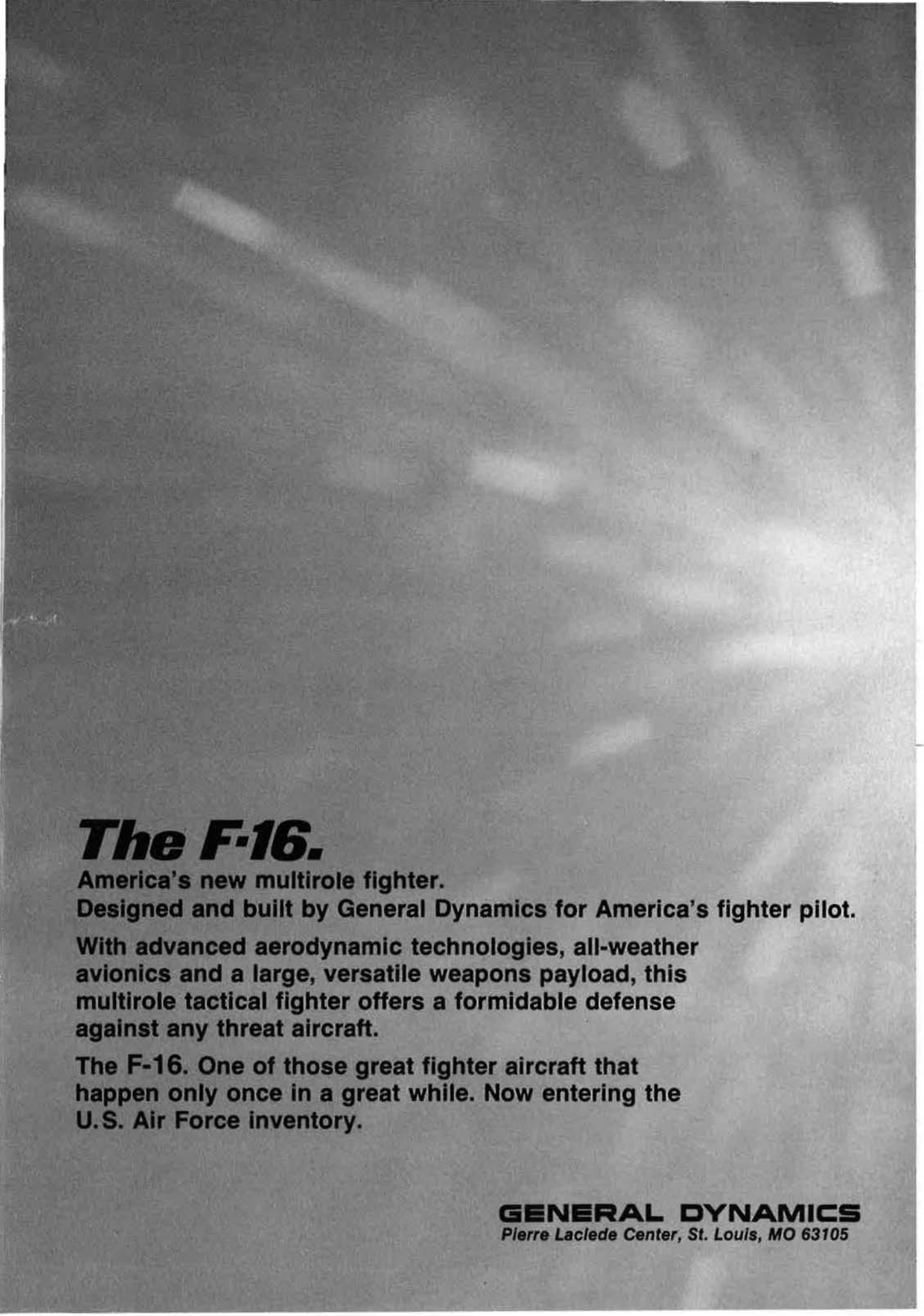
The airplanes coming along—the F-14, F-15, F-16, F-18—look great. It is hard to believe the Soviets can build anything as good, let alone better. The radars in the F-14 and F-15 are force multipliers in the truest sense of that phrase. They make one airplane the equivalent of several. The AWACS is still another and most effective force multiplier as it searches the distant sky and sorts things out for its fighters. Then there is our tactical employment of tankers, still another force multiplier. A fighter in the air is worth several on the ground being refueled. All this—the superior airplanes, the AWACS, the tankers—helps cut down the numbers disparity we are likely to face next time. A really fast all-aspect missile would cut it down even further.

Technology, then, is doing what it can to even the odds. That leaves it up to the people who fly these birds. They must get everything out of these airplanes that they were designed to do, and that is no job for a run-of-the-mill pilot just putting in his time. It takes dedication, long hours, and a great desire to excel. It goes without saying that high morale, esprit de corps, is an essential prerequisite. It is a much more fragile thing to tamper with than any radar, and infinitely harder, once it has gone wrong, to fix.

The RAF wrote the book on this subject back in those days of the Battle of Britain. In the often-lean years since World War II, they have somehow managed to keep going the tradition of high-spirited but professional dedication. And while some of our own policies in recent years have seemed oblivious to the need to preserve this precious resource—morale, esprit, or whatever you want to call it—there are some encouraging signs that this trend is being reversed.

Whatever is done to enhance the image of an Air Force fighter pilot—and the F-4 navigator—is just plain good management, to use that fashionable word. For the only way we will ever beat the numerical odds against us is the same way the RAF did it: the best airplanes flown by the best crews. ■

The New Shape of Air Power



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GENERAL DYNAMICS
Pierre Laclede Center, St. Louis, MO 63105

BEHIND Tactical Air Command's state of readiness is a revamped and revitalized maintenance structure described by a pair of four-letter acronyms: POMO and POST.

The goal is to produce quantities of operationally ready aircraft to fly high sortie rates, and to do that under conditions that will approximate a combat environment.

POMO and POST are part of Tactical Air Command's basic tenet: To train the way they would have to fight. The two concepts are relatively new in TAC, having been first started as test programs at selected bases as recently as 1975. They are geared to the sortie surge concept. POMO now is TAC-wide, and POST can be used by operational wings and training wings where the mission and operational conditions permit.

Before POMO and POST, Air Force maintenance was organized under Air Force Regulation 66-1, "Maintenance Management." It was a system that worked, and is still used; but TAC needed a different approach.

TAC deploys at a squadron level, rather than with complete wings, because of the command's use of dispersed forces and because forward operating bases generally are space-limited. AFR 66-1 laid out a total wing organization; to deploy pieces of it meant drawing specialists from the centralized organizations and making them a temporary part of a deployment team. It seemed that higher efficiencies could be gained if those specialists were a part of a squadron-level deployment package in the first place.

The 1973 war in the Middle East provided another input that led to the POMO and POST concepts. In that war, the Israeli Air Force was able to generate a high sortie rate, and one reason was that everybody did everything. In management language, there was much cross-utilization of skills. Radar technicians were able to fuel aircraft, or to tow them; engine mechanics changed tires and lent a hand with the arming. It was work done on the flight line, between sorties, and it was one of the keys to the IAF successes.

BY DAVID A. ANDERTON
PHOTOS BY THE AUTHOR

No maintenance operation, however well manned and organized, is going to be very efficient unless motivated people fill the slots. One of the reasons for the introduction of POMO/POST was realization that—under earlier systems of maintenance—there was little opportunity for personal identification between technicians and the aircraft on which they worked. Today it was just tail number 345; tomorrow, 372; the next day, 384 and maybe 398 as well.

When people begin to think of airplanes only as tail numbers instead of as "my airplane," a maintenance system is going to have trouble. And among these troubles will be less caring about the quality of the work done.

"These guys used to say, 'What the hell, it's not my airplane,' " said one chief master sergeant. "But now, a lot of them say, 'Hey, Chief, my airplane's ready!' "

Intangibles of POMO, POST & Co.

Let's look at these two systems in more detail. POMO is an acronym for Production Oriented Maintenance Organization. POST stands for Production Oriented Scheduling Techniques. They are the basis of the current maintenance organization in TAC. POMO, POST, and the sortie surge concept are linked closely. (Sortie surge requires that TAC units go all out to schedule and fly a maximum number of sorties within a condensed period of time, simulating a combat environment both in the air and on the ground.)

Normally, maintenance people like to schedule their work so that the flow is as nearly constant as possible. It simplifies the working environment and affects the attitudes of people. It means, among other

Tactical Air Command's ability to deploy and fight on short notice rests on the men and women who keep the planes in fighting trim, now organized under two high-mobility, combat-ready concepts . . .

POMO and POST: Keystones of TAC Readiness

Writer/photographer Dave Anderton spent thirteen years on the staff of Aviation Week and Space Technology, *before turning to free-lancing. Among his books is* Strategic Air Command, *published in 1976 by Charles Scribner's Sons. He is now writing a book on Tactical Air Command.*

things, getting home at the same time each night. But such a smooth flow is not the real world of conflict. In that world, the goal is to launch a lot of aircraft, recover them, turn them around in minimum time, and launch them again.

To do that takes people out front, by the airplanes, not back in specialty shops waiting for somebody to bring in a faulty component bearing a green tag. That's the way it used to be in TAC. Before POMO/POST, about seventy-five percent of the sortie-producing maintenance people could be found in the specialty shops, working on items brought to them to be fixed. Now, seventy-five percent of those same people are out on the flight line, "... where they belong," as one old-time sergeant said.

These people are on the line because they are in direct support of specific aircraft, responsible for their launching, recovery, and everything in between. And, as an extra feature, a program called Dedicated Crew Chief was added during 1978 and currently is under evaluation. It goes back to what some USAF old-timers insist should never have been abandoned—the regular crew chief concept, assigning at least one technician per aircraft with the sole responsibility of making that aircraft available to fly.

Those with long memories will recall the fanatical devotion and personal identification of the World War II crew chief to his aircraft. There's a story out of the Pacific theater in that war, featuring an overdue four-engine bomber. The pilot had radioed that they had feathered the number three engine, and that number two was spewing oil. They'd lost the hydraulic system. Some control cables had been shot through, and the engineer had spliced them in a temporary fix for the trip back. All loose equipment had been jettisoned, and they were just managing to hold 3,000 feet cruise altitude.

When the plane appeared in the pattern, smoke was pouring out of number two engine. She touched down, rolled forever, finally stopped, and then taxied to her hardstand. Flak holes had ripped her skin, torn her belly. One prop was dribbling hydraulic fluid. Some cowling panels had been blown loose, and hung by a fastener or two. One flap drooped. The ground crew walked out to meet the dog-tired flight crew. The young aircraft commander shook his head sadly and said, "Well, Chief, I guess she's ready for the boneyard."

The crew chief looked right back at him with old, hard, flight-line eyes and said, "No, Sir! Not MY plane!"

That kind of attitude had lessened in TAC, with the advent of the specialty shops and the staffs of technicians who worked on green-tagged pieces that were delivered to them and hauled away again. Some of them only saw an airplane if they looked out the open doors of the shop, or walked to the edge of the roped-off flight line. Many didn't even have passes to go on the flight line. Result: A lack of any identification with an airplane. "What's an airplane? All I ever see is a bunch of black boxes; they could belong on a truck for all I know."

The identification is important, and it's an intangible. It only shows up when there is trouble, and when people will work until they get the job done, rather than quitting when the clock shows quitting time. But there's also a tangible benefit—more airplanes are now available to fly sorties, at higher rates than before, and without an increase in the number of maintenance man-hours per week.

Organizational Patterns

POMO replaces the traditional AFR 66-1 four maintenance squadrons with three new types:

- **AGS (Aircraft Generation Squadron),** whose jobs include launch, recovery, and servicing, and the type of flight-line maintenance work characteristic of those tasks.
- **CRS (Component Repair Squadron),** whose work is to fix the pieces that are taken off the flight-line aircraft and brought to the CRS shops.
- **EMS (Equipment Maintenance Squadron),** which does heavy maintenance, phase inspection, and tasks that require hangaring the aircraft. The responsibility extends to fuel systems repair, munitions storage, and base flight and transient alert activities.

There is a further breakdown of these organizations. The AGS is subdivided into branches, called Aircraft Maintenance Units (AMU), one for each operational squadron of aircraft. The AMU is further divided into flights assigned to a specific number of aircraft.

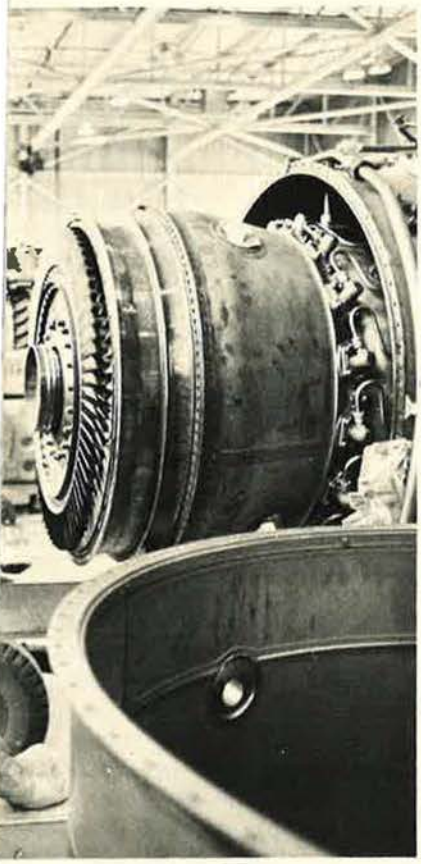
MSgt. Jack Middleton and Capt. Fred McNeil, 49th TFW at Holloman AFB, N. M., discuss maintenance work on an F-15 engine at the wing's Component Repair Squadron facility.

Organizationally, then, POMO produces a number of dedicated groups of specialists, who are assigned to, and move with, specific aircraft. If the 94th Tactical Fighter Squadron moves from its home base with the 1st TFW at Langley AFB, its own AMU goes with the deployment. The specialists know the aircraft they are moving with, and

here is a much closer rapport between ground and flight crews and he aircraft.

POST is geared to one goal: Quick turnaround and launch of operational aircraft. But that goal is really a triple one, because currently here are three forms a turn may ake in the tactical air forces.

If a TAC unit deploys to the Pacific, its ground crews need to be familiar with the PACAF flow-through quick turn. The recovering aircraft taxis to a revetment area for servicing and munitions loading. TAC bases in CONUS don't have



revetments; instead, the ramp area is marked off by roped-in areas the size of PACAF revetments. The maintenance people and their equipment have to stay inside the designated areas during their training for the PACAF quick turn.

In Europe, the tactical aircraft are towed after recovery, tail first, into a hardened concrete minihangar for servicing and loading. Again, this procedure has to be simulated at TAC bases in the United States.

In the air defense mission, with which TAC units are being increasingly tasked, the turnaround is different again. Returning planes pull into a premarked loading and servicing area surrounded by waiting maintenance personnel, their equipment, and the munitions trailers. This is TAC's "pit stop"; servicing and loading take as little as twelve minutes, and the aircraft is on its way again.

Not all TAC units practice all three of these; some of the dual-based units, for example, are assigned to either USAFE or PACAF, and need only to be proficient in the technique of their assigned theater. But most units are committed to both Europe and the Pacific, and they practice both. Regardless of the type of turnaround, the flight crew leaves the aircraft during servicing. It improves the quality of the post-flight briefings, and it gives the crew chiefs more responsibility.

As with any new approach, POMO and POST were first greeted with some suspicion, some reluctance, and some acceptance. But beyond that, initial reactions seemed to center on the lack of a set work schedule. It took a while for the basic point to sink in: In a war, the luxury of preplanned and prescheduled maintenance is going to go right out the window after the first sorties are flown. There will be no rest. Every day and every night will be a surge.

There was some concern about the surge concept itself and its effect on maintenance. Would the heavy flying over a short period of time change the life characteristics of the planes? Would there be short-term advantages that generated long-term problems? That question still is unanswered, because insufficient time has been recorded in the POMO/POST records to date.

As the new system spread through TAC, a top-level committee was formed in the Air Force Manpower and Personnel Center specifically to assess and act on the impact of POMO on people's lives. Specialists didn't get home at the same time each evening; shifts had to be extended. There had to be some overlapping of the work hours, so that a specialist was always available at the aircraft and could hand over the work to his replacement at the end of his shift.

Then, most recently, the command tackled one of its toughest problems: working conditions. TAC bases can be blistering hot—Luke AFB, Ariz., in July has to be experienced to be believed—or freezing cold, like Mountain Home AFB, Idaho, in the winter with snow up to here. Under weather conditions like these, enclosed and climatized shops are a lot more inviting than the flight line. But the flight line is where it is all happening, and maintenance specialists have to be out there at times. TAC is trying to move shops closer to the work, to cool them in the summer and heat them in the winter.

Testing the Concepts

POMO/POST started on a trial basis with two selected units within TAC. POMO's initiation was the responsibility of the 56th Tactical Fighter Wing, operating their F-4Es out of MacDill AFB, Fla. The test program began in 1975, built around only two basic POMO squadrons: an AGS and a CRS. One early result was the addition of an Equipment Maintenance Squadron.

POST testing began in September 1976 at the 23d Tactical Fighter Wing, England AFB, La. Operating A-7D aircraft, the wing was tasked to increase sortie production without increasing the maintenance manhours per week. The framework of the test was the surge; the 23d was to surge Tuesdays and Wednesdays, with a substantial increase in sorties those days. The maintenance organizations were to change their schedules to handle the increased rate of flying on two days a week, and ease back on the other days.

The 23d maintenance organization then was operating according to AFR 66-1. That was not changed for the POST tests, and one of the recommendations was a change in that structure. The test was scheduled to end December 10, 1976, but it was extended to gain more time to refine the POST concept. The following February, the 67th Tactical Reconnaissance Wing at Bergstrom AFB, Tex., became the second unit to try out POST. Their aim was to surge to a rate of 1.5 sorties per day per possessed aircraft during three weeks of the month, and to raise that rate further to 2.0 sorties per day per aircraft during the remaining week of the month.

Their real-world situation found

about one-quarter of the wing's aircraft in maintenance at any one time, and so the available aircraft had to surge to about 2.5 sorties per day. The 67th did the job, but some shifts had to be extended on surge days, and support units like the dining halls had to extend their serving hours to handle the traffic.

About six months after the 23d TFW began its POST experiment, TAC pulled a no-notice test. At 0505 hours on March 14, 1977, a team arrived at England AFB, announced the test, and gave the wing twelve hours to get a maximum number of aircraft to a mission-ready status, as defined by the Designed Operational Capability (DOC) Statement. Within the time limit, the wing had forty-five DOC aircraft ready on the base, and eight others that were off-station for various reasons.

The second phase of the test began the following day, with the task of flying a minimum of 164 sorties during a two-day period. The 23d had scheduled 181 sorties for that entire week. So, on March 15, they launched ninety-five sorties, and on March 16 flew 106, for a total of 201. Of those, 160 were designated as DOC aircraft; the remainder were primarily weather and test flights, and flights by the resident Louisiana Air National Guard, supporting the Army by hauling live ordnance.

During this test, the 23d averaged better than two sorties per day per possessed aircraft. They racked up 283.5 hours of flying time, and the average sortie duration was 1.4 hours.

In April 1978, TAC began its dedicated crew chief program. The 1st and 354th TFWs were assigned the test program, which started small. A few senior airmen were assigned to specific aircraft as crew chiefs, with full-time responsibility for maintenance and the availability of that aircraft for mission sorties. Each chief had an assistant, also a dedicated type, who was trained to take over from the chief when the occasion demanded. TAC's purpose was to see if the experiment would pay off in increased operational readiness, in management efficiency, and in morale. The test was scheduled to run for six months and then be evaluated.

Proof of the Pudding

Some miscellaneous experiences with POMO and POST are worth relating. The 354th Tactical Fighter Wing, Myrtle Beach AFB, S. C., found early in its conversion to the A-10A that their turnaround time was pilot-limited. They have been able to fly four sorties per aircraft per day in some of their surges, and presumably might have been able to fly more if pilots had been available. The wing started with a POMO type of operation when they began the conversion to the A-10A. When the two prototype Thunderbolt II aircraft were at Edwards AFB, Calif., during the earliest days of the A-10 program, they were maintained by a sixty-six-airman specialist team chosen from TAC units at several locations. When the planes were moved to Davis-Monthan AFB, Ariz., for the beginning of the tac cal training period, the maintenan cadre moved with them. A solita major ran the wing's maintenan operation, and it was like a bar bones POMO, even though tl A-10A had moved to Myrtle Beac using maintenance techniques spec fied in AFR 66-1.

A member of the 363d Tac Reconnaissance Wing's Aircraft Generation Squadron does flight-line maintenance at Shaw AFB, S. C., on one of the wing's RF-4Cs.

The 1st TFW at Langley AF has a complement of seventy-tw authorized F-15A aircraft, and closing in on a mark of three sortie per day per aircraft during surge Typically, the wing will fly fro seventy-five to ninety sorties o surge days, using about thirty Eagl to achieve that level.

