

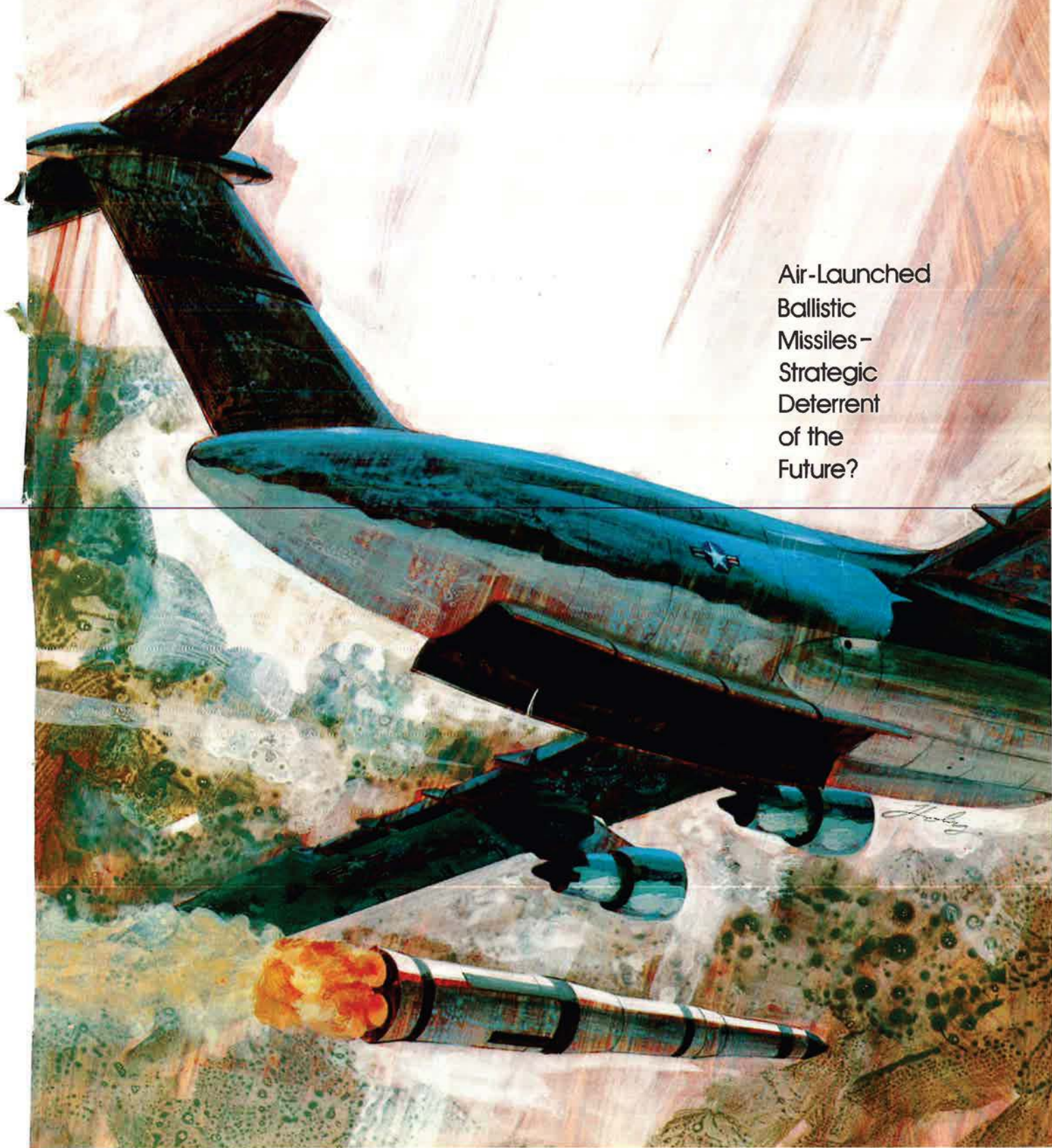
MARCH 1973/\$1

AIR FORCE

PUBLISHED BY THE AIR FORCE ASSOCIATION

MAGAZINE

Air-Launched
Ballistic
Missiles -
Strategic
Deterrent
of the
Future?



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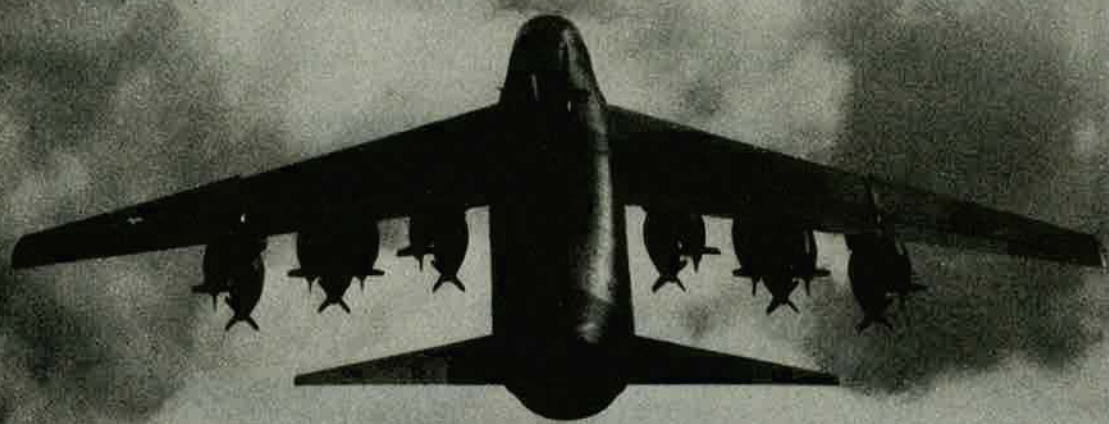
Lockheed assembly lines in Georgia.