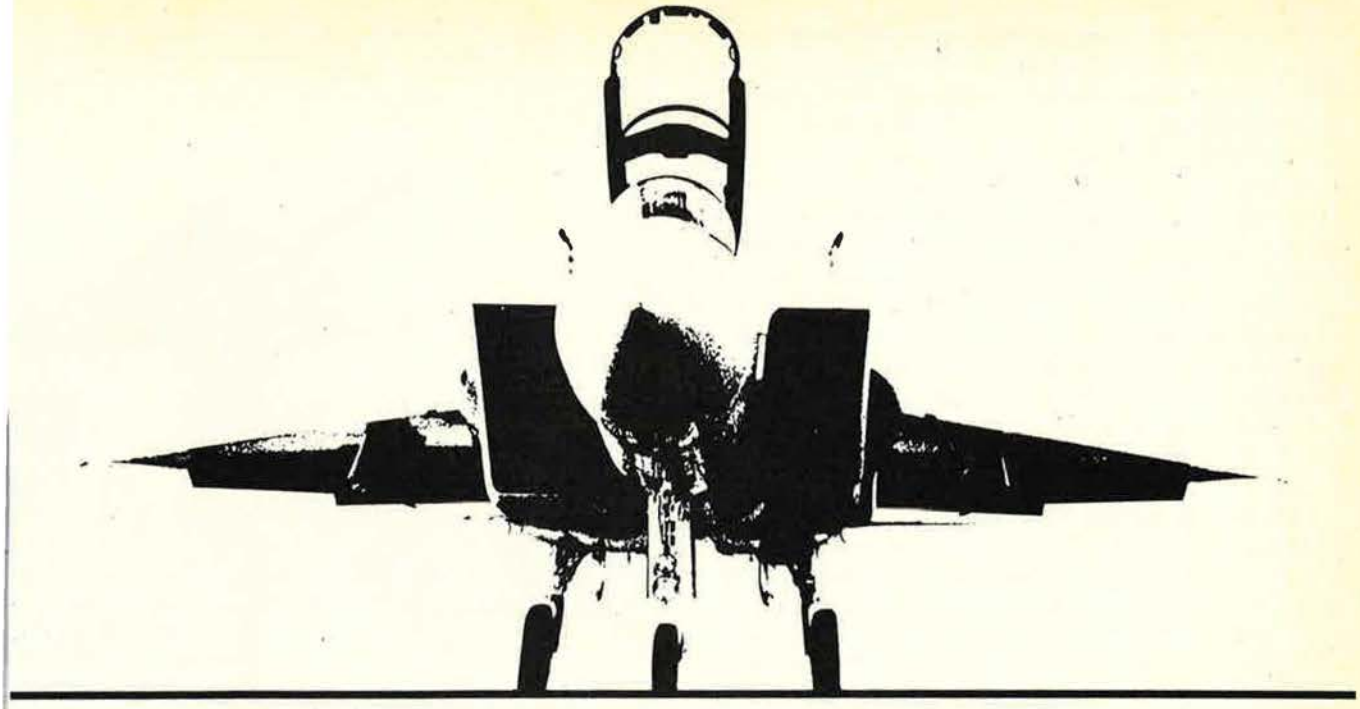
Lt. Col. Richard Mustico, assis tant maintenance deputy for th wing, called the F-15A a ". . . far tastic turn machine." Authorized fc a one-hour turnaround, the wing' AGS branches will turn their Eagl in thirty to thirty-five minutes be tween sorties. At another level, th Propulsion Branch has been movin between thirty and thirty-five Prat & Whitney F100 engines throug their shops every month.

"But the guy has to love his piec of machinery," Mustico said. "He' always working at the boiling point and at the end of a long chain o supply and money. I truly admire those people."

Is the system working? It seems to be, and working well. There has been a significant across-the-board improvement in turnaround times between sorties. Routine training for turnaround tasks has changed to reflect the needs of the new system. Cross-utilization has been introduced, so that most of the specialists out with the airplanes now can fuel, tow, or jack the airplanes.

Additionally, there has been a very real, although intangible, payoff, and it has come in the area of personal identification with the aircraft and its mission. More and more, specialists refer to "my aircraft. . . ." Crew chiefs' names are stenciled on the sides of fighters, as prominently as the pilots' names. It's adding a team dimension that has too often been absent from past maintenance approaches.

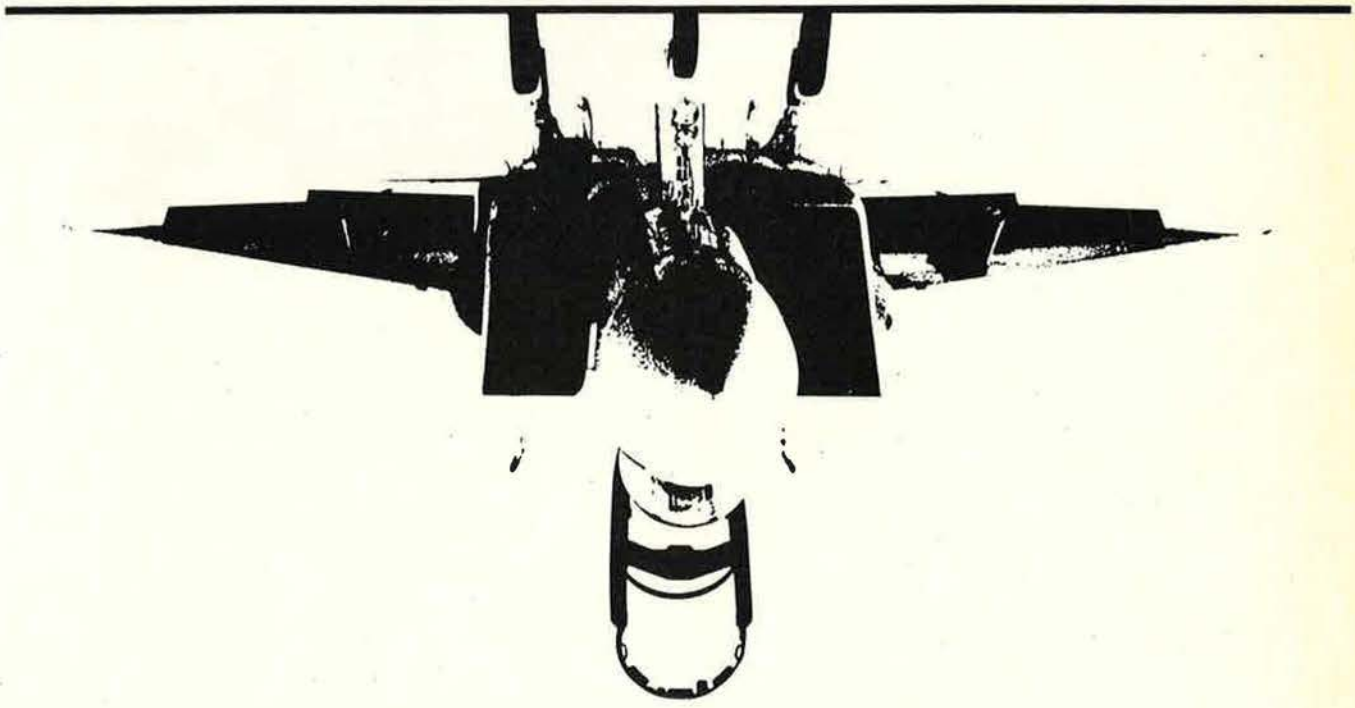
Finally, the bottom line is readiness to deploy quickly and fight immediately. That's what TAC—or any air force—is all about. ■



Flying Red Flag missions alongside RAF units will lead any experienced airman to reassuring conclusions about the planes, their crews, and the support people, but it also brings some uneasy thoughts about the depth of our combat forces and of their backup.

REFLECTIONS FROM A RED FLAG

BY GEN. T. R. MILTON, USAF (RET.)



BACK in the late fifties, the tactical side of the United States Air Force was trying its best to look strategic and thus essential. The fellows who flew the F-100s referred to themselves as fighter pilots, but their mission had more to do with target folders than with combat in the sky. You didn't cavort around much with 450-gallon tanks and a nuclear shape strapped on. No, by 1961 the tactical business had become very serious, very circumvented, and very dull. Fighter pilots, like their colleagues in SAC, spent a considerable part of their lives camped in alert facilities. And, while SAC was unquestionably the major league for that sort of activity, the tactical forces were just as clearly in the bush leagues. It was simply a way of staying in business in those days when the nukes were the focus of our strategy.

Vietnam came along and with it a need for some old-fashioned tactical activity employing iron bombs and guns. The first such mission in Vietnam, a squadron-sized effort, should have raised warning flags all the way to the Pentagon's E Ring. It was, not to make too much of things, a fiasco. In the years since Korea it became clear our tactical expertise had pretty well vanished as we focused on nuclear deliveries. Fifteen hundred feet from the bull's-eye was not a bad nuclear toss for an F-100. The whole maneuver—coming in on the deck at 500 knots, going into afterburner at the precise moment, pulling exactly four Gs, wings level—was dependent on accurate wind forecasts and a considerable amount of luck for any real accuracy. A few hundred feet one way or another scarcely mattered, of course, considering the nature of the bomb.

The long years of Vietnam saw the tactical skills come back, especially in the areas of close support for the ground troops, and dive bombing. Our tactical crews learned how to survive amidst those flying telephone poles, the surface-to-air missiles. They became adept in mass air refueling and in rough weather operation, for Southeast Asian thunderstorms are wondrous to behold.

Because the North Vietnamese Air Force was small, and generally cautious, however, the air combat skill of our fighter pilots was a little slower in developing. The figures show better than a two-to-one advantage for our side: not bad, but a far cry from the fourteen-to-one ratio we enjoyed in Korea's MiG Alley when Jabara, McConnell, Gabreski, and Fernandez were the media stars of that day. Korea came along at a time when World War II skills, if not exactly fresh, were still remembered and employable.

Vietnam was too many years after Korea for that to happen, barring a Robin Olds, perhaps, and a very few others. There were other factors working against our fighter crews in Vietnam, things like the need for visual identification in an area where most of the airplanes were our own, and the lethal ground environment of North Vietnam itself.

Nonetheless, the fact remains that air combat had become a neglected part of tactical air training.

Now, once again, we are reminded that combat experience is a perishable commodity, especially in the fighter business. Most of the Vietnam veterans have moved on from squadron duty, their places taken by the new faces out of flying school. Not to be caught again with pilots

A key element of the TAC team, its maintenance people, deployed to Nellis AFB, Nev., to keep the F-15s flying.

Red Flag debriefings brought out the professional lessons learned, along with "some splendid and irreverent humor."

ho have to learn the hard way how to survive in aerial ombat, the Tactical Air Command is presently in its urth year of Red Flag. From what I saw during one eek in November, the next time is going to be different om the last time. The learning curve has its start out in ie high Nevada desert, not in those vulnerable first few issions of a war.

he World's Greatest Air Show

To accelerate the learning process, there is, first of all, he range itself, 3,000,000 acres stretching out into the esert from Nellis. Almost as soon as your gear is up, you re in business. Every day, the world's greatest air show oes on unobserved above—and often not far above—ie sagebrush, mesquite, and rocky hills. To be perfectly ccurate, it is not completely unobserved. There is a onely little ranch situated in the midst of what is Red lag enemy territory. The residents of that spread, asuming they ever look up, are treated to some of the reatest chase scenes ever filmed. The fact that these cenes are on gun-camera film rather than wide-screen echnicolor does limit the audience, but these are great ction movies nonetheless.

Then there is the remarkable Air Combat Evaluation araphernalia that literally allows observers to ride along icariously and watch the fight as it takes place, meanwhile thoughtfully making a film so that the participants an sit down later and review their engagement. It is all one through a slender pod carried under the wing like a Sidewinder missile. And so, while hands chasing one another over a beer are still standard fighter pilot training aids, and indispensable conversation props, the computer has taken all the guesswork out of who won. Air combat can now be viewed clinically and dispassionately, and never mind the war stories.

As it has been for a good many years, Nellis is the home of the Tactical Fighter Weapons Center. The Fighter Weapons School itself is, in pilots' minds at least, the most visible part of the Weapons Center. Its faculty has the genuine certified experts, the Ph.D.s, in F-4, F-15, and now A-10 tactics. The graduates of this school go back to their squadrons as resident experts, not as good as their professors, perhaps, but good by any other standards.

The Fighter Weapons School and the other activities of the Center are going on as they have in the past. The Thunderbirds, in somewhat reduced circumstances with T-38s instead of F-4s, still make their headquarters on the flight line. The 474th Tactical Fighter Wing, in F-4s now instead of F-111s, occupies a share of the ramp as a tenant. Next year the 474th will convert to the F-16, and the Weapons School will add that bird to its curriculum. By and large, then, Nellis is doing what it has done for a good long time. The fact that the place is busier than ever, really bulging at the seams, is a reflection of how important this Red Flag concept has become. The first week of November there were F-4Es from Moody, F-15 Eagles from Holloman, and Marine F-4Js from Kaneohe in Hawaii. There were two squadrons of Royal Air Force birds—Jaguars and Buccaneers—down at the south end of the ramp. The whole place looked purposeful and busy.

The scenarios for Red Flag are as realistic as range limitations and good sense will allow. Generally speaking, they involve a strike force attacking tactical targets defended by missile and antiaircraft sites with radars that really work, and an enemy air force ready to pounce on the intruders. Other friendly fighters fly escort for the strike force and thus provide for an air combat situation.

As a permanent part of Red Flag, there are two squadrons of F-5Es to act as the resident Bad Guys, or Red Air Force. The F-5E behaves pretty much like the MiG-21, still the predominant fighter in the Soviet and Warsaw Pact air forces as well as in the air forces of various other countries in the Soviet orbit. In the hands of the Aggressor Squadrons' pilots, the F-5E becomes something quite formidable indeed. These fellows, all experienced fighter pilots and hand-picked for this aggressor duty, are very hot stick and rudder men. They spend their days either fighting F-4s and F-15s in Red Flag or on the road visiting units and teaching them tactics in their home airspace. It is a rewarding life as they watch their onetime pigeons turn into hawks.

Views From the Cockpit—High and Low

My first Red Flag mission was scheduled in the F-15, the two-seat version, that is, and the pilot, Maj. Jim Posgate, was no green hand. An instructor in the Fighter Weapons School, he has been with the F-15 since its inception. Experience, however, gains you no short cuts in the modern fighter business. Since we were scheduled for takeoff at 1400 hours, our work began that morning. The old kick-the-tire days, always something of a myth except for some memorable individuals, are long gone. It takes a respectable amount of time to get ready for a mission in a fighter that costs more than two groups of World War II Mustangs.

The flight briefing was meticulous and wonderfully clear. As an aside, oddly enough, names have rarely caught on in our Air Force. Usually, it has been the model number, like the F-86, or a nickname, like the Thud, by which an airplane has been known, but seldom by the name lovingly bestowed upon it by its parents. For some reason, the F-15 seems to have become, to its pilots, the Eagle. It does have a good ring.

At any rate, we were briefed as a flight of four, and our job was to provide cover for the Brits who, with their Buccaneers and Jaguars, were coming in on the deck to knock out a truck convoy. We could expect enemy air, both F-14s and F-5s. There would also be surface-to-air missiles and enemy jamming to worry about. The AWACS (the Boeing E-3A Airborne Warning and Control System) would be on station to help us sort things out. As always, the aggressors would have their own ground control intercept capability. Our tactics, the flight leader stressed, would be aggressive but sensible, with the idea being to learn something, not to kill somebody. It is a tribute to the maturity of our fighter pilots that Red Flag, which looks like a cinch for a high accident rate, is actually experiencing a lower one than most people expected, and it is coming down. There had been just half the accidents in November as at the same time last year.

The Eagle takes off like a bird, appropriately enough, with just military power. The afterburners are there for

more serious situations. And compared to any other modern fighter, any that I know of anyway, the cockpit visibility is superb, even from the back seat. The instrumentation and switching arrangements are marvels of simplicity and accessibility, and the head-up display makes it almost unnecessary ever to look down into the cockpit.

It has been a while since I tried to fly anything, and so I am probably an unreliable judge, but the flight controls, in the few minutes I tried them, seem essentially perfect. With a radar that tells you almost more than you want to know, an inertial navigation system the equal of those found in modern transports, and everything easy and right at hand, the airplane would seem to be a pilot's dream. Evidently it is, judging from the fond remarks they make about the Eagle.

The F-14s were in a clean configuration, unburdened by their big Phoenix missiles, and so we had an interesting few minutes. Aside from the tentative conclusion that hardened arteries do not seem to make seven Gs any easier to tolerate, there is really not much to report. The F-15 maneuvers superbly and, with all that thrust, goes where it is aimed with no hesitation. The radar, with its look-down and everywhere else capability, is fascinating to someone with memories of the presentations on the F-86D, F-102, and even the F-4 scopes. The AWACS, that calm, detached voice in the sky sorting out the melee, is clearly going to be an enormous asset to our tactical air capability.

One more ride, this time a low-level excursion in an F-4E with another of the Weapons School professors, Maj. Bob Tone, was an education in what an expert can do with an F-4. We tangled successfully with an F-15 and escaped through the Nevada hills from an avenging F-5E on our tail. The F-4 is still a remarkable fighting machine. Passing through one canyon we spotted a B-52 hedgehopping—or rather rockhopping—along at our nine o'clock position. The desert light, with its giveaway shadows, is a cruel disadvantage for those huge bombers. Low level, for airplanes of that size and speed, would seem to need a little darkness or bad weather.

By and large, however, it was possible to come to a reassuring conclusion about tactical airplanes. The way they are flown is still a major factor. Thus, the success of the British with their Jaguars and Buccaneers is simply a reflection of the superb skill of the RAF crews at low-level operations. They get right down there, throttles to the wall and taking every advantage they can get of the terrain. If an enemy fighter wants to get one of the Brits, he must first find him—not easy—then get down there with him, and there will be no reassuring blue sky in his sight pipper. Thus, not surprisingly, no one claimed a British airplane that day. And, since no one seemed envious of the airplanes the Brits were flying, it is fair to chalk one up for the men, not their machinery.

A Need for Numbers

Maybe we have made too much of the machinery in our natural desire to have the best airplane. As Red Flag proves day after day, an expert in an F-5 can give any one, no matter what he is flying, a very hard time. Expertly flown, an F-4 is still a great airplane and more than a match for anything less expertly flown. Then there is the matter of numbers. The best fighter pilot in the world—there are, of course, countless claimants to that title—flying the best airplane is still going down if he is sufficiently outnumbered by almost any sort of fighter armed with reliable missile. Numbers are something we are short of in this era where the cost per pound of a modern fighter is becoming competitive with that of precious metals.

Red Flag is, admittedly, a clear air operation. Central Europe, with its low ceilings, bad visibility, and difficult terrain for pilotage does pose some different problems from the Nevada desert. There are, however, other places in the world where trouble is at least as likely as in Central Europe and where the geography and climate are remarkably similar to that of Nevada.

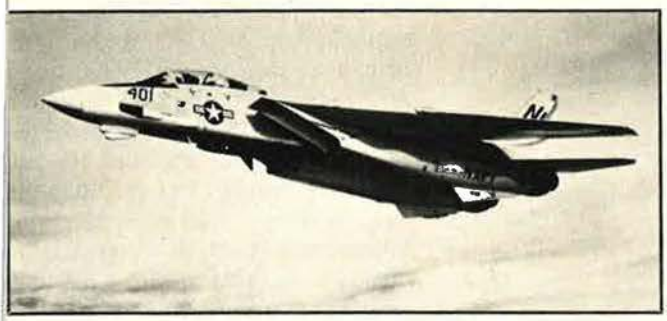
When we examine realistically the capability of the United States to deal with a military contingency in, say, the Persian Gulf region, it becomes apparent that tactical air forces would be among our first and most likely options. They can deploy more quickly than anything else in our inventory and be ready for action when they get there. And since the Red Flag exercises have made a case for the importance of numbers, something we have always known but tend to forget, it may be worthwhile to think a bit about the possibilities of some low-cost, low-sophistication—well, relatively low, anyway—augmentations to the high-cost fighters. An F-15 to do the target spotting, some little friends to help out with the fight.

One way or another it seems at least arguable that we must come up with some concept for augmenting and thus stretching our tactical force. Otherwise, attrition will put it down the drain pretty quickly. The Confederates' General Nathan Bedford Forrest was one of the first airpower prophets, no matter how unwittingly, when he advised getting there fustest with the mostest. Enough Me-109s would still win the day over not enough F-4s, just as an overwhelming force of P-51s negated the one-sided performance superiority of the Luftwaffe's jets toward the end of World War II.

The need for numbers of aircraft and reliable, flexible armament seem to be Red Flag conclusions. Unhappily, armament development has clearly lagged behind airplane development, with a resulting failure to realize everything the airplane/pilot combination is capable of. There is a need for an all-aspect missile. In the critique that ended the Red Flag week this was recognized by, of all people, a young Marine pilot who claimed the Marine Corps Research and Development Command, heretofore shielded from the public eye, had developed such a missile with the Air Force's needs also in mind. It is called the Bruno. One simply has to squeeze the trigger and give the command "Go, Bruno! Kill!"

That same critique, attended by all the pilots who took part in Red Flag, was in itself the most reassuring sort of evidence that, whatever else is wrong with the free world, there is nothing wrong with the people ready to defend it.

The 3,000,000-acre range used for Red Flag exercises contains a wide variety of tactical targets and simulated enemy missile sites, such as this SA-2 battery.



Navy F-14s in clean configuration, along with USAF F-5Es, simulated enemy air against friendly tactical forces.

RAF Jaguars went in on the deck against ground targets, the crews showing superb skill at low-level operations.

Gen. T. R. Milton, a graduate of USMA and a B-17 pilot in World War II, is a regular contributor to this magazine. During his thirty-four years of commissioned service, he held assignments as Director of Operations at MATS (now MAC), Executive to the Secretary of the Air Force, Commander of the 41st Air Division and of the Thirteenth Air Force, and Chief of Staff of TAC. His combat decorations include the DSC, Silver Star, DFC, Bronze Star, Air Medal, and Purple Heart. Prior to his retirement in 1974, he was US Representative to the NATO Military Committee.

The professional lessons learned were clearly brought out along with some splendid and irreverent humor. From the RAFs off-key serenade to life among the Yanks, to the deadpan remarks of the Texas Air National Guardsman, the critique was not only on a high plane technically; it was also a very good show, judged even by the standards of nearby Las Vegas.

The Cloud Around the Silver Lining

Still, in spite of the upbeat feeling a visitor brings away from Red Flag, some uneasy thoughts inevitably creep in. There is, first of all, the realization that our forces are very thin. Our tactical inventory is respectable enough, I suppose, but there is nothing behind it. No hot production lines, turning out more than a trickle of replacement aircraft, and as for pilots, a training program geared to peacetime.

Our whole tactical capability is, in short, there for everyone to see. There is nothing hidden. The ready Reserve and the Air National Guard will be there on Mobilization Day, and that is about it. Any future conflict will thus see us spending our capital, which is to say our trained pilots and our first-line equipment since the all-volunteer concept has effectively separated the citizenry from the matter of national defense. With no draft, or even registration for one, the reserve manpower pool is drying up. Any sort of national mobilization in our present state is almost beyond imagining. If a fight comes, we will go with what we have and worry about tomorrow later.

There are other uneasy thoughts that intrude on the happy feelings one has at Nellis. Do we, for instance, have sufficient spare parts to sustain a high-intensity operation? Are there enough missiles in our war reserve stockpiles for a high-sortie conflict?

Our tactical capability is a precious resource, for if there is one thing certain in this otherwise uncertain world, it is that we will have to use that capability sooner or later. The strategic nuclear forces are essential, no argument about that, but so long as they remain credibly strong, we can all hope they continue to remain uncommitted, as they have been since 1945. Strong tactical forces are a principal way to keep the missiles in their holes. Thus, Vietnam, for all the misery it caused, did give us a few breaks. We learned once again, at no risk to our own vital national interests, that we needed tactical air forces trained in the tough business of tactical air warfare. We also came out of that war with a reservoir of combat-tested aircrews who know what modern air warfare is all about. And, thanks to the foresight of some senior Air Force leaders willing to stick their necks out on a potentially high-risk training program, this combat experience is being passed on.