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Marietta, Georgia





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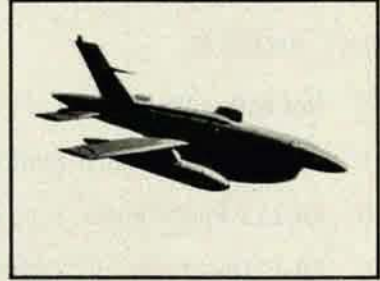
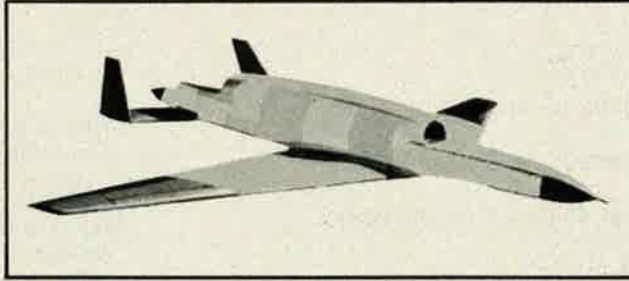
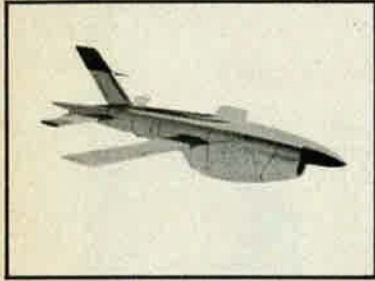
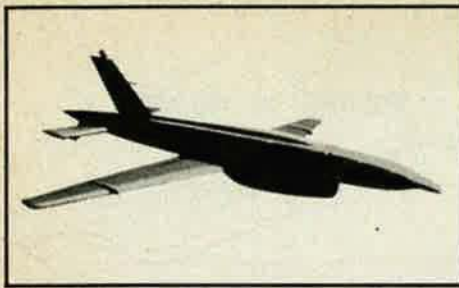
Circulation audited by
Business Publications Audit

Publisher: James H. Straubel
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AIR FORCE Magazine (including **SPACE DIGEST**) is published monthly by the Air Force Association, Suite 400, 1750 Pennsylvania Ave., N.W., Washington, D.C. 20006. **Phone:** (202) 298-9123. Second-class postage paid at Washington, D.C. **Membership rate:** \$10 per year (includes \$9 for one-year subscription); \$24 for three-year membership (includes \$21 for subscription). **Subscription rate:** \$10 per year; \$2 additional for foreign postage. Single copy \$1. Special issues (Spring and Fall Almanac Issues) \$2 each. **Change of address** requires four weeks' notice. Please include mailing label. Publisher assumes no responsibility for unsolicited material. Trademark registered by Air Force Association. Copyright 1973 by Air Force Association. All rights reserved. Pan-American Copyright Convention.



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Not With a Whimper, But a Bang

By John L. Frisbee

EXECUTIVE EDITOR, AIR FORCE MAGAZINE

IRONICALLY, the cease-fire in Vietnam has come, not with the whimper that some pundits had long predicted, but with a bang.

The "bang" was Linebacker II, the eleven-day bombing campaign of last December that brought North Vietnam and the Viet Cong back to Paris, eager to sign the cease-fire agreement that is now being put to the test of workability.

That bang will reverberate for a long time. Already, it has forced a number of critics to the grudging admission that airpower, when used with discrimination, purpose, and firmness of will, can be as decisive in a politico-military environment (which Vietnam always has been) as it was proven to be in the all-out, no-holds-barred combat of World War II.

The vindication of airpower came in Vietnam in the last nine months of the eleven-year-old war. US airpower turned back the only massive North Vietnamese invasion of the conflict, carried the war to the enemy, and persuaded him to sign a cease-fire. While the Paris agreement may not be all that one might have wished, it is a reality. Our POWs are coming home, and South Vietnam has an opportunity to survive as an independent, non-Communist nation. That has been the US objective from the beginning.

All this came about after US ground forces had been withdrawn from combat, and at a cost of 300 US combat deaths in 1972, in dramatic contrast to 14,600 US battle deaths during the peak year (1968) of our ground force commitment.

This is not to claim that airpower worked a near-miracle singlehandedly. The mining of North Vietnamese harbors in May 1972 was a critical element. So was the enhanced combat effectiveness of the South Vietnamese military forces attained through the Vietnamization program. Our South Vietnamese allies fought far better than almost anyone believed they would.