That is about all we could reasonably expect in these times of small expectations for the military. It would be comforting, however, to know that the Operations and Maintenance money, the war reserve munitions, and the problems of aircraft and pilot replacement were getting the same attention as is the readiness of our thin line of fighter pilots. ■

The Air Force is going all-out to ensure that every member has "a multiplicity of channels" for airing complaints, correcting injustices, and seeking counsel.

USAF's Growing Grievance System

BY ED GATES, CONTRIBUTING EDITOR

WHEN service members of yes teryear suffered a real c imagined bum rap at the hands of supervisor or military superior, c felt done in by the pecularities of th military system, there wasn't muc they could do about it. Except grum ble among themselves.

Few established routes for redres existed. Superiors often kept thei doors closed to underlings with prob lems. Many who did squawk wer automatically labeled as trouble makers. All this helped keep forma complaints at a low level, in all th services.

Others in uniform, two and thre decades ago, took what they felt wa the only path open: they aired thei gripes in letters to congressmen. This of course, was permitted, but it wa no secret that military officialdor frowned on the practice. Indeed, uni formed personnel who took the con gressional route, though they go their problems addressed promptly often complained of command re taliation via bad performance ratings unpleasant assignments, etc.

Most if not all of that is believed to have been stamped out, althougl an occasional charge surfaces to the effect that the unwritten "don't-write your-congressman-or-else" policy re mains.

The Air Force in recent years, at any rate, has laid on a "grievance system" of sizable proportions. Where once troops with genuine or per ceived gripes had few places to turn, today they are swimming in options. Some officials say there are too many (*see below*).

The official position, however, lets members take their complaints, prob lems, questions, and ideas—nay, it encourages them to do so—to a plethora of officials, offices, and boards.

"We urge Air Force members to tell someone of their prob lems, to get them into the open, to commu nicate," Brig. Gen. Keith McCartney told AIR FORCE Magazine. As Deputy Director for Personnel Plans, Hq USAF, he monitors the grievance machinery. It also receives the close attention of Lt. Col. Bill Korte, who is a branch chief in the Person-

el Plans Directorate, also at Hq. SAF.

Colonel Korte, explaining USAF's tionale for encouraging members sound off, said, "The way we treat eople impacts on readiness, productivity, and our basic ability to fight . . . we are sensitive to the needs of ur people . . . and to their right to now."

Both personnel officials said that ecause Air Force leaders consider ie service a "way of life" and not ist a job, the range of complaint ubjects is much greater than that overed in civilian firms. The latter re concerned mainly with compenation, working conditions, and other ob-related activities.

The military's subjects, in addition to those three, cover housing, medical care, recreational facilities, social ctivities, transportation, welfare programs, religious needs, commissaries, xchanges, etc. Hence the need to rovide USAF people "a multiplicity f channels" to be heard, to air ripes, protest adverse rulings, and eceive satisfaction, if warranted.

Assignments, base-of-choice, and romotions are popular complaint argets. So was the absence of junior nlisted travel benefits, until the government late last year extended the ntitlement to junior airmen going o and from overseas. General McCartney, noting USAF's strong upport for the travel benefits, hailed he legislation as "great for military eople." He also noted that Air Force has little control over numerous policies that draw protests, such s inadequate enlisted per diem and ubsistence allowances. On both, owever, Air Force continues to plug or relief.

Roads to Redress

Headquarters encourages members o first take their gripes to their supervisor or superior because, officials nsist, it usually is the speediest way o get action and satisfaction. But going through channels is not required.

Complainers are welcome to take heir squawks directly to the President, members of Congress, civil courts, all levels of the Inspector General system, the boards of the Air Force Secretary's Personnel Council, the equal opportunity and ocial actions offices, senior enlisted advisors, personnel management teams, chaplains, commanders' hotlines, base newspapers, commander's call, and still other outlets. The Board for the Correction of Military Records, though technically not in the "squawks-or-gripes" business, rules on alleged injustices and errors.

The service promotes this "completely open" system in basic training, ROTC units, professional schools, base papers, etc. Headquarters recently distributed a small mountain of 12½ x 15½ inch posters, citing all the aforementioned routes, to be tacked on bulletin boards Air Force-wide.

The Personnel Council

Thousands of present and former blue-suiters get involved with the half-dozen boards of the Personnel Council, which acts for the Secretary of the Air Force. These panels review cloudy discharges of ex-USAF people who want them upgraded; decide whether ailing members should receive disability retirement or the much less attractive disability separation; pass on the elimination of Academy cadets and the cashiering of officers; and handle many related questions, according to Council Director Maj. Gen. Earl J. Archer. They also field requests for waiver-of-service commitments and, because the personnel strength drawdown long since has ended, "reject virtually all of them," General Archer said.

Otherwise, he told AIR FORCE Magazine, the Council boards are approving the majority of requests that come before them. For example, in FY '77 they okayed the voluntary resignations of all 254 Academy cadets who applied, and of 1,406 active-duty officers (mostly Regulars) out of the 1,567 who applied. The Personnel Council that year allowed all fifty members applying to withdraw from the Survivor Benefits Program to do so; it also approved the disability retirements of 3,387 airmen but only 418 officers. The latter statistic mirrors the Defense Department's continuing tough stand against officer disability retirement.

The Personnel Council performs a little-known but decidedly "pro-people" function by looking closely at NCOs with sixteen or more years of service who, because of a sudden drop in duty performance or other alarming deficiency, are on the verge of being booted out. USAF's idea is to protect, if at all possible, their considerable equity in retirement. Thus, General Archer reports, the Council bends over backward in an effort to retain all these people.

Bulletin boards USAF-wide should be sporting this poster that lists most, but not all, the places members with complaints can go. A small mountain of these placards went to units and bases last year.

The Council also weighs pleas to get back in uniform from former airmen who were denied reenlistment. These petitioners usually cite good post-service behavior and other newly discovered redeeming features. Thirty-six of 250 such requests in FY '77 were approved.

The Council's biggest chore is reviewing tainted discharges. During FY '77 it looked at 1,082 "normal" requests for upgrading and approved 593, or 54.8 percent. This included 205 general, 111 undesirable, and eighteen bad conduct discharges, all raised to honorable. Also during that year the Council considered 2,061 discharge upgrading requests under the President's clemency review program for Vietnam veterans. Here it took a still more forgiving stand, boosting 1,348 of them, a 65.4 percent performance.

White House to Air Base

During the same year, about 8,000 USAF members wrote the President for help in correcting alleged wrongs. Nearly 44,000 USAFers and persons acting in their behalf contacted members of Congress. Fewer than twenty airmen and officers take their service to court each year, and very few of them win their cases.

Another 936 Air Force persons in FY '77 filed formal complaints charging racial discrimination, while 365 said they were victims of sexual discrimination.

Just about any kind of gripe can be tossed into the Inspector General complaint apparatus, and 12,000 to 18,000 members do just that each year. Complainants can go to their base IG office, which processes the matter locally until resolved. Or, if that makes them uncomfortable, they may go directly to the IG at their numbered Air Force, major command, or to the service's number one inspector himself, Lt. Gen. Howard M. Lane.

For those determined to go "to the top," he's located at room 4E-1076 in the Pentagon.

The service has designated the vice commander of each wing and base as the organization's IG for Complaints, because it gets the local command fully involved in the grievance process. Authorities are aware, of course, that critics view this as too cozy an arrangement for management and as smacking of undue "command influence."

"The way we treat people impacts on readiness, productivity, and our basic ability to fight . . ."

USAF officials disagree. Assistant Air Force Secretary (Manpower, Reserve Affairs, and Installations) Antonia H. Chayes recently told a House Armed Services subcommittee that the grievance system, with its safeguards and appeals procedures, is basically sound, in the best interests of USAF members, and is working well. The subcommittee members have been investigating, off and on, the grievance programs and polici of all of the US military servic

Disgruntled US soldiers in Ge many, coming off arduous mane vers, reportedly unloaded their bitt squawks on a visiting congressma and the probe followed. Althou the subcommittee has not issued report on its findings, USAF seen to have emerged unbloodied.

A network of appeals procedur aims to protect Air Force con plainants as well as those in seriou trouble. Included is the Military Ju tice System, governed by the Un form Code of Military Justice. It co tains automatic review procedures assure due process.

Board for Correction of Military Records

For many, USAF's most importa grievance panel is the Board for th Correction of Military Record sometimes called "the board of la resort." Located in the Pentagon, th BCMR is composed of high-lev USAF civilian executives. They co sider pleas from former Air Forc members and active-duty peopl alike, but only after all other avenue for possible redress have been ex hausted. Some come to the BCM to have discharges upgraded; other seek restoration of leave unduly

AIR FORCE BOARD FOR THE CORRECTION OF MILITARY RECORDS

Annual Favorable Determinations*

	1977		Jan.-June 1978	
Category	Closed	% Fav	Closed	% Fav
1. Dismissed/Discharged (Court Martial)	71	49	26	73
2. Administrative Discharge	285	61	109	76
3. Disability Retirement	120	32	88	28
4. RSFPP/SBP	110	63	71	65
5. Leave Correction	156	97	63	90
6. Service Credit	11	55	13	69
7. Promotion	545	98	362	99
8. OER	56	38	46	63
9. Promotion Passover (P/O)	49	61	31	81
10. OER & P/O	19	37	11	55
11. Void Court Martial	6	50	0	0
12. Subsistence Allowance	14	100	4	100
13. Supplemental Promotion	33	88	34	0
14. Grade Determination	10	70	10	60
15. Reenlistment Approval	13	0	28	11
16. Remission of Indebtedness	4	75	3	100
17. Awards	9	44	8	100
18. Other	655	65	451	55
TOTAL	2,166	70	1,358	69

* Cases resolved in favor of petitioner.

harged, retroactive promotion, vard of Reserve participation credit, id related relief. OER and promo- on passover cases give board mem- ers the most trouble, according to rank S. Dispenza, the civilian official ho heads the Board.

Are the BCMR members sympa- hetic? Do they frequently act for he complainant? "Definitely yes," Mr. Dispenza says. He cited their ecord for 1977 when they closed ut 2,166 cases of which 1,516, or eventy percent, went in favor of the laintiff. The statistics vary depend- ng on the particular category. OER hallenges, for instance, were suc- essful in only twenty-one of the fty-six cases considered that year. And the results were similar with ases challenging both an OER and promotion passover (P/O). But vith passover cases alone, sixty-one ercent were overturned and thus vent in favor of the petitioners (*see ccompanying table, on the bottom f the adjoining page*).

Dispenza said that until 1977 the Board rendered favorable decisions n just half its cases. He attributed he twenty percent increase to changing standards, more liberal nterpretations, the President's re- axation of discharge upgrading cri- eria for Vietnam-era veterans, and nore compassion by government uthorities generally."

The Corrections Board, unfortu- nately, has a logjam of 3,600 cases awaiting decisions. This means some won't be decided for more than a year. The trouble began two years ago when the caseload stood at only 1,300. But a court decision caused the Board's administrative workload to increase enormously, and the glut developed. To pare it, Dispenza late last year beefed up his staff of ex- aminers and they began hearing cases three times a week instead of twice. To get the BCMR process in motion, USAF members should check AFR 31-3.

Still other avenues that may be taken to correct old problems or shortstop new ones:

- Involuntary Administrative Dis- charge Boards. Airmen being eased out of service for nonproductivity, poor performance, etc., can protest the ouster, and legal counsel is avail- able. Those who don't make it here may appeal to the BCMR which, during the first half of last year, overturned the administrative dis- charges of seventy-six of the 109 air- men who sought that action.
- Physical Evaluation Boards evaluate medical problems likely to end a member's career and weigh his appeal.
- Flying Evaluation Boards deter- mine flying status qualification.
- Classification Boards can grant relief to persons who disagree with personnel classification actions.
- Appeal of OER and Airmen Performance Report (APR) Rat- ings. AFR 31-11 explains how offi- cers and airmen can seek correction or removal of reports they consider unfair. If the cases are strong, such reports may be expunged.
- Appeal of Nonjudicial Punish- ment. Every Article 15 resulting in punishment requires that the person accept it or appeal it to the next higher authority. Colonel Korte re- ports that in FY '77, more than 20,650 Article 15s were handed out Air Force-wide and the recipients of 2,245 of them appealed. Only 294 appeals were successful.

Redress Links in the Chain of Command

What has happened to the chain of command? Many complaints dealing with jobs, working condi- tions, off-duty activities, housing, pay, etc., are processed within the command chain starting with the complainant's immediate boss. "But not enough," some critics say. By- passing the first sergeant or unit commander in almost any gripe sit- uation reduces their usefulness and undermines their authority, these critics believe. One general officer told AIR FORCE Magazine that when he was a wing commander he was swamped with various advisory boards handling out-of-channel com- plaints and was forced to reduce these panels.

Informal conferences with base chaplains, legal aides, medical coun- selors, personnel officials, education offices, finance people, and social actions staffers were cited as still other places where problems may be solved early.

Colonel Korte also pointed to the Hq. USAF personnel management teams that visit bases "mainly to listen" and take back ideas to the Chief of Staff. And standing com- mittees and unit advisory councils of the parent base advisory council sys- tem provide a similiar function for base commanders.

Senior enlisted advisors work full time for wing and higher-level com- manders, providing advice on en- listed problems. The advisors mix constantly with the troops and, as a result, Korte said, "have the pulse of their bases, know where the prob- lems are, and help stamp them out before they gain a foothold."

Commander's Call, commanders' columns in base papers, and com- manders' telephone hotlines are also touted as other "excellent means" of getting gripes into the open for early solution. A decade ago hotlines would have been unthinkable.

And if all the above is not enough to cope with grievances, there re- mains the "Open-Door Policy." Many USAFers may be unaware it exists. But it is written into regula- tions (AFR 123-11 and 30-1), and it directs the head of each Air Force activity to:

"Insure an Open Door Policy at every level of management to make certain that personnel have easy ac- cess to their Commander to air com- plaints and seek counsel."

That doesn't mean, however, that one can suddenly appear at Room 4E-929 in the Pentagon's prestigious E-Ring and gain an immediate audi- ence with the occupant, the Air Force Chief of Staff. ■

POSITIVE COMPLAINTS

Formal suggestions, sometimes called "positive complaints," are an integral part of USAF's Griev- ance Program. Headquarters offi- cials say that while complaints in themselves cannot be submitted under the suggestions program, "many complaints result in the submission of positive sugges- tions." That is, "if you don't like the way something is done, tell us a better way to do it."

The Suggestions Program started in September 1968. Since then, USAF military members have submitted 1,494,675 formal sug- gestions of which 250,951 were adopted. Tangible benefits to the Air Force came to $744,099,659, and award money totaled $13,- 278,828.

Aerospace and defense topics ranging from spa defense to the future of the strategic triad were probe by some of the country's top authorities at an AF National Symposium entitled . . .

TOWARD A NEW WORLD STRATEGY

BY EDGAR ULSAMER, SENIOR EDITOR

THE central military goal of the Soviets clearly is a "preemptive counterforce capability. There is no other way I can interpret their actions. . . ."

This assertion by the Deputy Under Secretary of Defense for Strategic and Space Systems, Dr. Seymour L. Zeiberg, underscored the premise of the Air Force Association's National Symposium titled "Toward a New World Strategy," held in Los Angeles, Calif., October 26–27. The event attracted more than 550 industry executives, civic leaders, AFA representatives, and military guests.

Pointing out that the nation is in the throes of a wrenching reexamination of its strategic policies—including the central question of whether the strategic triad of ICBMs, submarine-launched ballistic missiles, and strategic bombers should be continued—Dr. Zeiberg offered the "pessimistic view that perhaps the Soviets have the consensus, the money, and the momentum to proceed in a vigorous manner in their strategic program [while] we run a severe risk of being put in a catch-up posture."

The Soviet Union's development and deployment of strategic arms, particularly of highly accurate, high-yield MIRVs (multiple independently targetable reentry vehicles) "beyond levels consonant with maintenance of parity

More than 550 industry executives, civic leaders, AFA representatives, and military guests attended the two-day meeting.

d deterrence," will threaten, in a few years, the US CBMs in a "significant military sense." Spreading recogtion of this developing imbalance is causing a "raging bate [over] what to do about our ICBMs," the Defense ficial said. Two opposing views dominate the debate: ne notion that the US should rebase and modernize the CBM force collides head-on with the judgment that rategic force levels need to be pared down and that the CBMs safely can be phased out over time. The latter hool of thought postulates further, according to Dr. eiberg, that improving these weapons would serve only drive Moscow toward escalating the strategic arms ace.

Dr. Zeiberg countered that contention by pointing to ie triad's intrinsic value of providing the nation a ashion of time sufficient to "sit on for awhile, so that we an design our response to the Soviet buildup carefully," nd with due regard to economic, arms control, and eneral military impacts. He added that the emerging oviet ICBM advantage does not yet mean across-theoard vulnerability of "our deterrent or of our country. lowever, there are perceptual [and] real values" accruing Moscow from its ICBM lead, he told the Symposium. he Soviets—and "so far as I can see, the rest of the orld"—view ICBMs as the principal and most visible easure of strategic strength. The advantage, then, is sychological and military leverage for the Soviet Union, r. Zeiberg suggested. Hence, it becomes imperative for ie US to "take some action to modernize our ICBMs nd in general modernize our strategic forces," Dr. Zeierg said.

While arms control, in particular SALT II, is a step in he right direction, "we can't count on SALT to solve ur immediate problems," Dr. Zeiberg argued. Gains rom SALT will be realized in piecemeal fashion and it s, therefore, "unfair to use SALT as the whipping boy nd to argue that the negotiations should be loaded more oward solving [the US ICBM and other strategic] roblems. These [issues] existed before we got serious bout strategic arms limitation efforts."

By the same token, Dr. Zeiberg asserted, SALT does ot absolve the US from maintaining and modernizing the riad at a time when reneging on this mutually reinforcing ystem of deterrence "could be viewed as a submissive esponse to Soviet actions [*i.e.,* the ICBM buildup]." What is needed most urgently in the field of strategic force nodernization, Dr. Zeiberg told the AFA Symposium, are ebasing of the ICBMs in a survivable mode and develpng a new ICBM. "We need a new ICBM—in my view—ecause it is not only the right [response] to the Soviets' rowing offensive forces, but also to the growing Soviet arget base which we have to keep at risk. . . . By the ime we could have a new ICBM, the Minuteman [ICBM] vill be about fifteen years old. That is a geriatric position or equipment of that kind."

In describing Defense Department and Air Force plans or a new ICBM, the Defense official explained that the entagon favors designs that—to a degree—can be used y both USAF and the US Navy. Three different approaches have been analyzed involving what he termed he "fully common," the "largely common," and the "partly ommon" missile. The latter is now the preferred solution, he said. The partly common design is an MX missile using propulsion stages of a diameter "that are useful to the Navy in the evaluation of a new SLBM—the Trident II—but is not a common missile in the sense of the [first two] approaches. The first and third stages [of MX] are common with the Navy and could become the first and second stages of Trident II." The performance losses suffered by MX by going from the ninety-two-inch diameter envisioned for MX by USAF to eighty-three inches means one less RV—ten rather than eleven—and an insignificant cut in range, Dr. Zeiberg told the Symposium.

In assessing airmobile/air-transportable ICBM basing designs, Dr. Zeiberg suggested that these schemes do not appear to be the "best approach to get ICBM survivability." Multiple aim point (MAP) basing, by contrast, he pointed out, offers the central advantage of soaking up Soviet warheads in "the manner of a sponge. Airmobile systems do not." The MAP deterrent "sponge" could be sized so that a Soviet attack on such a system becomes thoroughly unreasonable.

Pure airmobile ICBM designs, Dr. Zeiberg said, are vulnerable prior to launch and "give up the basic quality of [a diversified] triad."

NAVAL STRATEGIC SYSTEMS

Dr. Zeiberg affirmed the long-term need for highly accurate SLBMs because of the US doctrine of "taking out" time-urgent hard targets in the Soviet Union. Although air-launched cruise missiles (ALCMs) will be effective against hard targets, they require about ten hours to reach their destination, compared to less than thirty minutes for ICBMs and SLBMs. "There are many targets in the Soviet Union that need to be attacked on a short time scale because they represent critical Soviet assets that [are essential for fighting nuclear war]. . . . We need to stress . . . our ability to take out time-urgent Soviet targets," Dr. Zeiberg declared.

The triad structure rests on mutually reinforcing and "hedging" the capabilities of each of its components. It follows, Dr. Zeiberg reasoned, that the hard target kill capability—basically a matter of high accuracy and adequate warhead yield—of the ICBMs is not yet matched by the SLBM force. Further, Dr. Zeiberg told the AFA meeting, there is a "mismatch in our submarine and our new missile. As a result I believe we ought to upgrade our SLBMs—and perhaps build a new one—to capitalize on the full throw-weight potential that could be built into the launch tubes of the Trident submarines. That, in turn, not only adds throw-weight . . . but, equally important, [increases] range." The operational scope of these weapons would be widened in a major way and the task of Soviet antisubmarine warfare (ASW) made even more difficult, he added.

The Defense official also recommended continuing development—although not necessarily deployment—of the MK 500 maneuvering reentry vehicle that could be used by the Trident I and II SLBMs. This warhead is designed to evade Soviet ballistic missile defense (BMD) interceptors. Because of advances in Soviet BMD technology "there is reason to exploit the MK 500 development [by going] one more major step to give it considerably increased capability." This step consists of adding the ability to cope with even more advanced BMD technol-

ogies than so far displayed by the Soviets, Dr. Zeiberg explained. But he added that while OSD intends to take that next step, "I can't say how far we will go and whether or not we will enter [the MK 500 program] into engineering development."

MANNED PENETRATOR VS. STANDOFF LAUNCH SYSTEM

Another matter of urgency in modernizing US strategic forces, Dr. Zeiberg said, is the choice between a new manned penetrating bomber and a standoff machine that launches cruise missiles. While he declined to take sides, he did stress the basic urgency of making a choice because by the time the B-52 fleet could be replaced by a new system, these aircraft "would be about thirty years old on average," which introduces unacceptable burdens in reliability, maintenance, and performance. Another plus accruing to the nation from a modern bomber force is its broad utility in the nonstrategic arena, a fact that has been largely ignored in recent public discussions of the relative merits of these weapons, he pointed out.

Reviewing USAF's antisatellite weapon system (ASAT), the Defense official reported that this recently authorized program could be flight-tested by about 1982. But no decision to do so has been made. "Whether or not we fly" will be determined mainly by the outcome of current bilateral discussions with the Soviets that seek to ban deployment of space weapons, he added.

Other points Dr. Zeiberg made included:

- The Defense Department and the Air Force, for the time being, plan to carry forward the Cruise Missile Carrier Aircraft (CMCA) program *only* to the point of flight-testing two competitive prototypes. No decision to deploy these systems, which could accommodate between fifty and eighty ALCMs, has been made. The flyoff is scheduled to get under way in about two years.
- There is considerable discussion in Washington about the advisability of developing a medium-range ballistic missile (MRBM) that could be carried by B-52s along with ALCMs, as well as be deployed with US ground forces in Europe. Pegging such a missile's range at about 2,000 miles, he ascribed to it "a great opportunity" for opening up the B-52's penetration corridors. So far as the European requirement is concerned, the question of whether the system should be a ballistic missile, a ground-launched cruise missile, or an aircraft-launched ballistic or cruise missile is under intense study.
- A recent Defense Department study of the long-term costs of modernizing the triad and assuring its viability to the year 2000 arrived at a total price tag of about $125 billion. That sounds like a lot of money, but it is a little less than ten percent above what is currently programmed for US strategic forces. Ten billion dollars more than we currently program, spent over a twenty-one-year period to preserve the triad, to prevent block obsolescence of strategic weapons, to counter Soviet technological advances, and to maintain "perceptual balance" with the Soviets appears to be a reasonable, critically important investment, Dr. Zeiberg argued.

SAC LOOKS AT THE BALANCE

". . . In the absence of US strategic initiatives, by 1984 —give or take twelve to twenty-four months—the US could be in a position of nuclear inferiority," Ge Richard H. Ellis, Commander in Chief of the Strate Air Command and Director, Strategic Target Planni of the Joint Chiefs of Staff, told the AFA Symposiu The key point in redressing current adverse trends, pointed out, is that "strategic commanders who mu fight with forces in-being are more interested in what o highly touted technological lead has provided them rath than what it can do for them in the future." Reversal the incipient strategic imbalance pivots on three k programs: the manned penetrating bomber and stando weapons; the MX intercontinental ballistic missile; and survivable command control and communications (C system.

Treating a manned penetrator as a categoric requir ment for the foreseeable future, he termed the B-1 pr gram, even though the Administration denied productic authorization, "an important step forward in our moder ization attempts. We should continue the progra through the complete research and development proce and flight tests so we can take full advantage of the mar advances in technology that have come from this projec . . . In this same vein, we should also build and test few stretched FB-111s as another modernizatio option."

"Exciting new technologies" applicable to the ne generation of manned strategic penetrators are being d veloped, "some of the standard variety and some no standard," General Ellis said. But the state of thes developments has not yet matured sufficiently to warra definite decisions. "Until we are [in a position to choose we . . . should have the B-1 and FB-111 stretch options, SAC's Commander in Chief said.

When the cruise missile comes into the inventory i 1982, SAC plans to configure the B-52G aircraft "wit twelve externally mounted ALCMs and continue the pres ent loading of SRAM and gravity weapons in the bomb

Dr. Zeiberg at the floor mike.

General Ellis at the rostrum.

ıy, thus allowing the bomber to launch its cruise mis-
es and then penetrate enemy airspace," according to
eneral Ellis. This combination of "shoot and pene-
ate," he said, offers several advantages:

"First, it increases the overall flexibility of the bomber,
hich, in turn, offers the mission planner several new
ptions as he attempts to cover an ever-expanding target
ase.

"Second, the tactic forces the Soviets to divide their
efensive efforts and prevents them from concentrating on
ne particular area. In addition, they must divert rubles
om offensive to defensive systems.

"Finally, the ability to launch ALCM *and* penetrate
lso provides a hedge against the uncertainties of tech-
ological breakthroughs by the Soviets."

A subsequent step, he said, might be development of a
ruise missile carrier aircraft "to be used in conjunction
ith the bomber. Among the candidates being studied
r this role—in addition to a new, specialized design—
re: On the commercial side, the 707, and the wide-body
47, DC-10, and L-1011; military versions include the
-5, a variant of the B-1, and the C-14 and C-15 short
ıkeoff and landing prototypes."

Predicting that "significant improvements in missile
ropulsion, performance, and yield will be made even
efore the first ALCM becomes operational," he stressed,
owever, that this weapon "is not a central system in the
ame sense as ICBMs, SLBMs, and bombers. The ALCM
chieves its greatest effectiveness when combined with the
ıanned penetrator. The ALCM/bomber combination
rings together the best values of the bomber—flexibility,
redictability, and dependability—with the needed values
f the ALCM—cost-effectiveness, added penetration, and
reat accuracy. Together, the ALCM/bomber partner-
hip presents a significant advancement in our deterrent
apability."

Terming growing vulnerability of USAF's silo-based ICBMs "today's most vital issue," the CINC SAC described the ICBM as "the centerpiece of our nuclear deterrence force due to its near 100 percent alert rate, positive control characteristics, and quick reaction capability. It is unthinkable not to continue the one system capable of countering the massive Soviet ICBM threat. Therefore, we must develop a new missile and deploy it in a survivable basing mode. We can build that missile today. It is known as the MX and it represents the most advanced ICBM that American ingenuity can provide . . . and I have gone on record that full-scale development should begin before the end of [1978]."

The most appropriate course of action at present, in General Ellis's view, is to "concentrate on developing the best missile possible for the dollars available—that is the full-size MX. Then, if it becomes desirable to go to an eighty-three-inch MX at some point in the future, we will be able to maximize the capabilities of both the ICBM and SLBM versions."

Assessing the range of ICBM basing options under study, General Ellis conceded that the airmobile mode is less affected by environmental concerns than is MAP, but has other disadvantages, especially cost. It would require a fleet of new carrier aircraft, new training planes, and greatly increased operating costs. "A force of this type . . . should be on alert 100 percent [of the time], not fifty or sixty percent," he said.

General Ellis seconded Dr. Zeiberg's view that by sharing the strategic bomber's typical vulnerability problems, airmobile ICBMs fail to meet the triad's principal offensive and defensive criteria—diversified capability and mutual support by the individual components. While not stating a preference for a specific basing mode, General Ellis urged that the covered trench concept—involving a tunnel ten to twenty miles long within which a single missile platform would be moved—not be eliminated from further consideration.

He acknowledged that the covered trench approach entailed some uncertainties but countered that since MAP introduces peculiar problems in terms of verification and environmental impact, "we should not foreclose the trench [as long as there is a possibility that we could] get closed out on the other basing mode [MAP] for environmental reasons or because of SALT."

While SAC's existing C^3 systems, predominantly designed and first introduced in the 1950s and 1960s, are meeting present peacetime requirements, General Ellis said, there is reason for concern about their ability to perform in war and about their vulnerability to new Soviet technology.

"If we are to have the degree of flexibility and responsiveness needed to . . . implement strategy, control forces, and employ weapons under all conditions, a comprehensive C^3 system must provide national decision-makers and nuclear commanders with:

"First, detailed, unambiguous surveillance, warning, and attack assessment information; and, second, a survivable, two-way, secure communications capability that can stretch all the way down to the forces in the field."

The Air Force is developing systems that can meet the growing demands for survivable command control and communications, General Ellis told the AFA Symposium.

SAC's Commander in Chief underscored the impor-

*eneral Moore during
's presentation.*

*Generals Moore and Hill
during a break.*

tance of boosting the command's aerial refueling capacity, especially the number of tankers. "We need a lot of booms in a lot of different places." That need will be accentuated with the arrival of ALCM, beginning in 1982. According to General Ellis, a typical mission flown by a B-52G carrying twelve ALCMs will require "probably about half a tanker more" than the same aircraft operating with gravity bombs and SRAMs. A force of 150 ALCM-equipped B-52s is programmed. Because of the need to increase offload capacity, General Ellis predicted that over the long run USAF probably will have to buy more than the currently scheduled twenty KC-10s, the new, large advanced tanker/cargo aircraft derived from McDonnell Douglas' DC-10 wide-body jetliner. SAC also is interested in reengining the KC-135 fleet, which would "yield an efficiency gain worth on the order of 150 new tankers," he said.

THE MAC STORY

The KC-10 was also discussed by Gen. William G. Moore, Jr., Commander in Chief of the Military Airlift Command, who described it as "much more compatible" with USAF's large airlifters—the C-5 and C-141—than the KC-135. He pointed out that "it simply takes too many KC-135s to refuel our big airlifters and the KC-135 has to be based overseas somewhere to support the ranges of the airlift fleet. The KC-10, on the other hand, will give us all the support we need for contingencies in Europe, the Middle East, or in the Pacific—while operating solely from the United States."

The latter factor is critical, he said, because "we simply cannot be in a position of having to rely on other countries to let us land and refuel."

Referring to a number of analyses by various elements of the US Defense community, General Moore said, "while these studies dealt with different scenarios, assumptions, and conditions, they were unanimous in one respect: . . . We don't have airlift capability today to do the major tasks that we could be called upon to do in the future."

MAC attempts to ease the problems of equipment shortages through careful planning. "We have gone to the extent of trying to plan out in detail the first 4,000 loads that we would be flying in a NATO . . . contingency. . . . We are looking at our onload bases [110 of them] that we have got to move into, pick up people and equipment, and move to the NATO area. In Europe and the Mediterranean area we have ninety-six offload bases" that need to be kept ready to receive the incoming volume of reinforcements, General Moore said.

An even more demanding airlift problem exists in the Middle East, he pointed out. In defense of a country like Saudi Arabia, MAC would have to respond with "its very maximum effort because of the distances involved . . . and the heavy firepower required" by supporting US air, ground, and naval forces, he said.

One of MAC's foremost concerns is preserving and, where possible, enhancing existing equipment to keep the airlift deficit from getting worse, according to its Commander in Chief. Of primary importance here is redesigning the C-5's "deficient wing," which, if uncorrected, would severely limit the aircraft's life expectancy. "We have just completed the design of a new wing. We'll retain some of the outer wing but in essence the structura members have got to be redone. Our first aircraft is i the depot to receive a new wing for airborne testing We'll also build another one for static fatigue tests. . . If these tests prove out the new wing . . . we will star modifying our [first] aircraft in February 1982. This program will last until 1987," according to General Moore Cost of the retrofit will come to about $1.33 billion, h estimated.

Five key participants Dr. Zeiberg, Dr. Donald M. Kerr, and Generals Ellis, Moore, and Hill during the keynote address by Secretary Stetson.

Enhancing the C-141's capability by stretching its fuselage twenty-three feet and equipping it for aerial refueling, General Moore said, will reduce MAC's airlift deficit significantly.

One of MAC's major requirements is to replace the C-130 fleet because "our ground forces, which the C-130 is designed to support, are simply outgrowing the airplane. The Army is 'heavying up' [its] divisions by increasing the size and weight of its firepower. . . . Much of it simply will not go in the C-130," General Moore said. MAC and the Air Force, therefore, are examining ways to reactivate the Advanced Medium STOL (AMST) program, including aircraft design changes to increase capability in the strategic airlift role.

Another major concern of the command, General Moore said, is enhancing the Civil Reserve Air Fleet's (CRAF) aircraft, which provide fifty percent of MAC's wartime airlift capacity. CRAF's wide-body aircraft lack the floor strength and doors to handle large, heavy military equipment. MAC wants to add larger doors and stronger floors so that these aircraft can be converted quickly for military cargo operation. The Pentagon's efforts to obtain funds for this modification—sought for several years—were frustrated by Congress in its last session.

MAC, General Moore said, is getting serious competition from the Soviet Union. The Soviet equivalent of MAC "is building up very respectable" capabilities, with about 1,350 transport aircraft and about 320 helicopters. This fleet includes fifty An-22 large turboprop transports similar in size but "not as good as the C-5," as well as

:tween 650 and 720 An-12s (the equivalent of USAF's -130), he said. In addition, between fifty and eighty -76s—almost carbon copies of the C-141—are now in ıe Soviet inventory. These aircraft are being produced : a rate of two and a half per month. Augmenting the ıilitary inventory are some 1,500 long-range civilian air-'aft. About 1,200 of these Aeroflot aircraft are ear-ıarked for rapid transfer to the military during crises ıd tied at all times to the military command and con-'ol system, General Moore said.

Soviet military airlift capabilities proved to be "very :spectable" when used to move reinforcements into thiopia last year, General Moore pointed out.

STRATEGIC DEFENSES

"We do have the capability *now* to detect and assess large-scale ICBM attack on the US—and to so notify ıe President"—and to that degree can support a *launch n warning* (firing USAF's ICBMs before a Soviet ICBM ttack destroys them) policy, Gen. James E. Hill, Com-ıander in Chief of NORAD/ADCOM, told the AFA ymposium. But there are deficiencies if the objective is) extend launch on warning to flexible response and milar kinds of graduated retaliatory actions, he warned.

NORAD is taking steps to improve its warning capa-ility, "with particular emphasis [on] attack assessment. . . We are now involved in a program which should rovide a major advance in our attack characterization apabilities by upgrading BMEWS [Ballistic Early Warn-ng System] hardware and software . . . thereby greatly in-reasing the quality of data provided by the system." At resent, the only radar capable of separating RVs and ounting them is the Perimeter Acquisition Radar Attack haracterization System (PARCS), transferred to the Air orce after the Army's Safeguard ballistic missile de-ense program was canceled by Congress, according to eneral Hill. But PARCS, he pointed out, even though echnically a sound system, is in the wrong location, with he result that its information arrives "too late" for full xploitation.

In the future, General Hill suggested, large-aperture, igh-resolution, space-based radars should be able to rovide detailed early warning information of ICBM fir-ngs as well as of strategic bomber threats.

The space defense mission of NORAD/ADCOM, Gen-ral Hill said, is "my greatest long-range concern. It is lso a misnomer, since today there is no space defense. What we actually do is observe space . . . we do not and annot defend our interests in that critical medium."

In 1974, ADCOM was assigned responsibility for ad-anced space defense programs, covering three specific ields of military space activities: surveillance, survivabil-ty, and space defense. NORAD's surveillance task in-reases in both importance and difficulty as the number f man-made objects in space proliferates. "We must now of the presence and movement of all objects in pace so that new packages can be readily detected and dentified if we are to know instantly of possible threats o the nation," General Hill pointed out. He added that y 1985 the number of such objects will have more than loubled from the present level of just below 5,000. Modernization of the command's sensor systems, there-ore, takes on increased urgency.

NORAD's mission of assuring the survivability of US spacecraft "has come in sharp focus in recent months, because of Soviet military space activities," General Hill said. These activities were "given new life in 1976 with a series of launches that has continued into this year." As a result, the need for an integrated national space defense policy becomes evident, with the "development and implementation of such a policy [emerging] as a principal long-term goal of ADCOM." For this purpose, ADCOM has urged creation of a space defense and operations control center to coordinate "national defense space efforts to ensure the success and security of our space resources," he said.

In assessing immediate actions that might have to be taken if any of the nation's military spacecraft were attacked, General Hill called attention to ADCOM's 10th Aerospace Defense Squadron at Vandenberg AFB, Calif., which, "over the years . . . has compiled a record of thirty-seven successful launches and represents the only pool of Air Force launch expertise. We believe that it is logical to consider the 10th for such tasks as the proposed survivable launch program, whereby critical satellites lost during hostilities could be quickly replaced." ADCOM, General Hill pointed out, also seeks—"and I have [so] recommended to the Air Staff"— operational responsibility over the military operations of the Space Shuttle.

The NORAD/ADCOM CINC told the AFA Symposium that, as yet, the Defense Department and the Air Force have not decided how the nation's nascent space-defense capabilities will be organized and to which command they are to be assigned. He suggested that regardless of the outcome, there is no danger of an intramural squabble between his command and SAC, the other key contender for the military space mission.

In the field of air defense, General Hill said, "The tools we now have are limited and aging. Our interceptor fleet has been pared down to bare bones. We and our Canadian allies are operating 1950-vintage interceptors . . . the F-101 and F-106. The airplanes, in many cases, are older than the men who fly them. There are few replacement parts and every lost aircraft results in a reduction of either available squadron aircraft or the training base." He predicted, however, that in line with Defense Department guidance, a new dedicated interceptor would enter the inventory and that the aircraft would be a modified F-15. But General Hill added that the Tactical Air Command, rather than ADCOM, would operate the air defense aircraft of the future.

The NORAD/ADCOM CINC acknowledged that the US has no defense against Soviet cruise missiles. Similarly, the growing fleet of Soviet Backfire bombers poses "a powerful threat already. SALT may be the best possible restraint on Backfire, [but] if we had to defend against [these aircraft in a comprehensive way], we would need a very large air defense system, at least as large as we had in the 1958 to 1960 period. But even that would not guarantee that some bombers wouldn't get through. Air defense is very expensive and not leakproof," according to General Hill. ■

(AIR FORCE *Magazine will conclude its report on AFA's Los Angeles Symposium in the February issue.*)

Airman's Bookshelf

Refighting World War II

The German Army 1933–1945: Its Political and Military Failure, by Matthew Cooper. Stein & Day, New York, N. Y., 1978. 598 pages with index, maps, and photographs. $17.95.

Each year brings a new crop of books on Adolf Hitler's military; there seems to be an unslakened thirst for books that replow the now well-leached soil of the Third Reich. Bibliographies become thicker in secondary sources and thinner in documents. It pays those interested in expanding their World War II professional libraries to survey features such as the "Airman's Bookshelf" before investing at the inflated cost of books today. That advice is especially relevant when considering the high cost of the volume under review here. Matthew Cooper's book is a poorly executed, thinly documented, overlong, frequently contradictory, naïve treatment of the role played by the German Army in Hitler's twelve-year, "thousand-year" Reich.

Professional historians will look no further than the first chapter to doubt Cooper's judgment. Early on they are told that the German Army of the 1920s and 1930s was the "ideal of the non-political Army held so dear by western society." It is well known that Cooper's ideal "non-political Army" conducted its own foreign policy with Lenin's and Stalin's Soviet Union to circumvent the Versailles Treaty without even the initial knowledge of the German President and Chancellor. That Army also turned a blind eye toward rightist coup attempts and its guns on leftist revolts during the 1920s.

Cooper's underlying thesis is that the lack of political sophistication found in the German Army was its ultimate undoing in domestic politics and foreign adventures, yet his own evidence contradicts his thesis. On one page he claims that Hitler's leading generals were unwilling to see the armed forces used to fulfill the Führer's political dreams, and on the very next page Cooper quotes Hitler's top general exhorting the officer corps to prepare the German Army for war "so that any favourable political opportunities may be militarily exploited." Would one expect less from an officer corps schooled in Karl von Clausewitz's views on the relationship between war and politics?

Cooper's military perceptions are less contradictory and less marred by a selective use of evidence. But, for all that, they are not very deep. One example familiar to an aviation-oriented audience will have to stand for all. Those acquainted with the rise, decline, and collapse of the Luftwaffe will agree with Cooper that the German Air Force was "primarily a tactical instrument of war designed to support the Army in the field," and that many of its shortcomings came from that lack of independence. They would not, however, agree with Cooper's assertion that the Germans could have successfully invaded Britain in the summer of 1940 without first winning air supremacy over the English Channel and the southeast coast of Britain.

Cooper writes that trying to clear the skies of the RAF was a wasted effort and that had the Luftwaffe "joined battle with the RAF over the beaches before, and during, the landings, the operational conditions would have put the German planes on a more equal operational footing with the British and might have led to victory. . . ." Given the vastly superior strength of the British Navy, such a move would have been suicide.

Those interested in delving deeply into Germany's World War II Arm —its political and military actions- would do better with John Wheele Bennett's now fifteen-year-old *Th Nemesis of Power.* It has not bee superseded, present company i cluded.

—Reviewed by Lt. Col. Ala Gropman, Hq. USAF.

The Espionage War

Hitler's Spies, German Military Intelligence in World War II, by David Kahn. Macmillan, New York, N. Y., 1978. 543 pages, plus notes and index. $16.95.

We are more conscious of th intelligence breakthroughs of th victor during a war than we are the significant successes of th vanquished. Nowhere is this mo true than in World War II, where th Allied intelligence coups in Euro and the Pacific contributed to maj victories.

David Kahn, who told us abo those successes in his best-sellin book, *The Codebreakers,* now tel us of the successes, and failure of Nazi Germany's spies. The boo has some valuable lessons for U civilian and military leaders.

It is unnerving to read, for exam ple, that in the famed US bombe raid on the Ploesti oil fields, th Germans had been forewarned by simple breach of security. Kahn re ports how the Germans were de tecting the size, schedule, and tar gets of bombing raids by listenin to tests of the radios in the bombers before they took off.

As Kahn tells it: "One of air radi reconnaissance's greatest success es came during the American bomb ing of the Romanian oil fields a Ploesti. On 1 August 1943, 178 four engined Liberators lumbered int the air at Bengazi in one of the longest-range and potentially one o the most important air strikes in the war, for Ploesti was Hitler's chie source of oil for his thirsty wa machine.

"A Luftwaffe radio reconnais sance unit in Greece detected thi and alerted all defense command that a large formation of bombers had been taking off since earl morning in the Bengazi area. This gave the defenses at Ploesti, the strongest in Europe, plenty of time to get ready.

"When the bombers roared in a

errick-top height over the oil field, ith its wells, refineries, and tanks, ey were met with the heaviest ntiaircraft fire encountered by nerican bombers during the war. fty-three planes, or almost one ut of every three, were downed, nd dozens of Americans died. And e wells kept pumping."

For want of a nail a kingdom was st, and intelligence can be that ail. Kahn writes that German in-lligence underestimated British ghter replacements, "possibly sing as a basis the much more isurely German airplane produc-on." It also overestimated British r losses, "basing its figures on lots' wildly overoptimistic reports." he result: "This assessment per-aps helped Hitler and Göring be-eve that they had defeated the ritish in the air enough to suspend eir attacks on the fighter squad-ons. With this they lost the Battle f Britain. The abandonment of these ttacks cost them the air superiority ey needed for invasion, the blitz iled to bring England to her knees, nd the island kingdom survived. It ecame the base from which bomb-rs were later launched to carry the ir war to Hitler's Germany."

The central message of the book s clear: Intelligence can be ignored r abused only at great peril to the ation. Kahn's study is not only a extbook based on actual experi-nces, it is a reminder at a time when US intelligence is hopefully ecovering from a series of shocks nd setbacks.