But the 1972 invasion from the North could not have been halted with so little loss of territory, nor the cease-fire negotiated when and as it was, if US airpower had been held to the mainly defensive role to which it was restricted from 1968 to April 1972—a four-year period when air strikes were confined below the DMZ

and to the Ho Chi Minh Trail in Laos. In the final analysis, the decisive quality of airpower lies mainly in its offensive capabilities. These were used only in half measures between 1965 and 1968, and hardly at all from March of 1968 until April of last year.

Airpower's success in bringing the Vietnam War to a halt on terms that are acceptable if not ideal raises questions of policy that cannot be ignored in the future. The tendency today is to say: "No more Vietnams"—as we once said, "No more Koreas." One would be hard put to make a case for more limited wars following the Vietnam pattern. But for the United States categorically to forswear future participation in any war that may not directly and immediately threaten our territory and our people would be an open invitation to blackmail, aggression, and ultimate confrontation. We cannot possibly foresee the alternatives to involvement in situations that don't even exist today.

An unfortunate accident of history involved the US in Vietnam at a time when the theory of "gradualism"—an ostensibly surgically precise application of military power to make the enemy stop what he was doing—was the current enthusiasm of the theorists who then were managing the Department of Defense. At the same time, most—though not all—professional military men held that "the best war is a short war." In other words, if you're going to fight, don't give the enemy a chance to disperse his logistic systems, stockpile war materiel, build up his defenses, enlarge his armies, and expand his propaganda base. Admittedly, there were military leaders in high places who chose to ignore—even oppose—this view.

In any case, this fundamental issue was resolved in favor of the theorists, who underestimated the enemy's determination and resilience and grossly overestimated the willingness of the American people and the ability of the economy to support a long and open-ended war. The compound result of error, self-deception, and political manipulation was the longest and second most expensive war in our history, with 46,000 Americans killed in combat, more than 300,000 wounded, and an astronomical price exacted in national

treasure. The side effects, in terms of national divisiveness, are yet to be reckoned with.

Any objective evaluation of the effectiveness of airpower since April 1972 leaves little doubt that the military professionals who opposed gradualism were right, as we have long maintained. In March 1968, the Air Force Association Statement of Policy urged the Administration to adopt a strategy based on "an end to sanctuaries in North Vietnam. The denial of seaborne imports to North Vietnam by appropriate application of air and naval power." That is a quite accurate description of the strategy adopted four years later by the Nixon Administration.

If the 1972 strategy—an air strategy involving no US ground troops—had been followed in 1964 or 1965, a favorable decision might well have been reached in from six months to a year, and the US combat casualty list shortened by at least an order of magnitude.

The lives and dollars needlessly expended in Vietnam are only part of the price paid for failure to use airpower properly from the beginning. How different the course of events in this country might have been had this been done.

As was pointed out in the July 1969 issue of this magazine:

The basic lack of candor about Vietnam, masked primarily by the prestigious public image of Mr. McNamara as the world's greatest manager, lies at the root of almost every major problem the US is currently concerned with. Half of the \$80 billion defense budget the military-industry complex is blamed for is attributable to Vietnam. The desperate fiscal gamble involved in waging the war on a business-as-usual basis, with no restraints on the economy, has fed the flames of inflation. In turn, inflation has eroded the purchasing power of both the government and the private economy.

Defense programs and social programs cost more and hence are more competitive for the tax dollar, exacerbating a conflict in priorities which need not ever have developed. . . . Relations with our allies, particularly in Western Europe, have been strained nearly to the point of rupture at times. The inequities of the draft, especially to feed the needs of a war so open to just criticism, have swelled the ranks of the peace movement, provided a focus for campus dissent, and further complicated the economic and social unrest in the nation.

Some of the unrest—especially that on campus—is now behind us, but the damage to the prestige of the military—who have taken most of the blame for decisions they neither made

nor recommended—will not soon be repaired. That can have serious consequences as we turn from the draft to an all-volunteer force. To further complicate the military recruitment problem, reliance on draftees to do most of the fighting in Vietnam, in lieu of calling up the Reserve Forces, put the Reserve and National Guard in the unfairly embarrassing position of looking like a haven for draft dodgers. That stigma, only partially erased by the mobilization of some units at the time of the *Pueblo* incident, is slow to disappear.

The achievements of airpower during the last nine months of the war should sharpen the hindsight of policy-makers, armchair strategists, and the American public. Nor need one apologize for hindsight. It is, after all, the stuff of which foresight is made.

The great lesson of Vietnam is clear. Any future US military involvement in limited wars should be based on the early and proper use of airpower, with the defended allies providing the bulk or all of the ground forces. Only in that way can US capabilities be kept in balance with national objectives at a cost we can afford. If such a strategy had been followed in 1964, the US could have had both victory in Southeast Asia and the Great Society at home without inflation and for a fraction of what Vietnam has cost in blood and treasure.