—Reviewed by Bonner Day, Senior Editor.

New Books in Brief

Fighter Aces of the Luftwaffe, by Col. Raymond F. Toliver (Ret.) and Trevor J. Constable. The only ighter pilots to down more than 300 aircraft in aerial combat are among he distinguished German aces of he Luftwaffe described in this vol-ume. The book provides insights nto the lives of the pilots and tac-ical employment of German aircraft during the war. Included are 280 photos, some never before pub-ished, and charts of air feats. Aero Publishers, Inc., 329 W. Aviation Road, Fallbrook, Calif., 1978. $17.95. 32 pages.

Instruments of Darkness: The History of Electronic Warfare, by Alfred Price. Updated edition of the 1967 book that established the author's reputation as a historian. Considered the standard reference on WW II radar battles, this edition also includes a nontechnical guide to electronic warfare from its beginnings through the sophisticated weaponry found in today's arsenals. Index, photos. Charles Scribner's Sons, New York, N. Y., 1978. $12.95. 284 pages.

The Killing Zone: My Life in the Vietnam War, by Frederick Downs. A twenty-three-year-old infantry lieutenant who led soldiers even younger than himself through treacherous Vietnam jungles tells his story. While Vietnam was deadly with leeches, snakes, and insects as threatening as the Viet Cong, it was also challenging. W. W. Norton & Co., New York, N. Y., 1978. $9.95. 240 pages.

The Unknown War, by Harrison E. Salisbury. A Pulitzer Prize-winning war correspondent examines the epic struggle between Germany and Russia that took 30,000,000 lives by the end of WW II. "Nowhere before or since," he says, "did such masses of men and military materiel collide." Hitler's betrayal of the nonaggression pact caught the Soviets off guard when in June 1941 more than 4,000,000 Nazi troops swarmed across the Russian border. This large-format book contains rare black-and-white photos, many taken from previously unreleased film footage shot by Soviet cameramen. A television series was produced, based on the book. Bantam Books, New York, N. Y., 1978. $9.95. 224 pages.

The U.S. Air Service in World War I, edited by Maurer Maurer. The Office of Air Force History is publishing a series documenting air activities in Europe during World War I. This first volume includes several reports published immediately after the war. One is a tactical history; another the Chief of the Air Service's final report. Maps, photos, charts, index. Available from the Superintendent of Documents, Government Printing Office, Washington, D. C. $10.75. 448 pages.

Written in Blood: The Story of the Haitian People, 1492–1971, by Robert Debs Heinl and Nancy Gordon Heinl. A syndicated military analyst who is a retired Marine Corps colonel and his wife, an independent writer and journalist, have written a history of Haiti from Columbus's discovery of the island in 1492 through the early 1970s. Residents from 1959 to 1963, the authors are intimately aware of the paradoxes and misfortunes that mark Haiti's history. Houghton Mifflin, Boston, Mass., 1978. $21.95. 785 pages.

—Reviewed by Robin Whittle

Recent and of Interest

Anchors in the Sky, by George van Deurs, Presidio Press, San Rafael, Calif., 1978, 246 pages, $12.95. The biography of Spuds Ellyson, the first Naval aviator.

Anzio: Edge of Disaster, by William L. Allen, E. P. Dutton, New York, N. Y., 1978, 181 pages with index, $8.95.

The B-29 Book, by Frederick A. Johnsen, Bomber Books, Box 98231, Tacoma, Wash., 1978, 28 pages, $4.25. Photos and story.

Carrier Victory: The Air War in the Pacific, by John M. Lindley, E. P. Dutton, New York, N. Y., 1978, 184 pages with index, $8.95.

Cultures in Collision, The Boxer Rebellion, by William J. Duiker, Presidio Press, San Rafael, Calif., 1978, 226 pages with index, $12.95.

Decision at Sea: The Convoy Escorts, by Peter Kemp, E. P. Dutton, New York, N. Y., 1978, 184 pages with index, $8.95.

Guide to Far Eastern Navies: China, Japan, North Korea, South Korea, Philippines, Taiwan, edited by Barry M. Blechman and Robert P. Berman, US Naval Institute, Annapolis, Md., 1978, 586 pages with index and photos, $32.95.

Federal Aviation Regulations, by Arco Editorial Board, Arco Publishing Co., New York, N. Y., 1978, 220 pages, $5.

The Men Who Bombed the Reich, by Bernard Nalty and Carl Berger, E. P. Dutton, New York, N. Y., 1978, 184 pages with index, $8.95.

Okinawa: The Great Island Battle, by Benis M. Frank, E. P. Dutton, New York, N. Y., 1978, 184 pages with index, $8.95.

The Partnership: A History of the Apollo-Soyuz Test Project, by Edward Clinton Ezell and Linda Neuman Ezell, National Aeronautics and Space Administration, US Government Printing Office, Washington, D. C., 555 pages with index, $8.30. ■

Perspective
Comment & Opinion

By Capt. Peter R. Rach, USAFR, EAGEN, MINN.

Why Not a Professional Pilot Corps?

Possibly the hottest subject among pilots these days is the mass exodus from the military. I feel in a position to comment, because I am part of that exodus. I left the Air Force in September 1977, and was hired by a major airline in April 1978. Thanks to AIR FORCE Magazine, I'm able to keep abreast of this critical issue. I'd like to offer my own opinion on the factors causing pilots to leave.

When I was commissioned (ROTC), I was very career oriented. I had always wanted to fly, and the Air Force seemed the obvious way to go. I began to realize that a conflict existed between my goal and my career shortly after I began flying the C-141 with my first operational squadron at McGuire AFB, N. J.

"Every officer is a potential Chairman of the Joint Chiefs of Staff." This lofty assertion has shaped Air Force policy for years, and in the process driven out thousands of men. I didn't want to be Chairman of the JCS. I only wanted to be a professional pilot. Rank was of secondary importance, and as for authority, all I wanted was the authority of Pilot in Command.

No ambition? Call it that if you like. But then, why would a young doctor turn down an administrative post in a hospital, or even an office in the AMA? These other duties would take away from his practice of medicine—what he was trained for, and what he wants to do.

Today's Air Force pilot knows that to have a successful career he has to make rank, and to make rank he has to get out of the cockpit. The Air Force is structured for this "progression." A new pilot will be assigned an additional duty for seven to ten days a month. Eventually, the additional duty will become a primary duty, with only a small "flying break" each month. The new pilot learns quickly that this additional duty has far greater weight on his OER than how well he flies. The system works well for the young officer who regards pilot's wings as a starting point for a career. Unfortunately, the present structure also will discourage the professional pilot who doesn't want to leave the cockpit. This point, incidentally, is not lost to the airlines. Their pilot structure is suited to this individual perfectly.

Air Force efforts to reverse the pilot exodus are doomed to failure until they realize this critical point. Increasing flight pay is not the answer. Nor is spreading "scare talk" of airline furloughs. Increasing the commitment from five to six years after graduation from UPT will serve only to raise the average age of the airline "new hires" by exactly one year.

Some Air Force people blame the problem on the airline hiring in progress now. I disagree. The problem is just more visible now. Pilots who wanted to leave several years ago decided to wait until the airline picture looked better, but the decision to get out was made several years ago. Pilots are not leaving as much for what is right on the outside as for what is wrong on the inside. Even now, three of every four separating pilots don't have jobs waiting for them.

I believe the crux of the problem lies in a conflict between those who want to be professional pilots and an organizational policy of "officer fi —pilot second." The Air Force w be well on the way toward a soluti when they realize that being a pi is not just a good start for a caree It can be a very rewarding career itself. Wasn't that at least part of t rationale behind the most specia ized, elite unit of the Army—t AAF—becoming a separate servi in 1947?

Is it possible, then, to have a "pr fessional pilot corps" within the A Force? Why not? Pilots are only small minority of all Air Force of cers. In fact, we already have such structure for chaplains and medic officers. Doctors are rated or against other doctors, not again maintenance officers.

With a system such as this, if pilot sees greater career potenti or job satisfaction for himself as commander or staff officer—grea He would then compete on equ footing with his peers in the suppo fields, but not in the profession pilot corps. There is no logic in ha ing a pilot compete for rank (ar hence career security) with, for e ample, a missile launch officer. The are not interchangeable.

One side effect of a professiona pilot corps might be that those wh leave it would go off flying statu This would mean more flying tim for corps pilots, resulting in eve higher levels of pilot proficiency The extra flying time would also b justification for an end to all but th most essential additional duties.

I have mentioned some of th prominent factors in my decision t leave the Air Force for an airlin career. The suggestions I offe might have changed my attitude about leaving, but I don't claim t know what other pilots are thinking After all, I'm not a psychologist. I'm a professional pilot!

Captain Rach was commissioned in 197 and served on active duty until 1977 flying C-141s from McGuire AFB, N. J Now flying for Braniff International ou of Minneapolis, he is also a pilot in th 702d Reserve Squadron.

HOW TO SHARE YOUR PERSPECTIVE

The purpose of this department is to encourage the presentation of novel ideas and constructive criticism pertinent to any phase of Air Force activity or to national security in general. Submissions should not exceed 1,000 words. AIR FORCE Magazine reserves the right to do minor editing for clarity, and will pay an honorarium to the author of each contribution accepted for publication.

AFROTC's NEW LOOK

A smaller corps, a modified curriculum, and tougher entry standards are a few of the changes responsible for . . .

BY CAPT. CHARLES G. TUCKER, USAF, CONTRIBUTING EDITOR

AIR Force Reserve Officers Training Corps (AFROTC) has a new look, the result of a series of dramatic changes during the organization's most turbulent decade.

Cadet enrollment has declined. Today's campus environment, unlike that of the Vietnam years, has become congenial once again. There have been increased efforts to fill the cadet corps ranks with a significant representation of minorities, and with students majoring in academic disciplines that are badly needed by the Air Force.

The New Look

The USAF officer corps has been reduced by about one-third since 1968, the height of the Vietnam War. As a result, fewer AFROTC graduates are needed—2,830 this year compared to 5,708 in 1968.

During the past ten years, AFROTC has had both highs and lows. In the late '60s and early '70s, students demonstrated against the Corps on campus, and several prestigious schools dropped the program altogether. The curriculum was reviewed at other schools and changed where the Air Force and college administrations were able to compromise.

Today, the demonstrations have all but disappeared. Some schools have invited units back, and AFROTC has once again become a routine part of campus life.

During the transition period, however, there have been some notable changes. The military draft ended in 1973, eliminating an important silent incentive for students to enroll in AFROTC. Air Force officials say that even at the height of the anti-ROTC demonstrations, they had no difficulty enrolling an adequate number of officer candidates; enough students preferred Air Force commissions to being drafted. Now, Air Force ROTC is chosen on its own merits, and Corps advisors say a more comprehensive selling job is necessary.

Also, AFROTC no longer is compulsory on most campuses. Only three schools—Virginia Military Institute, The Citadel (S. C.), and Norwich University (Vt.)—retain mandatory programs.

These major changes have caused the cadet corps to shrink every year since the mid-60s. Last year's enrollment was 17,034, about sixty percent of what it was in 1970.

The number of campus detachments is declining also. In the past five years, a total of forty-five detachments have been closed while only twelve new ones have been opened. Most closures were for failure to meet the Defense Department's enrollment standards—a minimum of seventeen juniors in the four-year program, or twelve in the two-year program. The service's annual review also assesses each detachment's ability to meet those standards, and examines the number of minority and technical and scientific cadets. Other factors in the assessment include adequacy of support by the host school, proximity to other AFROTC units, and potential for increasing enrollment. Detachments below enrollment standards are placed on probation. Those failing to attain minimum standards after four years usually are disestablished.

After the autumn 1978 review, seven detachments were taken off probation, thirty-five were either added or continued on probation, and three were ordered closed by the end of next summer. This will bring the number of detachments down to 141, lowest in twenty-five years.

Three years ago, Air Force introduced the Cross Enrollment Program, where one school hosts a detachment that serves students from other schools in the local area. Last year, sixty-nine Cross Enrollment detachments trained cadets from a total of 384 schools.

Shifts in Curriculum

The major curriculum change is the Advanced Training Program, an adaptation of the Air Force Academy's "Operation Third Lieutenant." Since 1976, a limited number of cadet volunteers have been assigned to Air Force bases for two or three weeks of temporary duty to get an advanced look at Air Force life by working alongside host officers. Cadets planning flying careers attend a special three-week flight orientation program at Tactical Air Command bases. Fifty cadets participated in the Advanced Training Program in 1976. This year, more than 1,200 participated at sixty-nine bases in the US.

Other changes in AFROTC courses have been less dramatic. Since 1964, the curriculum has been structured to give students a choice of enrolling in the four-year program when they enter college, or applying for the two-year program any time they have at least two academic years remaining.

The last two years of both programs are identical and are called the Professional Officer Course. All courses are normally taken for academic credit as part of a student's electives; however, the amount of credit granted varies among schools.

Drill and ceremonies are still a fundamental part of training, but time devoted to instruction and practice has been curtailed to make room for additional courses in leadership and military-related subjects.

Other recent changes in course content or teaching objectives involve subjects that are being emphasized throughout the Air Force. For the current school year, these include expanded instruction in human rights, the military as a profession, and drug and alcohol abuse.

Since last year, students who want to enter the Professional Officer Course must compete under a national screening system. Those selected enlist in the Air Force Reserve and receive a $100 tax-free monthly allowance during the school year. They also must complete a four- or six-week summer training camp prior to beginning the last two years.

Today's campus environment has become congenial once again.

Refining the Cadet Mix

Another major change in AFROTC has been tougher entry standards. Cadet classes must reflect society's mix of races and ethnic groups. Presently, USAF's goal is to have fifty percent of all pilot, navigator, and missile category cadets enrolled in academic programs leading to an engineering or scientific degree. To help meet these stringent degree requests, the College Scholarship Program has been expanded. Scholarships provide full tuition, laboratory and incidental fees, and reimbursement for textbooks. Advanced students also receive the monthly tax-free allowance. More than 5,000 scholarships were awarded in 1977, and eighty percent went to students studying in the scientific and technical disciplines. This year, more than 12,000 students competed for 1,250 four-year scholarships. Presently, about one-third of the cadet corps is receiving Air Force scholarship assistance. In addition to Air Force scholarships, many private businesses such as banks are providing AFROTC scholarships, as do several Air Force Association chapters. Some states, including Illinois, waive tuition for students enrolled in ROTC at state schools.

Special recruiting programs are b
ing used to enroll blacks, wom
and Air Force enlisted personn
The Quality Enhancement Progra
(QEP) identifies outstanding bla
high school students and nominat
them for four-year scholarships. La
year, 200 black cadets were recruit
through QEP.

The number of black male cade
has increased about twenty perce
since 1971, while black female cad
enrollment has increased nearly fou
fold. During the same period, mino
ities have jumped from three t
eighteen percent of AFROTC grad
uates.

The number of women enrolle
and commissioned has consistentl
increased since 1969, when the A
Force again opened ROTC to wome
following a test program in the 1950
Women are attracted to the cad
corps because Air Force policy ba
institutional discrimination and se
equal pay for equal work. Recer
test programs opening flying and mi
sile jobs to women have highlighte
USAF's efforts to assign jobs wit
regard to ability alone. Recruitmer
of women into AFROTC has bee
rewarding: Women scientific/techn
cal students entering the Profession
Officer Course this year exceeded th
Air Force goal by a wide margi
About twenty percent of the 3,37
women enrolled in AFROTC th
year received scholarships. Cor
officials say the smaller share
scholarships to women than men
because most women enroll i

The number of officers commissioned by OTS, AFROTC, and the USAF Academy for the past ten years is shown in the following table:

YEAR	OTS	AFROTC	USAF ACADEMY*
FY '77	694	2,546	851
FY '7T	194	155	0
FY '76	723	2,554	908
FY '75	1,678	3,615	741
FY '74	2,331	3,489	799
FY '73	3,203	3,893	834
FY '72	3,924	4,165	742
FY '71	4,224	4,415	678
FY '70	5,472	4,524	734
FY '69	4,850	4,936	671
FY '68	6,658	5,708	606

*Graduated and commissioned; excludes allied students, graduates commissioned in other services, and those graduated posthumously.

'assroom seminars, directed by active-duty Air Force officers, continue be the primary method of academic instruction in AFROTC.

FROTC for the equal opportunity lvantages, and financial assistance ay not be as important an incenve as it is with men.

About fourteen percent of the non-ted/nonmissile line officers to be ommissioned through AFROTC is school year will be women. The 980 production goal for women raduates includes ten to enter pilot aining, five for navigator training, nd five to become missile officers. his is the first time that female cadets will be selected for operational areer fields before they are commissioned.

Commissions for enlisted members re being made available through the irman Scholarship and Commissioning Program (ASCP). Airmen selected for ASCP are released from active uty to study full time toward an ndergraduate degree while training or a commission through AFROTC. Ninety-five ASCP cadets were commissioned last year, a fourfold increase since the program began in 975. The program is especially attractive to Air Force planners because large majority of ASCP graduates vant to remain on active duty as areer officers. Also, participants are ighly qualified. Of the eighty-six nlisted members selected for ASCP ast year, those with previous college xperience had a cumulative grade oint average of 3.2 on a 4.0 scale.

AFROTC's Future

AFROTC is, and will continue to e, a major source of officers for the Air Force. About forty-three percent of active-duty Air Force officers are graduates of the program. This is a two percent increase from last year, though the total USAF officer strength dropped three and one half percent during the same period. Seventy-six of the 360 Air Force active-duty general officers are ROTC graduates as are almost half of the colonels selected last year for promotion to brigadier general.

Cadet strength, cut back during the post-Vietnam drawdown, has stabilized, and is not expected to change significantly in the next few years. Freshman enrollment last year was up 8.4 percent for the first increase in fourteen years, an indicator that the decline in enrollment has bottomed out. AFROTC's production goals will remain around 3,000 annually into the early 1980s. But high enrollment standards together with competition from business and industry make it increasingly difficult to meet production goals, especially for the scientific and engineering specialties. AFROTC supervisors say the key to meeting these goals is recruiting more minorities, more women, and expanding the opportunities for career-minded enlisted members to be commissioned through ASCP.

The scholarship program will play an increasingly important role in attracting students. Congress funded an additional 740 scholarships last year.

AFROTC has changed dramatically since the Vietnam War, and Corps officials are optimistic that the "new look" will turn more of the best college students in the direction of an Air Force career. Even more important, Air Force leaders say the changes are producing better officers. ■

Talent Scouts for AFROTC

A key element in locating the right kind of student for Air Force ROTC is the group of dedicated Reserve officers known as AFROTC Liaison Officers. Working from their offices and homes, the LOs counsel prospective AFROTC cadets in their home communities. They earn Reserve training points for their work, but serve without pay.

There are 717 LOs, located in most states and several locations overseas. Lt. Col. Larry Lyon, Chief of the Recruiting Division at AFROTC Headquarters, is in charge of the far-flung admissions liaison network. He supervises the program through thirty-nine Admissions Counselors assigned to AFROTC detachments throughout the country.

LOs meet with young people through high school counselors, college and career fairs, and youth groups, including Scouts, the Civil Air Patrol, and YMCA/YWCA. They also speak before service clubs, appear on local television and radio shows, and provide newspapers with AFROTC information.

What motivates the Liaison Officer to contribute so much of his time and effort to this program? Second Lt. Peg Moffett, a recent AFROTC graduate and a member of Colonel Lyon's staff, says most LOs feel it is personally rewarding to work with young people and contribute to their careers. Many LOs remain active in the program even after they retire from the Reserve.

The LO program is approaching its tenth anniversary. Since its inception, it has been an indispensable aid to AFROTC. Corps officials say the future of the program is assured by its past achievements.

More LOs are needed to meet AFROTC enrollment goals. Reservists who are interested in serving may write: AFROTC/SBRR, Maxwell AFB, Ala. 36112.

Following World War I combat duty as a bomber pilot, he played a major role in developing the concept of strategic air warfare at the Air Corps Tactical School, defending that concept during World War II, and establishing the professional military education system of the United States Air Force.

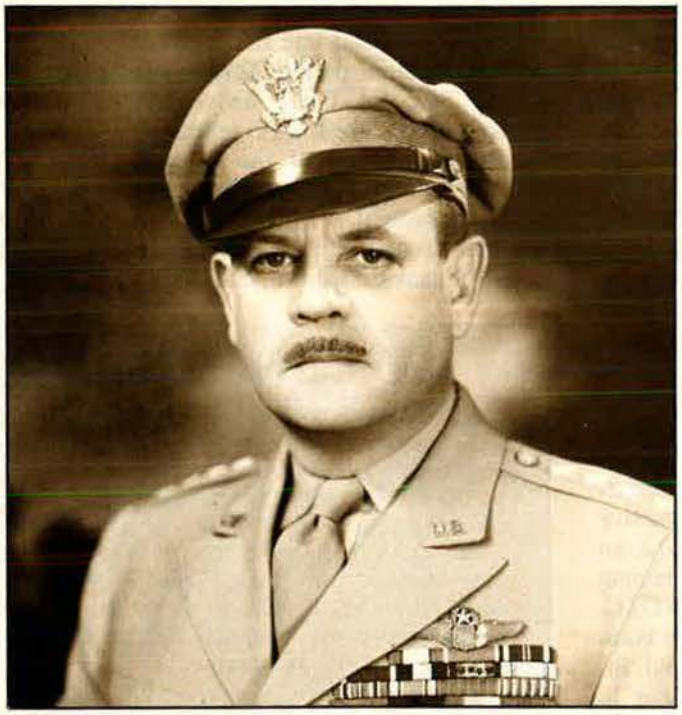
Gen. Muir S. Fairchild: Strategist, Statesman, Educator

BY MAJ. GEN. HAYWOOD S. HANSELL, JR., USAF (RET.)

FAIRCHILD Hall, the intellectual heart of the Air Force Academy, provides classrooms, lecture halls, and laboratories for the nearly 4,500 Academy cadets. It was named in honor of the man who contributed as much to the evolution of air doctrine, and the teaching of it, as any man in the history of US military aviation—Gen. Muir S. "Santy" Fairchild.

During his military career of more than three decades, Santy Fairchild served as a bomber pilot in World War I, an engineering test pilot and aeronautical engineer, an industrial analyst, a strategist and military philosopher, and an educator. He was a man of exceptional intellect and high character.