Despite the fact that airpower was misused consistently until very late in the game, its earlier achievements even under desperately tight restraints must not be overlooked—its tactical employment to save Khe Sanh and many other beleaguered outposts, the heroism of tactical aircrews during the Rolling Thunder operations in the North prior to 1968, the mobility it provided both tactically and strategically, the unparalleled professionalism of SAC's bomber and tanker crews, the dedication of thousands of USAF support people who kept the planes flying.

During most of the eight years of large-scale Air Force participation in the war, airpower was used in ways that no airman would have chosen—often in ways that subjected crews to high and unnecessary risks for small gain. Over those difficult years, only four Air Force crew members refused to fly combat missions. That says it all.

The way the Vietnam War was managed from the top during most of its long, dreary, disheartening course provides little satisfaction for Americans. We can look with pride at the performance of those who served in Southeast Asia. But the price they paid was inordinately high, and a repetition of it would be shameful. ■

MIRV

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BELL AEROSPACE

Division of **textron** Buffalo, New York

Retirement Program

Gentlemen: Re Maj. Robert Hunter's excellent article on the proposed new military retirement plan ["What's in Prospect for Military Retirement," December '72 issue], I personally found [it] to be most informative and helpful in understanding the new system. I'm sure the merits of the program will be thoroughly debated by Congress, as well as by the respective military services, before finally being enacted.

I would like to express my thanks to Major Hunter, the AIR FORCE Magazine staff, and DoD for their efforts to publicize and explain the program. All too often in the past, a new program is seemingly "kept under wraps," ostensibly to prevent premature judgments and false rumors from starting (but somehow they always manage to start anyway). Without the facts, misinformation usually spreads rapidly, resulting in considerably more effort being expended later by DoD trying to stamp out the rumors and smooth the ruffled feathers of servicemen who were incorrectly informed to begin with.

Any new program that comes close to the serviceman's pocketbook will undoubtedly strike a sensitive nerve in each individual, and, therefore, I wish to thank DoD for its foresight in bringing the new program out into the open before the rumor mill has a chance to start.

Write on.

CAPT. ROBERT E. DANT
APO Seattle

Gentlemen: Maj. Robert Hunter's analysis of upcoming changes to retirement policies ends with an admonition to those on active duty to "keep . . . your minds open." This seems less than fair to your readers who, if they are to heed such an admonition, deserve a more searching analysis—perhaps by individuals not constrained by the limits placed upon commentators on active duty. I raise two problems here.

One assumption by DoD seems

to be that now that active-duty pay scales are "relatively competitive" (presumably this means that active-duty people are paid in accordance with similar pay scales in civil life), retired pay need not be so generous as it supposedly has been. What this leaves out, unfortunately, is that the military career is, constructively speaking, much *shorter* than others. The thirty-year career, for the typical officer, ends just past age fifty, and goes that far only if the officer becomes a permanent colonel—by no means an automatic occurrence.

In Civil Service, or in civil life, few so-called tenured careers end at such an early point, hence salaries could not be fully competitive for military people unless they were granted a form of tax relief similar to that given professional athletes, for example. While the latter are an extreme case, the principle would seem the same.

The second problem is a closely related one. The new policies are designed, obviously, to keep people on active duty until they hit the thirty-year mark, but, because thirty years is a short period, a second career becomes not a luxury, but a necessity. The anomaly is that a second career becomes very difficult by the thirty-year point, with the possible exception of general officers. For many of us now retired, the *preferred* second career would have been impossible by age fifty or later.

By the same token, withholding of retired pay between the time of retirement and what would have been the thirty-year point for a given individual (and that is what it is—withholding) will hit many individuals at precisely the most critical time (children and education). This cannot be glossed over by the misleading promise to pay no new retirees any less than is paid individuals already retired (a promise made possible only by the refusal to recompute retired pay).

Let's face it. For the Army and Air Force (less the case with the Navy), the new system is quite clearly intended *only* to cut retirement costs by discovering a way

to "sock it to" future retirees that is as effective as the refusal to recompute has been for those already retired.

Given the current opinion of the military held by those in Congress and elsewhere, the proposal doubtless will pass, but it should not be construed as a "fair" one, or as anything but what it is. Fairness would require either the institution of a "tax break," mentioned above, or the granting of a *right* to the individual (at all ranks) to extend his active-duty career to at least forty years.

COL. FREDERICK C. THAYER,
USAF (RET.)
Pittsburgh, Pa.

B-52 Survival

Gentlemen: Thank you for your letter concerning my membership, which had lapsed. Due to several TDYs and other distracting events, I simply overlooked the letter in my in-basket. I hope that you can be sure that I receive the December '72 issue since it is the one that includes the feature on the strategic balance. I would like to express my appreciation for providing us this outstanding summary of military forces.

While I am writing, I would like to [refer back to] the editorial by John L. Frisbee in the June 1972 issue. Mr. Frisbee said, in part, ". . . any doubt about the ability of manned bombers to survive in an enemy defense environment dominated by surface-to-air missiles has been removed." Unfortunately, the events of past weeks have caused some serious doubts concerning our ability to survive in that environment. I don't point out this quote to embarrass Mr. Frisbee, but to point to a more serious problem.

Both in tactical and strategic weapons, we are further behind the Soviets than many would like to openly admit. I would hope that in the years ahead, AIR FORCE Magazine will lead the fight to keep our defense budget from being cut to the bone. Otherwise, those of us who are in the cockpit will have even less chance against a future

enemy with advanced weapons than the B-52s had over Hanoi.

Thank you again for your contribution to the public understanding of our Air Force mission and defense requirements.

MAJ. RAYMOND B. TUCKER
APO New York

• In his February editorial, *Executive Editor Frisbee pointed out that the loss rate of B-52s during Linebacker II—the bombing offensive against North Vietnam during December 1972—was slightly more than two percent. Although we do not intend to minimize the hazards faced by our bomber crews, a ninety-eight percent penetration rate does seem to indicate that USAF's manned bombers can survive in a SAM environment and do their job. We concur wholeheartedly with Major Tucker's plea for forces that are both modern and adequate in numbers. AFA will continue to fight for defense budgets that can provide those forces and that will reduce to the lowest level possible the risks faced by our combat crews.*—THE EDITORS

Ex-Members, 448th Bomb Group

Gentlemen: I am looking for addresses of anyone who was stationed at Seething, England, during World War II. If you were connected in any way with the 448th Bomb Group (H) as mechanic, flying crew member, ordnance, armament, medical detachments, subdepot repair, or whatever, please send me your name and address. I would also like to get a little personal information from each of you.

If you have any addresses of still other old members, send them along, too. If I can get enough people together, maybe we can have a long-overdue reunion.

KENNETH W. ENGELBRECHT
204 South Archie Ave., Box 1004
Granville, Ill. 61326

Historical Collection

Gentlemen: I am working to complete a collection of Army Air Force, Army Air Corps, and Air Force historical items and memorabilia, and am particularly interested in World War I and World War II flying insignia and squadron badges. Also in wings—pilots, bombardiers, navigators, observers, gunners, crew members, etc.—from the period between the World Wars and since World War II.

Perhaps readers have such items and no longer need them. Donations are indeed welcome, due to limited funds, but if purchase is necessary please advise as to availability and price.

HISTORIAN
Gen. Billy Mitchell Chapter #247
Air Force Association
16565 Ridge View Dr.
Brookfield, Wis. 53005

Restored P-47N

Gentlemen: Several years ago you kindly printed my letter of appeal to anyone with information as to parts and technical manuals that could assist the Puerto Rico Air



A member of Puerto Rico's ANG flies restored P-47N along with an F-104.

National Guard in restoring a P-47N to its WW II condition.

I am especially pleased to send a photograph of the results of our efforts, flying formation with one of our F-104s. The project was completed as part of our Twenty-fifth Anniversary celebrations, and we will gladly share our pride with any USAF unit that wishes to have on static display the only airworthy P-47N in existence.

MAJ. GABRIEL I. PENAGARICANO
Chief of Safety
Hq. 156th Tac Fighter Group
(PRANG)
Muniz ANG Base, Puerto Rico

WAF Research

Gentlemen: For a research project at the Ohio State University, I would like to hear from women who have served or are serving in the Air Force. I am particularly interested in the time period 1946 until 1958.

In addition to hearing from the women themselves, I would like also to hear from the men who served with them and their opinions, anecdotes, etc.

In compiling a history of women in the Air Force, I need stories of experiences, job descriptions, and attitudes toward personal service. Any pictures that would not have to be returned would be appreciated too.

J. C. WOELLNER
1445 Neil Ave., Apt. 3
Columbus, Ohio 43201

First Ace—Again

Gentlemen: Reference page 10, "Airmail," of the December '72 issue and who was America's first World War II ace.

Well, here we go again!

The first American ace, wearing

the uniform of our country and flying an American-built plane (Curtiss P-40E) was Lt. Boyd D. "Buzz" Wagner, at the time commander of the 17th Pursuit Squadron, stationed at Nichols Field, outside of Manila, P. I., and operating out of both its home base and Clark Field.

In less than two weeks following the Pearl Harbor attack, Buzz Wagner became the first American ace of World War II.

In one attack at Aparri, in Northern Luzon, he was attacked by five Japanese fighters, and shot down two of the enemy aircraft. Although his P-40 had sustained damage, Wagner continued to strafe twelve Japanese aircraft on the ground, leaving five in flames.

On December 22, during the Japanese invasion of Luzon, Wagner and a handful of P-40s attacked the enemy's main armada of eighty-five transports in Northern Lingayen Gulf. Braving intense Japanese gunfire, the P-40s continued their strafing runs until attacked by a skyful of Zeros. Lieutenant Wagner was knocked out of

Airmail

action when a shell hit his windscreen, putting a glass splinter in his eye. Thus ended his flying career in the Philippines.

He was evacuated to Australia along with other planeless pilots.

In October 1942, at the age of twenty-five, he became the youngest lieutenant colonel in the United States Army. He was awarded the Distinguished Service Cross and officially credited with eight victories, five of them on two flights, plus twelve destroyed on the ground for a total of twenty Japanese planes to his credit.