While at McCook Field near Dayton, Ohio, in the early 1920s, Fairchild was engineering test pilot for the experimental Barling bomber —the massive six-engine triplane that was the biggest bomber of its time. *(See "The Short, Unhappy Life of the Barling Bomber," February '78 issue.)* It was at McCook that he gained the nickname "Santy." One day he landed from a high-altitude test flight (not in the lumbering Barling), wearing winter flying gear with fur boots and helmet. Someone called out, "Here comes Santa Claus," and from that time on, he was Santy Fairchild.



Gen. Muir S. Fairchild, USAF Vice Chief of Staff, 1948–50.

Fairchild was one of ten pilots selected for the historic 1926–27 Pan American Goodwill Flight (*see September '76 issue*). At the completion of the flight, President Coolidge awarded the first Distinguished Flying Crosses to the pilots.

In 1934–35, Fairchild attended the Air Corps Tactical School at Maxwell Field, Ala., where he drank in the heady doctrines of airpower propounded by then-Lt. Col. Harold Lee George. The essence of air strategy, as Douhet had contended, lay in the proper selection of key targets on which industrial nations are dependent for prosecutio
a war and for the functi
ing of society. What be
preparation for an air st
egist than analysis of e
nomic and industrial str
tures? Santy's appointm
as a student at the Ar
Industrial College on cc
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Tactical School was sin
larly appropriate. Followi
the Industrial College,
entered and graduated fr
the Army War College.

On completion of the W
College, Santy returned
Maxwell in 1937 to succe
Bob Webster as Chief
the Air Force Section, und
another pioneer and lead
of strategic thought, Lt. C
Don Wilson. He succeed
Wilson as Director of t
Department of Air Tacti
and Strategy in 1939.

Santy's contribution
strategic thought at Ma
well was largely philosop
cal. He advanced the
concepts of Harold Geor
and Don Wilson and wo
them into the fabric of
tional strategy. He sought
block out the nation's nee
for military forces and
describe the relationship
well as the optimum e
ployment of armies a
navies and air forces.

Santy was a warm, gen
person with a fine sense

ıor and a fund of stories anecdotes. His conver- on was lively and salted ı references from Lewis roll, Mark Twain, and kespeare. But when he ; dealing with serious tters, his thoughts were rshaled in logical se- nce, and his manner h temperate and per- sive.

With the approach of rld War II, Santy was ved to the Office, Chief Air Corps, in 1940, where served as Assistant ecutive in the Plans Di- on. In August 1941, he ame Assistant Chief of Army Air Forces (the Corps became the AAF June 20, 1941) with the k of brigadier general. March 1942, he was med Director of Military quirements, during the iod when the AAF s undergoing its massive wth. Then, after the ation of the staff ma- inery of the Joint Chiefs Staff, General Fair- ild took up a position at has been little her- ded but was of immense portanee in the conduct the war. He became Air mber of the top consulta- e body of the Joint Chiefs Staff: The Joint Strate- Survey Committee. The my member was Lt. Gen. anley Embick; the Navy mber Vice Adm. Russell ilson.

The Joint Strategic Sur- y Committee (JSSC) was tablished by the Joint iefs of Staff on Novem- r 16, 1942. It replaced the int Strategic Committee, ich had been one of the ur principal committees at comprised the Joint aff. The others were the int Plans, Intelligence, and gistics Committees. The int Strategic Committee as permitted to lapse after had produced the grand ategy that was adopted by e Joint Chiefs of Staff. Now the Joint Chiefs felt the need for a high-level group that would appraise grand strategy as the war progressed and offer recommendations for change. Obviously its members should be of superior quality and should report at the highest level. They would be passing judgment on the performance and effectiveness of the top commanders in the field and appraising the judgment of the Joint Chiefs themselves.

The duties of the Joint Strategic Survey Committee were:

"To study and survey the major basic strategies of the war, (past, present, and future). To keep the Joint Chiefs of Staff advised on combined basic strategy in the light of the developing and predictable situations. To advise the Joint Chiefs of Staff on long-range strategy (combined). To study the strategies possible to be adopted when current plans have become impractical and to advise the Joint Chiefs of Staff thereto."

The JSSC was thus a small, very select group of senior military statesmen. They worked as a trio, without staff. And they operated at a level above that of the other Joint Staff organizations.

Fairchild, a major general in the Army Air Forces, functioned as an equal and was fully accepted by his two associates, who were far senior to him. General Embick was a past Chief of the War Department's War Plans Division and a former Vice Chief of Staff of the Army. He was much senior to Gen. George Marshall on the Regular Army promotion list. Admiral Wilson was high on the Regular Navy list of flag officers. Santy's signal contributions were a reflection of his remarkable intellect and sound common sense, and they were also, of course, a testimonial to the open-mindedness of his associates.

The JSSC came to serve another vital purpose. The Joint Chiefs developed a practice of passing the "much too difficult" problems to the Committee—problems that by their nature required serious analysis, unselfish dedication, and sound common sense. The Committee responded with admirable results. The fact that its recommendations and findings were consistently fair, sound, and wise is testimony to its rise above service bias and prejudice and, considering General Embick's previous record of anti-airpower bias when he was Chief of the War Plans Division, it is also evidence of Santy Fairchild's wisdom and persuasiveness.

It was during the first part of Fairchild's duty with the Committee that he recognized and overcame a potentially lethal challenge to strategic air warfare. The Joint Intelligence Committee was preparing to undermine strategic air operations by denigrating the validity of strategic air intelligence concerning Germany, on which the strategic air war plans, AWPD-1 and AWPD-42, were based.

The Joint Intelligence Committee, initially without an AAF member, was made up of officers from the Office of Naval Intelligence and from Army G-2, with some civilian representatives from the Office of Economic Warfare. None was imbued with the doctrines of strategic air warfare; none believed in the military significance of enemy industrial intelligence. The strategic industrial intelligence on which the air war plans were based had been produced by the Air Staff, which had acted on its own initiative.

If the Joint Intelligence Committee challenged the strategic air intelligence, it would find ready adherents in most of the Army and Navy membership of the Joint Chiefs of Staff machinery, and very little leverage with which to contend them. The strategic air offensive was on very shaky ground.

The Joint Chiefs of Staff were giving serious consideration to Adm. Ernest King's proposal that the air war against Germany be dropped in priority below the air requirements of the Pacific, and that fifteen groups of heavy bombers be removed from the buildup for the Eighth Air Force in the UK and transferred to the Pacific.

In addition, the Eighth Air Force in England was being stripped of half its heavy bombers, which were transferred to the Mediterranean for support of the surface campaigns there. Unless some means could be found to counter the Joint Intelligence Committee and convince the Joint Chiefs that the air war plans were sound, it was likely that the entire scheme of strategic air warfare would simply die out.

After some discussion with Col. Byron Gates and Col. Guido Perera, both of the Air Staff, under whom the various Offices of Operations Analysis were being assembled, Fairchild proposed to Gen. H. H. Arnold the assembly of a committee of top-level civilian industrialists, who could speak with authority on the effect of industrial damage or paralysis. General Arnold immediately approved the proposal and the prestigious Committee of Operations Analysts was assembled.

It was a master stroke. It promised either endorsement of the strategic indus-

Maj. Gen. Haywood S. Hansell, Jr., spent the early years of his career in bomber units and at the Air Corps Tactical School. While assigned to the Air War Plans Division of the AAF, he helped develop AWPD-1, the plan for employment of strategic airpower in World War II. During that war, General Hansell commanded an Eighth Air Force bomb wing and a bombardment division, and subsequently the XXI Bomber Command in the Pacific. He retired shortly after the war, but was recalled to active duty in 1951 to be the senior Air Force member of WSEG's Studies and Analysis Division. General Hansell, who now lives in Hilton Head, S. C., has written and lectured widely on military strategy and defense policy.

trial and economic systems and targets already under attack, or recommendation for the removal of some targets and their replacement with more effective ones. And it offered a defense against those who would eliminate strategic air warfare altogether, simply from bias or ignorance.

It was a drastic remedy because the prominent industrialists had no notion of strategic air doctrine. Fairchild set out to remedy this weakness. He gave the new committee a highly condensed course in strategic air warfare, calling upon his years of experience at Maxwell. All things considered, the committee did astonishingly well. And, most important, the strategic air war, which proved decisive, was saved.

Santy Fairchild also instigated action that led to the most significant compilation of data yet produced on the effects and effectiveness of strategic bombardment. In early 1944, in discussions with members of General Arnold's Advisory Council, he pointed out the need to appraise the effects of air bombardment against Germany at the earliest possible time after capitulation of the Third Reich, while effects were still fresh in the minds of German industrialists and before records could be destroyed or repairs effected.

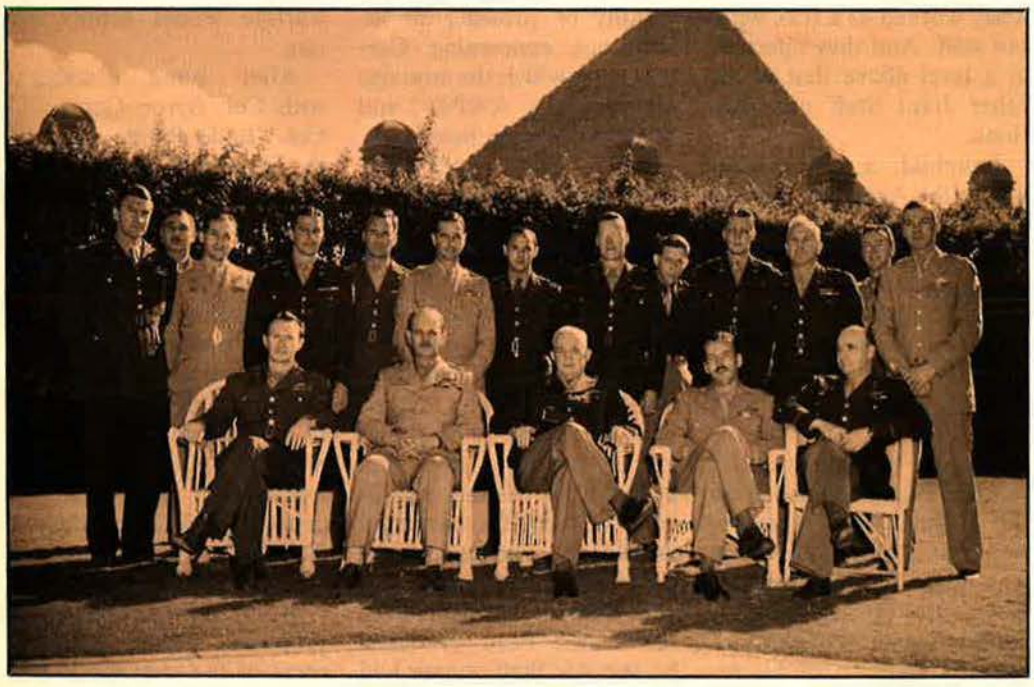
The idea spread to Gen. Carl "Tooey" Spaatz's headquarters in London and was simultaneously advanced through Brig. Gen. Thomas D. White, Assistant Chief of Staff, Intelligence, in the Air Staff. General Arnold was enthusiastic. Both approaches on Fairchild's recommendation, that of General Spaatz and that of General Arnold, called for a civilian chairman of the investigating group, and an essentially civilian leadership with a minimum of military personnel. The US Strategic Bombing Survey, subsequently established by President Roosevelt, was headed by Franklin D'Olier, President of Prudential Insurance Co.

This emphasis on civilian leadership represented a statesmanlike attitude, but it also was a tremendous gamble on the part of the airmen. The appraisal of the entire bombing effort was to be put in the hands of civilians who knew little about strategic air theory. The future of the Air Force would hang on their conclusions. The whole project speaks volumes for Hap Arnold, Tooey Spaatz, and for Fairchild, and for their confidence in the effects of strategic air bombardment and in the dispassionate judgment of the American civilian industrialist. It was a gamble that paid off handsomely in the magnificent "Summary Report of the US Strategic Bombing Survey."

Toward the end of the war Santy Fairchild was immersed in the meetings at Dumbarton Oaks as an advisor on the organization of the U ed Nations.

Finally, with the indep dent United States Air Fo just over the horizon, Ge al Spaatz and his deputy, Gen. Ira Eaker, called Santy Fairchild to create institution they hoped wo enlighten the mind and fo the spirit of the new Force: The Air Univers Santy Fairchild returned the scene of his great pre contributions: Maxwell Force Base. He became Air University's Comm dant and mentor until he called back to Washingto 1948 to become Air Fo Vice Chief of Staff with rank of general, under on his most devoted and s cessful disciples, Gen. H Vandenberg, Chief of S of the Air Force they l done so much to create.

While serving as Vice Ch of Staff, General Fairch was stricken with a fa heart attack in May 19 That same year, Spoka AFB in his native state Washington was renam Fairchild AFB as a memor to one of this country's fo most strategists—an airma philosopher, teacher, a leader.



General Fairchild, then a mer ber of the Joint Strategic Surve Committee, accompanied Ge eral Hap Arnold and his Air Staff to the Cairo Conference of December 1943. Shown seated, from left, are Brig. Ge Haywood S. Hansell, Jr. (the author of this article); Maj. Ge Muir S. Fairchild; Gen. H. H. Arnold; Maj. Gen. Laurence S Kuter; and Col. W. R. Wolfin barger. Among those standin are Brig. Gen. Joseph Smith (second from left) and Brig. Gen. (Rosy) O'Donnell (third from left).

Industrial Associates of the Air Force Association

"Partners in Aerospace Power"

Listed below are the Industrial Associates of the Air Force Association. Through this affiliation, these companies support the objectives of AFA as they relate to the responsible use of aerospace technology for the betterment of society, and the maintenance of adequate aerospace power as a requisite of national security and international amity.

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General Dynamics, Fort Worth Div.
General Electric Co.
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Goodyear Aerospace Corp.
Gould Inc., Government Systems Group
Grumman Corp.
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Howell Instruments, Inc.
Hudson Tool & Die Co., Inc.
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Hughes Helicopters
Hydraulic Research Textron
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Martin Marietta, Orlando Div.
McDonnell Douglas Corp.
Menasco Manufacturing Co.
MITRE Corp.
Moog, Inc.
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Northrop Corp.
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O. Miller Associates
Pan American World Airways, Inc.
PRC Information Sciences Co.
Products Research & Chemical Corp.
Rand Corp.
Raytheon Co.
RCA, Government Systems Div.
Redifon Flight Simulation Ltd.
Rockwell International
Rockwell Int'l, Electronics Operations
Rockwell Int'l, North American Aerospace Operations
Rohr Industries, Inc.
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The Bulletin Board

By James A. McDonnell, Jr., MILITARY RELATIONS EDITOR

High Pilot Exodus Continues

Air Force pilot losses continued to rise during the last quarter of FY '78, reaching a departure rate of 60.4 percent on September 30. That compares with a loss rate of 56.2 just three months earlier. It was 48.1 percent the middle of 1976.

The 60.4 percent figure means that for every 100 pilots entering the sixth year of service, sixty will separate by the end of the eleventh year. This is based on the actual FY '78 losses, which totaled 2,269, or 365 more pilots than projected before the year started. Hq. USAF authorities, who are working on many fronts to curb the losses, told AIR FORCE Magazine that they are reasonably optimistic that the retention picture will soon improve.

Losses in the six- to eleven-year group are heaviest among strategic airlift pilots, followed by mission support, tactical airlift, and tanker types. All are above the Air Force-wide average.

Bomber, tactical fighter, and helicopter pilots posted the best FY '78 stay-in records, showing loss rates of around forty percent.

At a late November pilot retention conference at the Manpower and Personnel Center, Hq. USAF and command officials polished a many-pronged game plan that features improving assignment practices (since unhappy pilots cite that as a major irritant). Center officials also are working up lists of available assignments for pilots (and eventually for other officers) so they will know well in advance what their next job might be. Additional assignment stability is promised.

Commands, officials stated, report they are trimming annoyir practices and additional dutie young pilots have complaine about. Authorities also cite the r cent elimination of controlled OER a cut in rated officer service con mitments, and the top USAF leade ship "going public" in supportin military benefits, as key step management is taking to blur gripes that trigger exits.

The service commitment chang decreases the time a pilot mus stay on active duty after completin any of sixty advanced flying trainin courses. For example, the con mitment for B-52 aircraft con mander upgrade training has bee sliced from four to two years. O ficials said many pilots were de clining advanced training an leaving service rather than accep long commitments. Hopefully, the will now take the reduced con mitment and eventually will em brace career status.

Some officials are buoyed b Chief of Staff Gen. Lew Allen, Jr.' recent strong public declarations o support for adequate pay, retire ment, and benefits (*see separat report below*). He is responding, i effect, to what numerous departin pilots have called the "lack of de monstrable senior leadership sup port of benefits and retirement." Many quarters hope other high USAF leaders will join their Chie in "speaking out."

Air staff discussions about in creasing flight pay or launching pilot bonuses, as other ways of im proving retention, have not gotten very far, officials acknowledge. Several feel a good case for more flight pay might be made. "The maximum monthly flight pay today is the same $245 it was in 1955," one noted. In a related development, AFA has called on Congress to in crease flying hours, heavily chopped in the past as an economy measure, in a move aimed at enhancing crew member job satisfaction.

While USAF pilot losses are heavy, the inventory still exceeds needs. But that will change next year when pilot requirements are scheduled to increase from 23,171 to 26,609. At the same time, the service will be coming off its lowest-ever annual Undergraduate Pilot Training output—a mere 1,050. The accompanying chart shows the pilot requirements (LCs and below), estimated inventory, overages and shortages by year, and the UPT

—USAF Photo by 2d Lt. Daniel T. Woolley

An AFA Presidential Citation was recently presented to Mrs. Joan Osako, USAF Office of Information, Los Angeles, Calif., for her twenty-three-plus years of outstanding service with that agency, including dedicated liaison with news media during AFA's past West Coast symposia. Here, AFA President Gerald V. Hasler does the honors while Chief of Staff Gen. Lew Allen, Jr., looks on.

tes, all based on the FY '80 preninary budget. Officials said they ope to win some additional UPT aces.

	FY '79	FY '80	FY '81	FY '82	FY '83	FY '84
Requirements	23,171	26,609	26,543	26,446	26,322	26,354
Inventory	23,898	23,103	22,924	22,827	22,792	23,124
Balance	+727	−3,506	−3,619	−3,619	−3,530	−3,230
UPT Rates	1,050	1,575	1,850	1,850	1,900	2,000

mbrellas at the Pentagon

Using umbrellas while in uniform as been strictly taboo for US sercemen. Doesn't matter if they get enched—it's just not military, all the services decided years ago. Critics contend that raincoats won't do the job, but officialdom has remained adament.

However, there's a leak in the dike: The Air Force is conducting a "test" of the forbidden practice at the Pentagon. Male blue-suiters stationed there can use nonplastic black or dark blue umbrellas through April 30, probably indefinitely because full-scale approval Air Force-wide seems likely. Army and Navy show no signs of discarding the long-time ban which many uniformed members consider absurd. Women of all the services in uniform have used umbrellas right along.

The Air Force Uniform Board, which recently okayed the male umbrella tryout, said it would also consider letting Air Force women use their sister services' purses. The board, however, rejected proposals to let them wear pile-lined hoods and Army-style turtleneck sweaters. And in what has to be a blow

AFA Believes . . .

Doctor Shortage Worsens in the Volunteer Military

AFA's 1978–79 Policy Paper on Defense Manpower Issues voices our strong support for bolstering military health care. In a November issue of the Washington Post, staff writers Ted Gup and George C. Wilson addressed one element of this emotional issue. Extracts from their hard-hitting story follow:

The military health care program for 9.2 million people is gravely ill and may never get well.

Military doctors say they are so understaffed and overworked that the care provided many patients amounts to medical malpractice.

Pentagon officials, acknowledging the problem, say there simply aren't enough military doctors to go around and no sure way to recruit more in this era of the volunteer army. . . .

The military spent $3.3 billion on health care in fiscal 1978, but interviews with doctors, active and retired service persons and their dependents indicate dissatisfaction—even over the quality of that care.

Doctors say they cannot keep up with demand and some quit the military at the first opportunity, making an already bad situation worse.

"We're being forced into malpractice," complained one Army radiologist.

A cardiologist who runs not only the heart center at an Army hospital but the intensive care and coronary care units there as well complained that he sees so many patients in one day that at night, "I lie in bed and worry about whether I could possibly have been right about all those cases."

Military leaders are resorting to desperate measures to try to fill the gaps in the medical ranks. Doctors say this often results in dangerous matchups of skills and requirements.

At the same time, the military is spending millions of dollars to hire civilian doctors to work at military hospitals. . . .

Dependents of active-duty military people frequently must travel for miles and wait for hours for military medical treatment. The problem is especially acute at bases located far from major cities.

Even in the Washington area, military dependents complained that medical care is one frustrating experience after another. Said the wife of a Navy enlisted man living in the Maryland suburbs: "At three different Navy bases in Virginia, Florida and Maryland over the last five years I found I had to wait from one to three hours to see a doctor for 15 minutes, if I got to see him at all instead of a corpsman or a paramedic. . . ."

"I deny the existence of a crisis but concede we've got a serious problem," Vernon McKenzie, acting assistant secretary of defense for health affairs, said in an interview.

Two members of the House Armed Services Committee, Reps. Samuel S. Stratton (D-N. Y.) and Robin Beard (R-Tenn.), have been assailing McKenzie and other Pentagon officials for not taking the medical problem more seriously. . . .

McKenzie said that Pentagon planners foresaw there would be a shortage of military doctors once the draft ended and vainly tried to persuade Congress to enact generous scholarship programs for students willing to trade free medical education for military duty. He said the Pentagon hopes to improve the scholarship programs belatedly approved by Congress. He said the Pentagon next year will press Congress to make military medical scholarships as generous as those offered by the Department of Health, Education and Welfare.

"I'm reasonably optimistic" that scholarships will attract enough military doctors to ease the present shortages by the early 1980s, McKenzie said. . . .

Under the most optimistic Pentagon projections, the military services would not have all the physicians they need until 1984. This projection assumes Congress will approve the requested incentives.

Without the incentives, the Pentagon estimates, the doctor shortage will continue indefinitely. The services, under this projection, would have only about 80 percent of the doctors they think they need. . . .

One idea being pondered by the White House Office of Management and Budget is subcontracting more of the military's health care to the civilian medical community. Some students of the problem see this as the only long-term solution.

But military traditions, such as taking care of one's own, die hard.

The Bulletin Board

to some fashion-conscious USAF women, the Board rejected what it called "an incremental phase-in of uniform style changes to align more closely with civilian style and fashion changes."

Recruiters Do Well, Face Tough '79

USAF recruiters got high marks from their command boss, ATC's Gen. John W. Roberts, for meeting most of their FY '78 quotas and making a strong showing in signing up physicians and dentists. He promised that FY '79 would be another tough year.

The final FY '78 results showed 68,025 new recruits (55,409 men and 12,616 women), 1,725 OTS candidates (including 526 in engineering and technical skills), 557 new nurses, and 351 medical students signing scholarship contracts (future military physicians). Each area is at least 100 percent of quota.

Only 270 of the 430 physicians and 165 of the 206 dentists sought were obtained. However, the physician-dentist market is extremely tough to crack, and no one expected that these quotas would be met.

General Roberts told the Recruiting Service, headquartered at Randolph AFB, Tex., that meeting the recruit quota "is significant . . . but the fact that you brought in the skills we need, and the quality we need, is nothing short of amazing!"

Hq. USAF officials, meantime, note with concern that the percentage of new USAF recruits with high school diplomas fell to eighty-five percent. That's still better than the other services but well below USAF's ninety-plus percent mark of a few years ago. High school graduates have a history of performing better than nongrads.

For FY '79, Air Force is again looking for 68,000 airmen recruits, including 54,700 men and 13,300 women; 519 physicians; 222 dentists; 518 nurses; and 473 medical scholarship students. The OTS quota has more than doubled, to 3,656; the latter figure includes spaces for 1,389 engineering-technical officer candidates (because USAF's needs in these skills are increasing rapidly) as well as 34 navigator candidates and 294 pilo candidates.

Allen Plugs Benefits

Numerous service members have scored their services' top leaders for not protesting attacks on military benefits or speaking out loudly enough for reasonable incentive programs. Some ex-service people say this "lack of support" of compensation and entitlement issues drove them out.

Whether the leadership deserves such scoldings is questionable, fo the chiefs of any federal agency op erate under considerable restraint If the military's "chief," the Presi dent, lays on a 5.5 percent military pay cap, military leaders can hardly denounce it publicly as inadequate as some uniformed critics appar ently demand.

At any rate, Air Force's Chief o Staff, Gen. Lew Allen, Jr., is definitely speaking out—in public—starting with his appearance at the AFA National Convention (*see November '78 "Bulletin Board"*). Later he told a San Antonio audience that Air Force compensation "has been eroded by inflation despite cost-of-living adjustments" anc

Ed Gates . . . Speaking of People

More VA Benefits Ahead

Veterans last year fared well as far as benefits are concerned. Uncle Sam did considerably more for them than for most of the country's large special-interest groups. Supporters on Capitol Hill acknowledged this by declaring 1978 "a great year" for veterans generally. Some legislators acclaimed it the best year since 1944, when the World War II GI Bill emerged.

Veterans' organizations, usually reluctant to credit the government with improving their members' benefits, also lauded the legislators' recent accomplishments.

The year ahead could be another good one for vets, particularly for the Vietnam-era crop. The President recently announced an array of special improvements he wants for this group—more jobs, improved educational benefits, larger outlays for vocational rehabilitation, readjustment counseling programs, etc. And lawmakers in both the Senate and House are sponsoring legislation that would enact the President's objectives and more.

Most of the initiatives that led to the recent new and improved benefits were generated by the congressional veterans' affairs committees. But the President went along as he signed them all into law. He did so knowing that federal outlays for veterans' programs will rise from about $19 billion to $21 billion this fiscal year.

Interestingly, the Chief Executive's approvals came about the same time he was warning most government agencies to restrain spending to help curb inflation and reduce the annual federal budget deficit below the $30 billion mark.

Veterans' benefits are almost never attacked, much less reduced. On the other hand, many lawmakers have denounced the military retirement system as wasteful, unduly generous, and badly in need of surgery. For awhile it seemed the popular thing to do.

Similar charges from Capitol Hill and elsewhere might logically be leveled against VA disability compensation and pensions, drawn by more than 4,000,000 ex-service members. After all, the minor disabilities many compensation recipients suffer do not restrict their earning power or prevent them from leading a normal life. But calls for tightening up the criteria in such cases have never developed; nor are they likely. Only improvements are forecast, because by and large that's the way the general public wants it.

Congress, in not hesitating to lay on new improvements for ex-service members, expresses the people's wishes, and it did so in impressive fashion late last year. In the final days of the 95th Congress, the lawmakers approved, and the President signed into law, increases in veterans' compensation, car allowances, clothing allowances, burial allowances, dependency-indemnity compensation (for survivors), aid for several categories of seriously disabled vets, VA home loans, Medal of Honor winner pensions, pensions for elderly and needy vets and survivors, and more. (*See the detailed list in the December '78 "Bulletin Board."*)

In a related move, also illustrating Uncle's determination to support veterans, Congress brushed aside the Administration's only bid to erase a long-standing major veterans' benefit: preference in federal job hiring for nondisabled vets. The ill-fated attempt to remove a veterans' preference had gone to

mething should be done about He also went to bat for adequate tirement pay.

At a Veterans Day address in rmingham, General Allen again hit e erosion-by-inflation issue. Sigficantly, he praised the present ilitary retirement system as "the ost important career incentive," en noted that the Administration ay tamper with it. He asked the ublic to support the Air Force in s fight to provide members "a easonable, equitable way of life."

Sources in the Air Force Secrery's office said they expect other gh-placed USAF executives to nulate General Allen's strong ugs for pay and benefits.

ntiunion Law Enacted

About three years ago, there was lot of talk about military unions. ome quarters apparently visualized iem sprouting up at scores of inallations throughout the country. o a batch of antiunion bills found ieir way into the congressional opper. One of them recently eached the President and, despite ie fact that his Secretary of Dense testified it wasn't needed, he igned the measure into law. Earlier, efense had issued a tough antimilitary union regulation that the Air Force implemented November 21, 1977. There's been no need to use it, however.

The new law prohibits the organization of military unions, says service people can't join them, and provides that violators will be courtmartialed. It's spelled out in detail.

USAF right along has been keeping a close eye on its bases for even a murmur of union-type activity. "We've received no reports of any kind involving Air Force people; it's been very quiet," an Air Staff official told AIR FORCE Magazine. Nor does he expect any. However, he said some quarters feel that overtures toward creating a military union could emerge late this year if the Administration invokes another military pay raise cap.

The revised DoD and Air Force regulations implementing the antiunion law are due out early this year. The new statute does not require the several thousand technicians in Air Force and Army Reserve and National Guard units to surrender their union membership. Earlier, the Senate voted to deny the technicians union membership, but the House removed the provision after hearings raised the possibility it might be unconstitutional and jeopardize the entire bill. The Senate agreed.

In addition to the Reserve-Guard technicians, some active-duty members belong to unions through their off-duty jobs. This is permitted.

Custodial Care Change Due

The Defense Department is preparing a regulation change that will continue custodial care coverage under CHAMPUS for an estimated 130 to 200 persons. Most are in nursing homes.

Earlier, CHAMPUS officials ruled that this expensive care could not be covered by the program and should be withdrawn. However, this would have caused great financial hardship for most of the patients already receiving custodial care coverage. The Air Force Association and other veterans and military associations strongly protested the removal of coverage for those already receiving it.

The Defense Department finally agreed to "grandfather them in," but as of late November had not officially announced the fact. A spokesman cited "difficulty arriving at a definition of custodial care" and other technical problems as

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Capitol Hill, not specifically as an antiveterans move, but as art of the attempt by the Carter Administration to overhaul he Civil Service. Almost every other plank in the overhaul neasure was approved.

Coming up is the special push for Vietnam-era veterans. The President, supporting them to the hilt, announced his goals in a message to Congress that was overshadowed by he lawmakers' rush to adjourn last fall. The message expressed great sympathy for these veterans and the problems many of them have encountered. Later, during Veterans Day ceremonies at Arlington Cemetery, Mr. Carter heaped praise on the veterans of that war and urged the country to support hem also.

Most Vietnam-era service members "have already adjusted very successfully to civilian life," the President declared. He reported that sixty-five percent have used their GI Bill benefits, a far larger share than did participants in earlier wars. Furthermore, Vietnam-era vets' unemployment rates have plunged to 4.7 percent. By 1977, the President added, their median personal incomes had reached $12,880, compared to $9,820 for comparable-aged nonveterans.

However, while most of the Viet-era veterans have done pretty well, Mr. Carter expressed great concern over those who have not. He cited minority and disadvantaged vets especially. And he declared that the government had not done enough for seriously disabled returnees who, he said, are enduring a fifty percent unemployment rate.

The Commander in Chief outlined a new package that includes a beef-up of the government's existing CETA and HIRE veterans hiring projects; increased hiring of disabled veterans by all federal agencies; and better cooperation between the Department of Labor and VA hiring personnel.

He also called on government offices to increase their "outreach" efforts to get minority veterans who have ignored their GI Bill benefits to use them. In addition, he said he will ask Congress:

- To extend GI Bill eligibility beyond ten years after discharge (the present limit) for veterans "in need or educationally disadvantaged."
- To "modernize and improve" the vocational rehabilitation program for those with service-connected disabilities.
- To ease the present law that automatically denies VA benefits to combat veterans who were discharged for having gone over the hill for 180 days or more. He also said the government will help vets seeking upgrading of their cloudy discharges by having the Pentagon "provide indices of discharge review/correction board cases to selective VA regional offices."

To give his drive more clout within the Administration, the President has given the Veterans Administration cabinet status, for the purpose of attending cabinet meetings. This step, he said, gives the VA "a stronger voice." In a related move, he has established an Interagency Veterans Federal Coordinating Committee. It is composed of officials of eight federal agencies and is operated by the President's executive office.

Even before the last Congress adjourned, members sympathetic to the Vietnam-era group's problems announced that they too would push for many of these same goals in the new Congress that convenes this month. They introduced bills that would improve the job market, provide health and psychological care, extend the GI Bill delimiting date, and raise GI Bill payments for veterans attending high-cost schools and colleges.

The last item is not on Mr. Carter's list, a fact that may not set well with the seemingly growing number of persons favoring the "flexible tuition" idea. It is particularly popular in New England, where the ultra-expensive private colleges are concentrated. On the other hand, some influential lawmakers who normally support new veterans' benefits oppose shelling out extra GI Bill funds for "expensive" schools.

Sparks could fly before the latter issue is resolved. Most of the other plans for assisting Vietnam-era veterans seem likely to win approval. ■

The Bulletin Board

reasons for the delay in issuing a new regulation. He said he hoped "it won't be long."

New VA Benefits Await Many

The Veterans Administration wants all veterans and survivors who recently became entitled to increased benefits to be aware of them and apply for them. They include:

- Disabled vets who have suffered the service-connected loss, or loss of use, of one extremity, and who have subsequently lost the paired extremity from nonservice-connected causes. The individual must have been rated less than 100 percent disabled for his service-connected injuries to be eligible for the newly added $175 per month for nonservice-connected loss.
- A quarter million surviving spouses of veterans now drawing Dependency-Indemnity Compensation who are so disabled as to be confined to their homes, yet not so ill as to require nursing home care or the aid and attendance of another person. They're due an additional $45 per month.
- Severely disabled Vietnam-era vets requiring special facilities—the so-called "wheelchair homes"—to meet their particular needs. VA grants for such vets have been increased from $25,000 to $30,000, and those who may be eligible should put in their bids.

VA Administrator Max Cleland has urged veterans and surviving spouses who may be eligible for these improved programs, all approved by Congress last fall, to contact their nearest VA office for details.

The agency this month plans to notify the 2,300,000 elderly and needy recipients of nonservice-connected VA pensions that they can either accept the improved pension plan approved by Congress recently, or continue under the old pension system.

The new program, effective January 1, provides large pension boosts for many recipients. For example, a veteran with one dependent may receive up to $4,651, instead of $2,544 heretofore. However, certain income exclusions under the new plan may result in a reduced pension for some, Cleland said. Participants have until next October to decide which program they prefer, with payments retroactive to January 1.

USAF Jobs Tough to Get

It's much tougher to land an Air Force civilian job—in fact, any civilian position in government—than it was just a little more than two months ago. That's because the President is reducing to fifty percent the number of vacancies that can be filled. Few exceptions are permitted.

Thus, if all goes as planned, the 245,000-member USAF civilian work force will start to shrink as attrition, resignations, and dismissals take place, and only half are replaced. The freeze is on until further notice. One report estimates the service will lose about 2,000 employees and pick up about 1,000 each month.

Maneuvers to avoid the employment curbs, including ceiling augmentations, overstrength positions, temporary jobs, conversion of civilian to military slots, etc., are prohibited. Defense Secretary Harold Brown said emergency hiring appeals "will not as a rule be entertained favorably" and no such hirings "shall be approved except by me."

The President said he applied the partial hiring freeze to reduce the federal bureaucracy, save money, and curb inflation.

Short Bursts

A **cost-of-living allowance (COLA) for single service people overseas?** The Defense Department is working on the idea and it could materialize later this year. Officials are talking of a single COLA of about $30 to $40 per month. In addition, extension of full junior enlisted travel benefits to Stateside members is also seen as a possibility, though not a probability, this year. JCS Chairman Gen. David Jones is pushing this one hard.

Air Force has been concerned about its **lieutenant colonels passed over for promotion to colonel.** It says there aren't nearly enough O-6 spaces to accommodate all who deserve eagles. So it wants to "increase management's acceptance of nonselected O-5s and encourage quality O-5s to remain on active duty in a productive capacity. . . ."

Helping the situation somewhat a improved selection results. T most recent full colonels board, t Air Force notes, chose for pron tion 117 of 599, or 19.5 percent, p viously passed-over officers. T previous board selected 14.8 p cent, and the one before that o 10.9 percent.

January 31 is the deadline for a plying for an **Air Force Aid Socie H. H. Arnold education loan.**

Some USAF quarters want to **d card the Good Conduct Me award program.** They say snarled in paperwork, carries promotion points, and many airm don't fancy it anyway. The Ma power and Personnel Center, ho ever, has nixed the idea, saying GCM is a form of recognition honorable service and eliminati would affect morale and esprit corps. Furthermore, upcomi changes in administering the p gram will cut the paperwork "d matically," the Center adds.

Correction: In this space last mor we reported that USAF military pe ple in FY '77 overwhelmed the oth services on adopted suggestior 250,000 to the Army's 52,000 a the Navy's 10,000. The figures a correct except that they cover t entire history of the program, n just one year.

Senior Staff Changes

PROMOTIONS: To Major Genera John L. **Piotrowski.** To Brigadie General: John R. **Lasater,** Leo **Ma quez.**

CHANGES: Col. (B/G selectee Guy L. Hecker, Jr., from Cmdr., 45t AD, SAC, Pease AFB, N. H., to Dep Dir. for MX Matters, DCS/RD&A, H USAF, Washington, D. C. . . . **M/ (L/G) selectee James P. Mullin** from Cmdr., Ogden ALC, AFLC, Hi AFB, Utah, to Cmdr., 15th AF, SA March AFB, Calif. . . . **M/G John Murphy,** from V/C, 8th AF, SA Barksdale AFB, La., to Cmdr., Og den ALC, AFLC, Hill AFB, Utah, re placing M/G (L/G selectee) Jame P. Mullins.

SENIOR ENLISTED ADVISO CHANGES: CMSgt. Norm Gallio from DACTA, Hq. TAC, Langle AFB, Va., to Senior Enlisted Adviso Hq. TAC, Langley AFB, Va., repla ing CMSgt. Lewis C. Covington, t IG, Hq. TAC, Langley AFB, Va.

This Is AFA

The Air Force Association is an independent, nonprofit, aerospace organization serving no personal, political, or commercial interests; established January 26, 1946; incorporated February 4, 1946.

OBJECTIVES

The Association provides an organization through which free men may unite to fulfill the responsibilities imposed by the impact of aerospace technology on modern society; to support armed strength adequate to maintain the security and peace of the United States and the free world; to educate themselves and the public at large in the development of adequate aerospace power for the betterment of all mankind; and to help develop friendly relations among free nations, based on respect for the principle of freedom and equal rights to all mankind.

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AFA News

By Don Steele, AFA AFFAIRS EDITOR

Recently, during a radio broadcast from the st of The Grand Ole Opry in Nashville, Tenn., AFA President Gerald V. Hasler presented an AFA Citation of Honor to Roy Acuff, "The King Country Music," for a quarter century (1949–74 of entertaining United States servicemen in mc than thirty countries around the world. Shown in Mr. Acuff's dressing room following the presentation are, from left, Mr. Hasler, Mr. Acu and Maj. Gen. Thomas M. Sadler, Commander, Twenty-First Air Force at McGuire AFB, N. J.

ABOVE: *The Hon. John C. Stetson, Secretary of the Air Force, was the guest speaker at the New York State AFA's 1978 Convention in Niagara Falls. Shown during the convention banquet are, from left, AFA President Gerald V. Hasler, Secretary Stetson, and Fred Boorady, President of the Lawrence D. Bell Chapter, the convention hosts. During the business session, delegates reelected Incumbent State President Kenneth Thayer.*

ABOVE RIGHT: *The Oklahoma State AFA's 1978 Convention was hosted by the Enid Chapter at Enid AFB. Program participants included, from left, Enid Chapter President Oscar Curtis; Oklahoma AFA President Dave Blankenship; Rep. Glenn English (D-Okla.); Maj. Gen. Cecil E. Fox, Commander, Oklahoma Air Logistics Center, Tinker AFB; AFA National Director Vic Kregel; and Col. Thomas J. Magner, Commander, 71st Flying Training Wing, Enid AFB. Delegates elected William N. Webb to be State President for 1978–79.*

RIGHT: *California AFA leaders who attended the annual Air Force Association Day at Dodger Stadium for the Los Angeles Dodgers vs. Pittsburgh Pirates baseball game included, from left, South Bay Chapter President Chuck Pinney; Long Beach Chapter President Doug Gibson, who chairs the annual program; South Bay Chapter Secretary-Treasurer Eric Rafter; and California State AFA Vice President (South) Don Flaherty.*

chapter and state photo gallery

p. Bob Wilson (R-Calif.), left, Senior Minority Member of the House Armed Services Committee, s the guest of honor at a recent community recognition dinner in San Diego, where he received a aque from AFA's San Diego Chapter. Explaining the function of the machmeter, which is mounted the plaque, is Chapter Vice President E. Vern Albert.

Washington State AFA Vice President Richard M. Bond, a member of the State Legislature and one of the pilots who donated his time and airplane for the Spokane Chapter's annual program to provide orientation flights to members of the Medical Lake High School Junior ROTC cadets, is shown with some of the cadets who participated in the program.

At a dinner honoring the 49th Fighter Interceptor Squadron at Griffiss AFB, N. Y., winner of the F-106 Delta Dart category in the 1978 William Tell Competition at Tyndall AFB, Fla. (see pp. 32 and 35 in the December issue), *the Squadron received the New York State AFA's Aviation Excellence Award. Shown during the presentation are, from left, Lt. Col. Jim Lowe, the 49th's Commander; Pat Destito of the Savoy Restaurant, who hosted the dinner; Ed Callahan, Chairman of the Griffiss Military Affairs Committee; and New York State AFA President Ken Thayer.*

Paul E. Schwab, Vice President of General Dynamics' Convair Division, was the guest speaker at the Gen. Curtis E. LeMay Chapter's Annual Brunch at the Newport Beach Marriott, Calif. Following his presentation on the capabilities of the cruise missile, Mr. Schwab, center, presented models of the Tomahawk cruise missile to Chapter Program Chairman Ted R. Gillenwaters, left, and Chapter President Tom Scott, right.

AFA News

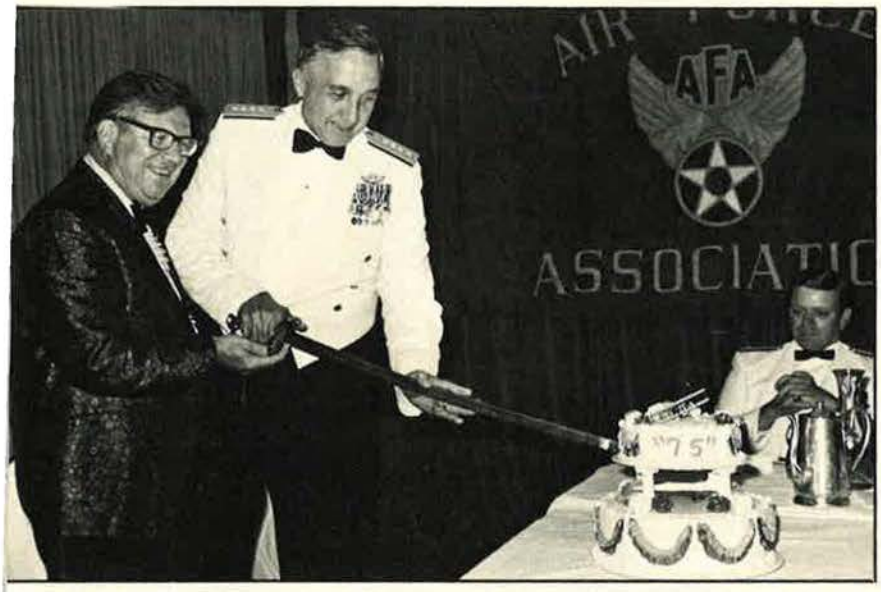
TSgt. Joe Bryant, one of last year's twelve Outstanding Airmen, was presented a plaque by AFA's Albuquerque Chapter, N. M., and his wife was given a check to use during their trip to Washington, D. C., to participate in AFA's 1978 National Convention. Shown during the presentation ceremony in the Base Commander's Office at Kirkland AFB are, from left, Chapter President John Donnellon, Sergeant Bryant, Mrs. Bryant, and Col. Archer L. Durham, Kirtland AFB Commander.

The Tacoma, Wash., Chapter sponsored a dinner-dance at the McChord AFB Officers' Club to celebrate the thirty-first anniversary of the Air Force. Gen. William G. Moore, Jr., righ MAC Commander in Chief, the guest speaker, and Chapter President Al Rexlus, left, are shown cutting the traditional birthday cake.

Principals in the newly organized Flying Yankees Chapter charter meeting at Windsor Locks, Conn., included, from left, Treasuror George Damato, Secretary Patricia Plamandon, Connecticut State President Joe Falcone, who presented the charter, President Russell Lose, and Vice President Al Dubois.