In the early months following America's entry into WW II, every story told of another Allied defeat and retreat. America needed heroes and found them in Capt. Colin Kelly and Generals MacArthur and Wainwright.

But to those of us in the Philippines in those early dark days, as we lost one irreplaceable plane after another and we were being driven further back into Bataan peninsula, our heroes were Buzz Wagner, Ed Dyess, Grant Mahony, H. T. Wheless, and "Rosie" O'Donnell. Each man's exploits is a complete story in itself.

This letter is in no way meant to lessen the respect that William R. Dunn and Cyril D. Palmer deserve for their heroic deeds.

S. SAMUEL BOGHOSIAN
Fresno, Calif.

• *We seem to get into a semantic thicket when referring to the first American ace of WW II. Readers will no doubt remember that in the box on page 29 of the October '72 issue, Lt. Boyd D. "Buzz" Wagner was credited with being the first USAAF ace of the war, "wearing the uniform of our country and flying an American-built plane." CWO William R. Dunn is credited with becoming the first American ace (on August 27, 1941) while serving with the American Eagle Squadron of the RAF, flying a British plane, and wearing a British uniform.—THE EDITORS*

Fokker Engine

Gentlemen: I am in the process of building a World War I replica

airplane, the Fokker triplane Dr I. But instead of the LeRhône engine, I am looking for a Warner (Scarab) model 165 suffix E or 165A suffix E, or both of the above without suffix E.

I was told that the Air Force and the Naval Air Service used these engines during and after World War II, and that they might still have some of these engines around.

I would like to hear from anyone who can tell me where it might be possible to purchase one of these engines.

William A. Winter
445 West Terrace St.
Villa Park, Ill. 60181

UNIT REUNIONS

American Eagle Squadron Assn.

The reunion of the American Eagle Squadron Association will be held in Harlingen, Tex., March 30 through April 1, 1973. For information contact

Bob Reed
Box 177
Plainview, Tex. 79072
or

Glenn Bercot
Confederate Air Force
Rebel Field
Harlingen, Tex. 78550

Jolly Greens

The Jolly Greens are planning a reunion April 13-15, at the Ramada Inn, Fort Walton Beach, Fla. If you do not receive official notification by March 15, please contact

Lt. Col. Frank Catlin
117-B Birch Circle
Eglin AFB, Fla. 32542
Phone: (904) 651-4156

PAAF

I would like to hear from anyone stationed at Pampa, Tex., during World War II, with a view to getting together for a reunion.

Joe Marshburn
P. O. Drawer 1734
Atlanta, Ga. 30301

2d Air Division Association

The 2d Air Division Association will be holding its 26th annual reunion at the Antlers Hotel in Colorado Springs, Colo., July 18-21. The 2d Air Division was made up of the 44th, 93d, 389th, 392d, 445th, 446th, 448th, 453d, 458th, 466th, 467th, 489th, 491st, and 492d Bomb Groups; the 4th, 56th, and 355th Fighter Groups; and the 361st and 479th Scouting Force/Fighter Groups. Anyone attached to these outfits is welcome. Please contact

William G. Robertie, Pres.
2d Air Division Association
P. O. Drawer B
Ipswich, Mass. 01938

17th Repair Depot Sqdn.

Anyone who was with the 17th Repair Depot Squadron, WW II, or anyone knowing of any reunions of this group please contact

Lee F. Paynter
Box 96
Otis, Kan. 67565

20th SOS

The annual reunion of the 20th SOS, Green Hornets, will be held May 4-5, at the Green Oaks Inn, Fort Worth, Tex. FACs who worked with the 20th are welcome. Contact

Hornet Lead
1550th ATTW (LGMQF)
Hill AFB, Utah 84406

or call
Major Moore
(801) 824-1301

or
Captain Cullers
(801) 824-1310

388th Bomb Group (H)

The 1973 reunion of the 388th Bomb Group (H) Association will be held at the Fontainebleau Motor Hotel in New Orleans, La., August 2-5. Send name and address to

Edward J. Huntzinger
863 Maple St.
Perrysburg, Ohio 43551

444th Bomb Group (VH)

For the past several years former members of the 468th Bomb Wing (VH) have held yearly reunions, with the majority of the members bringing their families. Last year the scope of the reunions was enlarged to include all former 58th Bomb Wing and 20th Air Force personnel. This year's reunion is planned during the summer in Dayton, Ohio, home of the Air Force Museum. If interested please write either

Nathan Patland
6545 N. 19th Ave.—B-28
Phoenix, Ariz, 85015

or
Col. Dale A. Bozman
200 Avenue C West
Barksdale AFB, La. 71110

447th Subdepot, 351st Bomb Group

The 9th annual reunion of former members of the 447th Subdepot, 351st Bomb Group, WW II, will be held July 19-22 at the Island Inn Motor Hotel, Westbury, Long Island, N. Y. For further information contact

F. H. Larson
P. O. Box 1
Yalaha, Fla. 32797

702d TEFTS

Tentative plans are under way for a 30-year reunion of the 702d Twin Engine Flying Training Squadron, Blytheville, Ark., WW II, in August, at Louisville, Ky. Former members who are interested should write