Alexander C. Field, Jr., Vice President for AFA's Great Lakes Region and Vice President of WGN Continental Broadcasting in Chicago, was the guest speaker at a recent dinner meeting of the 9014th Air Reserve Information Squadron, O'Hare International Airport. Shown are, from left, Lt. Col. Emanuel Glyman, 9014th Commander; Mr. Field; Col. David O. Cravey, Commander, 928th Tactical Airlift Group, O'Hare IAP; and Maj. Gen. Jonas L. Blank, USAF (Ret.). Mr. Field's subject was "Communications in Our National Defense," with emphasis on the Air Force's relationship with the broadcasting industry.

photo gallery



Gen. Bryce Poe II, right, Commander, Air Force Logistics Command, joins Wright Memorial Chapter President Norman C. "Dutch" Heilman, left, in cutting a special birthday cake in a salute to the thirty-first anniversary of the Air Force and the Chapter, and the seventy-fifth anniversary of powered flight. The special tribute took place during a chapter-sponsored dinner dance at which Gen. William G. Moore, Jr., CINC MAC, was the featured speaker.

The 436th Military Airlift Wing at Dover AFB, Del., and AFA's Delaware Galaxy Chapter recently sponsored a salute to former US Sen. John J. Williams. Among the mementoes and gifts presented to Senator Williams, right, was one from the Twenty-First Air Force (MAC). Shown presenting the gift is Maj. Gen. Thomas M. Sadler, Twenty-First Commander. Other distinguished guests included Delaware Gov. Pierre S. duPont IV; Sens. Roth and Biden from Delaware, and Eastland from Mississippi; Rep. Thomas B. Evans, Jr. (R-Del.); Dover Mayor Charles A. Legates; Gen. William G. Moore, Jr., CINC MAC; and 436th Commander Col. William J. Mall, Jr.

The Fort Smith, Ark., Chapter's recent dinner meeting featured a presentation by the Tactical Air Command's Briefing Team. Following the presentation, Chapter President Steve Altick, right, presented an Honorary Flying Razorback certificate to briefer Maj. Bill Banks.

NEW FOR MEMBERS UNDER 30 — MAJOR BENEFIT INCREASES

Now . . . The Sixth Major Benefit Increase

$85,000 STANDARD PLA

Other Important Benefits

COVERAGE YOU CAN KEEP. Provided you apply for coverage under age 60 (see "ELIGIBILITY") your insurance may be retained at the same low group rates to age 75.

FULL TIME, WORLD WIDE PROTECTION. The policy contains no war clause, hazardous duty restriction, combat zone waiting period or geographical limitation.

DISABILITY WAIVER OF PREMIUM. If you become totally disabled at any time prior to age 60 for at least a 9-month period, your coverage will be continued in force without further payment of premiums as long as you remain disabled.

FULL CHOICE OF SETTLEMENT OPTIONS. All standard forms of settlement options, as well as special options agreed to by the insured and United of Omaha, are available to insured members.

CONVENIENT PAYMENT PLANS. Premium payments may be made by monthly government allotment (payable to Air Force Association), or direct to AFA in quarterly, annual or semi-annual installments.

DIVIDEND POLICY. AFA's primary policy is to provide maximum coverage at the lowest possible cost. Consistent with this policy, AFA has provided year-end dividends (16.67% for 1977) to insured members in thirteen of the past sixteen years, and has now increased basic coverage on six separate occassions.

Additional Information

Effective Date of Your Coverage. All certificates are dated and take effect on the last day of the month in which your application for coverage is approved, and coverage runs concurrently with AFA membership. AFA Military Group Life Insurance is written in conformity with the insurance regulations of the State of Minnesota. The insurance will be provided under the group insurance policy issued by United of Omaha to the First National Bank of Minnesota as trustees of the Air Force Association Group Insurance Trust

EXCEPTIONS: There are a few logical exceptions to this coverage. They are: **Group Life Insurance:** Benefits for suicide or death from injuries intentionally self-inflicted while sane or insane will not be effective until your coverage has been in force for 12 months.

The Accidental Death Benefit and Aviation Death Benefit shall not be effective if death results: (1) From injuries intentionally self-inflicted while sane or insane, or (2) From injuries sustained while committing a felony, or (3) Either directly or indirectly from bodily or mental infirmity, poisoning or asphyxiation from carbon monoxide, or (4) During any period a member's coverage is being continued under the waiver of premium provision, or (5) From an aviation accident, either military or civilian, in which the insured was acting as pilot or crew member of the aircraft involved, except as provided under AVIATION DEATH BENEFIT.

Eligibility

All active duty personnel of the Armed Forces of the United States and members of the Ready Reserve* and National Guard* (under age 60), Armed Forces Academy cadets*, and college or university ROTC cadets* are eligible to apply for this coverage provided they are now, or become, members of the Air Force Association.

*Because of restrictions on the issuance of group insurance coverage, applications for coverage under the group program cannot be accepted from cadets or Reserve or Guard personnel residing in Florida, New York, Ohio or Texas. Members in these states may request special application forms from AFA for individual policies which provide coverage quite similar to the group program.

Please Retain This Medical Bureau Prenotification For Your Records

Information regarding your insurability will be treated as confidential. United Benefit Life Insurance Company may, however, make a brief report thereon to the Medical Information Bureau, a nonprofit membership organization of life insurance companies, which operates an information exchange on behalf of its members. If you apply to another bureau member company for life or health insurance coverage, or a claim for benefits is submitted to such a company, the Bureau, upon request, will supply such company with the information in its file.

Upon receipt of a request from you, the Bureau will arrange disclosure of any information it may have in your file. (Medical information will be disclosed only to your attending physician.) If you question the accuracy of information in the Bureau's file, you may contact the Bureau and seek a correction in accordance with the procedures set forth in the federal Fair Credit Reporting Act. The address of the Bureau's information office is P.O. Box 105, Essex Station, Boston, Mass. 02112. Phone (617) 426-3660.

United Benefit Life Insurance Company may also release information in its file to other life insurance companies to whom you may apply for life or health insurance, or to whom a claim for benefits may be submitted.

CURRENT BENEFIT TABLES

AFA STANDARD PLAN

PREMIUM: $10 per month

Insured's Attained Age	Basic Benefit*	Extra Accidental Death Benefit*	Total Benefit
20-29	$85,000	$12,500	$97,500
30-34	65,000	12,500	77,500
35-39	50,000	12,500	62,500
40-44	35,000	12,500	47,500
45-49	20,000	12,500	32,500
50-54	12,500	12,500	25,000
55-59	10,000	12,500	22,500
60-64	7,500	12,500	20,000
65-69	4,000	12,500	16,500
70-74	2,500	12,500	15,000

Aviation Death Benefit:*

Non-war related	$25,000
War related	$15,000

AFA HIGH OPTION PLAN

PREMIUM: $15 per month

Insured's Attained Age	Basic Benefit*	Extra Accidental Death Benefit*	Total Benefit
20-29	$127,500	$12,500	$140,000
30-34	97,500	12,500	110,000
35-39	75,000	12,500	87,500
40-44	52,500	12,500	65,000
45-49	30,000	12,500	42,500
50-54	18,750	12,500	31,250
55-59	15,000	12,500	27,500
60-64	11,250	12,500	23,750
65-69	6,000	12,500	18,500
70-74	3,750	12,500	16,250

Aviation Death Benefit:*

Non-war related	$37,500
War related	$22,500

*The Extra Accidental Death Benefit is payable in the event an accidental death occurs within 13 weeks of the accident, except as noted under **Aviation Death Benefit** (below).

***AVIATION DEATH BENEFIT:** The coverage provided under the Aviation Death Benefit is paid for death which is caused by an aviation accident in which the insured is serving as pilot or crew member of the aircraft involved. Under this condition, the Aviation Death Benefit is paid in lieu of all other benefits of this coverage. Furthermore the non-war related benefit will be paid in all cases where the death does not result from war or an act of war, whether declared or undeclared.

OPTIONAL FAMILY COVERAGE

(may be added to either Standard or High Option Plan)
PREMIUM: $2.50 per month

Insured's Attained Age	Life Insurance Coverage for Spouse	Life Insurance Coverage for each Child*
20-39	$10,000	$2,000
40-44	7,500	2,000
45-49	5,000	2,000
50-54	4,000	2,000
55-59	3,000	2,000
60-64	2,500	2,000
65-69	1,500	2,000
70-74	750	2,000

*Between the ages of six months and 21 years, each child is provided $2,000 coverage. Children under 6 months are provided with $250 coverage once they are 15 days old and discharged from hospital.

Association Military Group life Insurance

$27,500 HIGH OPTION PLAN

APPLICATION FOR AFA MILITARY GROUP LIFE INSURANCE

United of Omaha

Group Policy GLG-2625
United Benefit Life Insurance Company
Home Office Omaha Nebraska

Full name of member _____
Rank Last First Middle

Address _____
Number and Street City State ZIP Code

Date of birth Mo. Day Yr.	Height Weight	Social Security Number

Please indicate category of eligibility and branch of service.

- ☐ Extended Active Duty
- ☐ Ready Reserve or National Guard
- ☐ Air Force Academy
- ☐ ROTC Cadet _____ Name of college or university
- ☐ Air Force
- ☐ Other _____ (Branch of service)
- ☐ _____ Academy

Name and relationship of primary beneficiary

Name and relationship of contingent beneficiary

This insurance is available only to AFA members

- ☐ I enclose $13 for annual AFA membership dues (includes subscription ($9) to AIR FORCE Magazine).
- ☐ I am an AFA member.

Please indicate below the Mode of Payment and the Plan you elect.

HIGH OPTION PLAN		Mode of Payment	STANDARD PLAN	
Members Only	Members and Dependents		Members Only	Members and Dependents
☐ $ 15.00	☐ $ 17.50	**Monthly** government allotment. I enclose 2 months' premium to cover the period necessary for my allotment (payable to Air Force Association) to be established.	☐ $ 10.00	☐ $ 12.50
☐ $ 45.00	☐ $ 52.50	**Quarterly.** I enclose amount checked.	☐ $ 30.00	☐ $ 37.50
☐ $ 90.00	☐ $105.00	**Semiannually.** I enclose amount checked.	☐ $ 60.00	☐ $ 75.00
☐ $180.00	☐ $210.00	**Annually.** I enclose amount checked.	☐ $120.00	☐ $150.00

Names of Dependents To Be Insured	Relationship to Member	Dates of Birth Mo Day Yr	Height	Weight

Have you or any dependents for whom you are requesting insurance ever had or received advice or treatment for: kidney disease, cancer, diabetes, respiratory disease, epilepsy, arteriosclerosis, high blood pressure, heart disease or disorder, stroke, venereal disease or tuberculosis? Yes ☐ No ☐

Have you or any dependents for whom you are requesting insurance been confined to any hospital, sanitarium, asylum or similar institution in the past 5 years? Yes ☐ No ☐

Have you or any dependents for whom you are requesting insurance received medical attention or surgical advice or treatment in the past 5 years or are now under treatment or using medications for any disease or disorder? Yes ☐ No ☐

IF YOU ANSWERED "YES" TO ANY OF THE ABOVE QUESTIONS, EXPLAIN FULLY including date, name, degree of recovery and name and address of doctor. (Use additional sheet of paper if necessary.)

I apply to United Benefit Life Insurance Company for insurance under the group plan issued to the First National Bank of Minneapolis as Trustee of the Air Force Association Group Insurance Trust. Information in this application, a copy of which shall be attached to and made a part of my certificate when issued, is given to obtain the plan requested and is true and complete to the best of my knowledge and belief. I agree that no insurance will be effective until a certificate has been issued and the initial premium paid.

I hereby authorize any licensed physician, medical practitioner, hospital, clinic or other medical or medically related facility, insurance company, the Medical Information Bureau or other organization, institution or person, that has any records or knowledge of me or my health, to give to the United Benefit Life Insurance Company any such information. A photographic copy of this authorization shall be as valid as the original. I hereby acknowledge that I have a copy of the Medical Information Bureau's prenotification information.

Date _____, 19 ___ _____
Member's Signature

1/79
Form 3676GL App

Application must be accompanied by check or money order. Send remittance to: Insurance Division, AFA, 1750 Pennsylvania Avenue, NW, Washington, D.C. 20006

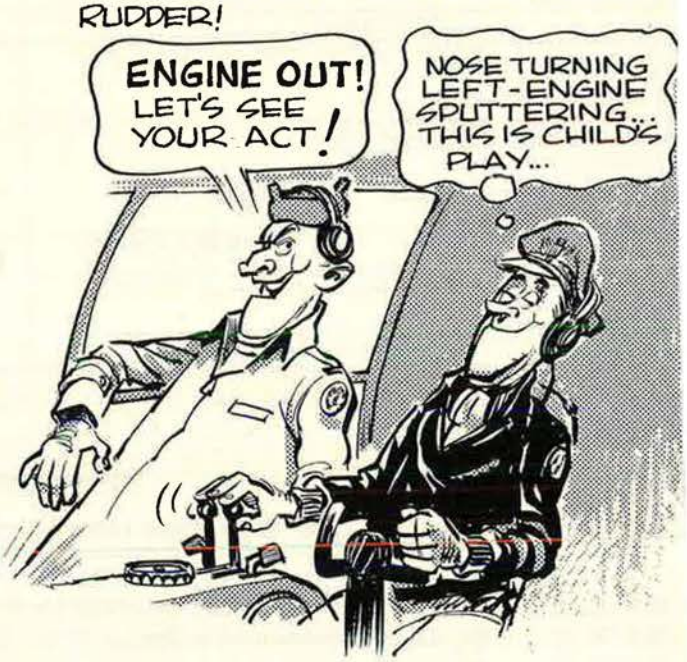
Bob Stevens'

"There I was..."

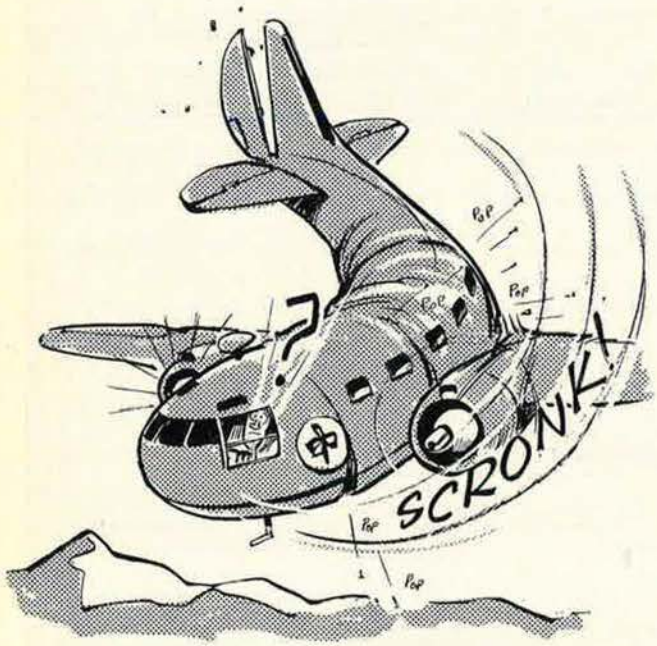
MULTI-ENGINE DRIVERS PRIDE THEMSELVES ON HOW QUICKLY THEY CAN DETECT, and "CLEAN UP," A DEAD ENGINE. JUST REMEMBER THAT THE BIRD WANTS TO TURN INTO THE DEAD ENGINE and YOU'LL KEEP THIS TRUE STORY STRAIGHT.

CBI (CHINA-BURMA-INDIA) CHECK RIDE IN AN OL' C-46

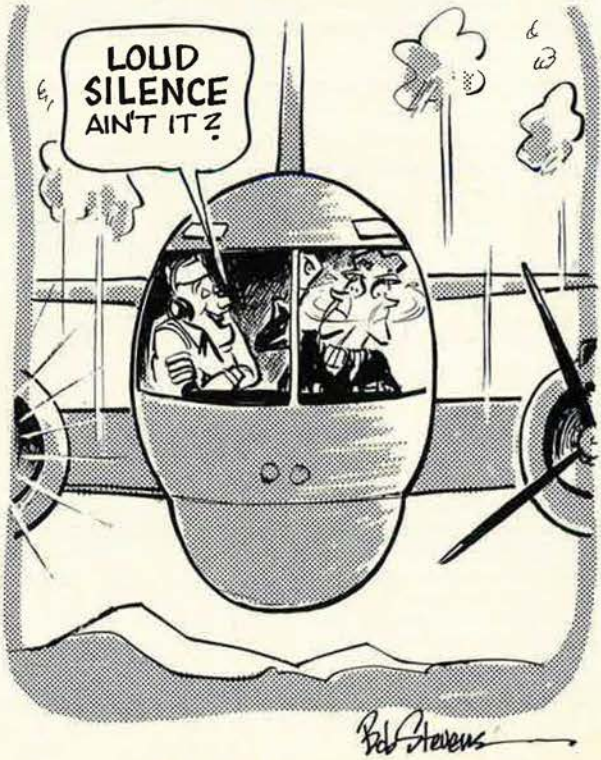
THEN, BEFORE THE ENGINE QUITS, THE CHECK PILOT STOMPS ON THE ***LEFT*** RUDDER!

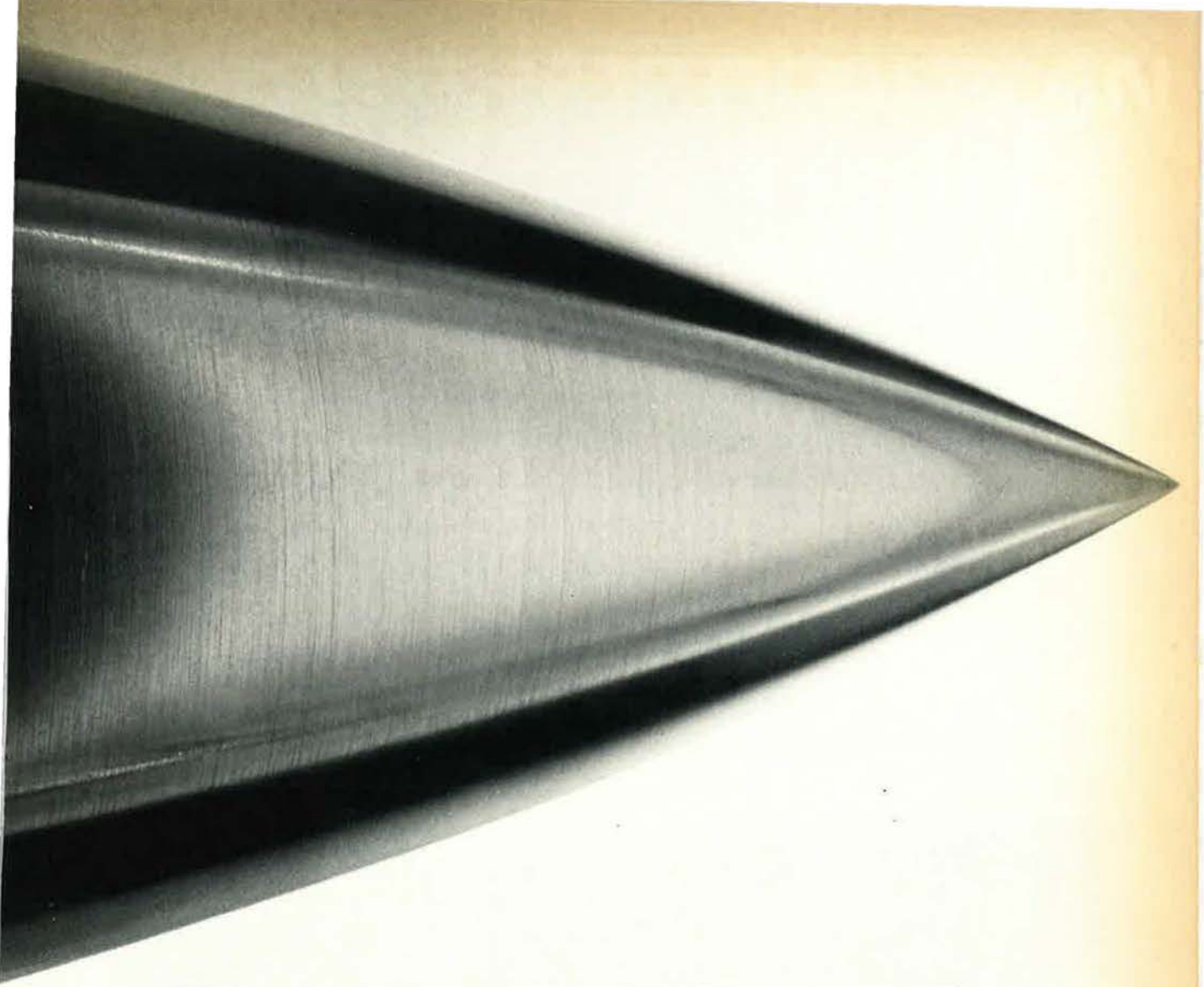


THE CHECKEE STOMPS ON THE ***RIGHT*** RUDDER TO KEEP DIRECTIONAL CONTROL JUST AS THE MILL QUITS and...



QUICKLY FEATHERS THE ***LEFT*** PROP!





STRAPDOWN

imple, low-cost inertial guidance systems for tactical missiles. From Northrop's Precision roducts Division, a leader in strapdown technology.

Northrop is under contract to provide strapdown units for U.S. Navy's Phoenix air-to-air missile.

Northrop also producing digital strapdown attitude reference assembly for Navy's larpoon and Tomahawk anti-ship missiles.

Northrop's strapdown mid-course guidance system successfully demonstrated for Air Force/ lavy Advanced Medium Range Air-to-Air Missile (AMRAAM).

Proven "off-the-shelf" sensors in high volume production and demonstrated microprocessor echnology provide precise inertial performance with assured reliability.

Northrop is first to develop small, lightweight standard strapdown inertial package for road range of precision navigation and guidance applications. For aircraft, helicopters, ground ehicles, torpedoes and tactical missiles.

Northrop Corporation, Precision Products Division, 100 Morse Street, Norwood, lassachusetts 02062.

NORTHROP

Making advanced technology work.

We lead the way for cruise missiles...

Cruise missiles will be launched from ships, submarines, ground-based units and aircraft. They are some of the most versatile and accurate missile systems ever developed.

McDonnell Douglas provides the navigation and guidance systems for all cruise missiles. Our terrain correlation system for the land attack missile provides extremely accurate updates to the inertial navigation system, while terrain following enables the missile to fly at very low altitudes to avoid detection by enemy radar. The anti-ship missile is guided by a modified version of our Harpoon anti-ship missile's guidance system.

McDonnell Douglas is working to make cruise missiles even smarter and more versatile. By utilizing even more accurate flight demonstrated guidance techniques, cruise missiles could deliver conventional warheads and submunitions over great distances with unprecedented accuracy.