George F. Kirby, Sr.
13325 Forge Circle
Valley Station, Ky. 40272



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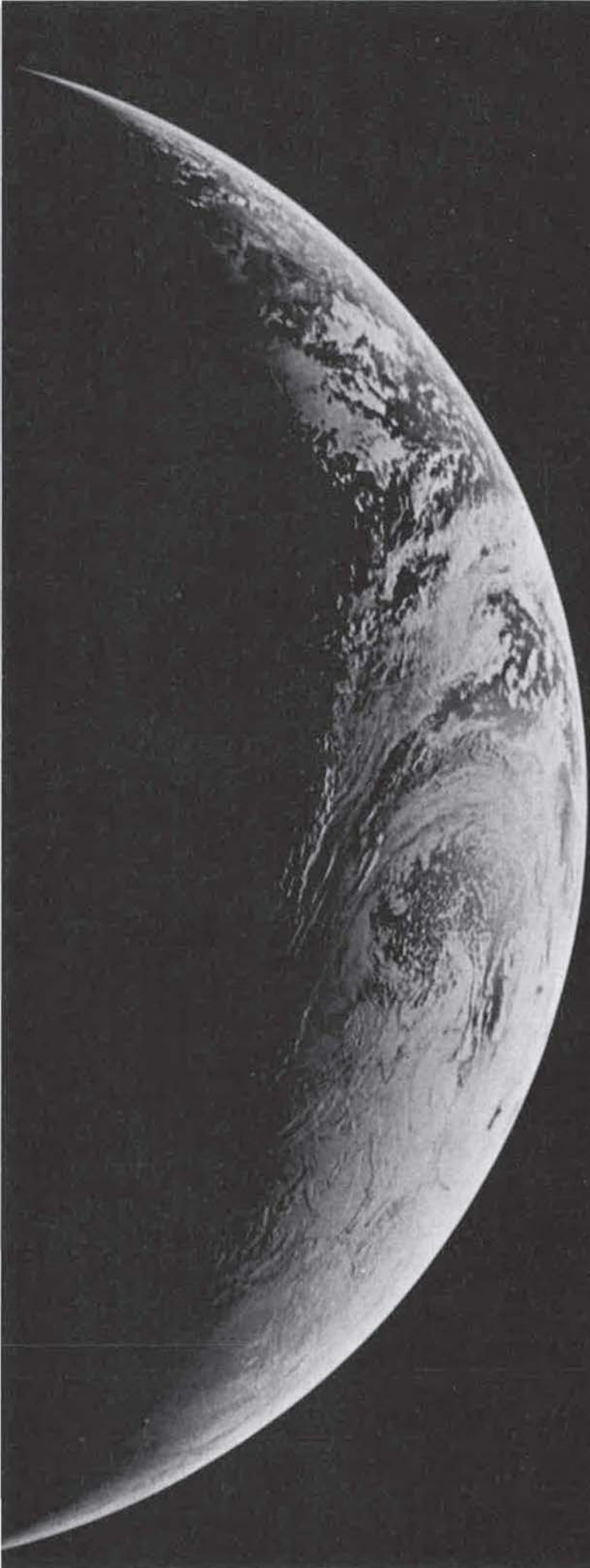
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Airpower in the News

By Claude Witze

SENIOR EDITOR, AIR FORCE MAGAZINE

Congress, Too, Must Shift Gears

WASHINGTON, D. C., FEBRUARY 2

President Nixon sent the Fiscal 1974 proposed budget to Capitol Hill early this week. Even before it got there, so experienced a Senator as Majority Leader Mike Mansfield opened fire with an attack on military spending. It is at least one of the issues on which his man, George McGovern, lost the election. The President has other changes in mind, and he told Congress that the increase in government claims on the taxpayers in the past couple of decades—up from fourteen percent to twenty-five percent of the Gross National Product—was not due to defense programs. Also, that his spending plan is “clear evidence of the kind of change in direction demanded by the great majority of the American people.” That makes it clear Mr. Nixon believes the people are behind him, and he is using the election results to justify a bold stand against big government, big programs, big taxes, and proliferating bureaucrats. If he is defying Congress, he appears to want them to prove he is wrong.

At a Pentagon budget briefing for the press, Robert C. Moot, who has just resigned as Comptroller of the Defense Department, had another bit of arithmetic. He had calculated the trend in outlay for both research and development and procurement, which is the bull's-eye area for the McGovern camp in Congress. Mr.

Moot calculates that the increase in these two accounts since 1964 is twenty-five percent. In that time, the total defense budget went up fifty-five percent. The total federal budget went up 118 percent. “So,” concluded Mr. Moot, “for the last ten years that portion of the defense budget which has increased the smallest amount is our weapons development and acquisition area.” It is a statement that should be pasted in some hats.

Mr. Moot added words that are of major interest to defense industry. He said funding for R&D and procurement will remain fairly constant over the next five years. Here, the industry has a firm reason to applaud any efforts to diminish the rate of inflation. Higher price levels, due to inflation, will endanger production levels. Management and union leadership should take notice.

Highlights from the Fiscal 1974 defense budget are:

- Total obligational authority is \$85 billion, up \$4.1 billion over Fiscal 1973. The increase will provide pay raises, ordered by Congress, and the inevitable toll of inflation in the price of goods and services.
- Total outlays are set at \$79 billion. This is 28.4 percent of total federal outlays, down from a peak of 42.5 percent in FY '68. It is the lowest level since FY '50, by this measure.
- Defense will take six percent of the Gross National Product. That is a twenty-four-year low.

Comparison of DoD Budgets for FY '73 and FY '74 By Military Programs (BILLIONS OF CURRENT \$)

MILITARY PROGRAM	TOTAL OBLIGATIONAL AUTHORITY	
	FY '73	FY '74
Strategic Forces	\$ 7.4	\$ 7.4
General Purpose Forces	25.7	26.4
Intelligence & Communications	5.7	6.0
Airlift & Sealift	.9	.8
Guard & Reserve Forces	4.0	4.4
Research & Development	6.5	7.4
Central Supply & Maintenance	8.7	8.4
Training, Medical, & General Personnel Activities	16.4	18.2
Administration	1.7	1.7
Support of Other Nations	3.9	4.2
TOTAL	\$80.9	\$85.0

Although there is no change in total funds requested for strategic forces, funding for Navy's Trident ballistic missile system is up nearly \$1 billion at the expense of other services' strategic systems.

Comparison of DoD Budgets for FY '73 and FY '74 By Appropriation Title (BILLIONS OF CURRENT \$)

APPROPRIATION TITLE	TOTAL OBLIGATIONAL AUTHORITY	
	FY '73	FY '74
Military Personnel	\$23.8	\$24.7
Retired Pay	4.4	5.3
Operation & Maintenance	22.3	23.1
Procurement	18.6	18.8
RDT&E	8.1	8.7
Military Construction	1.6	1.9
Family Housing	1.0	1.2
Civil Defense	.1	.1
Military Assistance	1.0	1.3
TOTAL	\$80.9	\$85.0

The largest jump in the FY '74 budget request is for DoD-wide pay increases. Navy leads the other services by a wide margin in procurement funding, while the Air Force gets the largest share of RDT&E funding.

Airpower in the News

• The nation's base-line—or normal peacetime—forces, badly battered by the war in Vietnam, will get increased funding, up about \$1.3 billion. It will go for procurement, R&D, and construction.

• Operating funds will increase. The increase is \$2.6 billion, despite the fact that pay costs alone will amount to \$3.2 billion.

The Navy will continue to get the biggest slice of the budget—\$26.4 billion. USAF is next, with \$24.6 billion, and Army last, with \$21.2 billion.

A further breakdown shows that the total for procurement in DoD will be \$18.8 billion, up from last year's \$18.6 billion. Of this, the Navy will get the most, \$9.4 billion, and then spend more than a third of it on ships. The Air Force is allocated \$6.5 billion and will spend most of it—\$4.5 billion—on aircraft and missiles. This compares with \$4.3 billion last year.

Funding for research, development, test, and evaluation (RDT&E) is fixed at \$8.7 billion. In this case, USAF gets the biggest slice—\$3.2 billion, with \$2.7 billion for the Navy and \$2.1 billion for the Army. USAF will put \$1.2 billion of this into work on aircraft and \$292 million into missiles. Possibly more important is the \$529 million that the Air Force plans to spend on military astronautics. This is up sharply from last year's \$340 million and accounts for most of the \$603 million DoD has earmarked for all astronautics research.

There is an increase, also, in the Military Assistance Program. It is going from \$989 million in FY '73 to \$1.3 billion. This is attributed to the Nixon Doctrine. It is a subject that Congress will examine and debate at length.

DoD Military and Civilian Manpower Reductions: FY '68 to FY '74 (END STRENGTH—IN THOUSANDS)

	FY '68	FY '72	FY '73	FY '74
MILITARY				
Army	1,570	811	825	804
Navy	765	588	574	566
Marine Corps	307	198	197	196
Air Force	905	726	692	666
TOTAL	3,547	2,322	2,288	2,233
CIVILIAN				
Army	462	367	344	346
Navy	419	342	325	325
Air Force	331	280	274	272
Defense Agencies/OSD	75	61	69	70
TOTAL	1,287	1,050	1,012	1,013
TOTAL—Military and Civilian	4,834	3,372	3,300	3,246

While US military forces have shrunk by 1,300,000 men since 1968, inflation and pay increases have increased the total cost of operating the forces.

A summary of the budget by programs shows almost no change in the funding for strategic forces. The figure is \$7.4 billion. However, there are changes. Funding for the Navy's Trident fleet ballistic missile system is up almost a billion dollars. The Army's Safeguard ABM program, Navy's sub-launched Poseidon missile, and USAF's SRAM system have all been cut.

General-purpose forces will get a little more money—\$26.4 billion. Two USAF projects are included in this. One is the F-15 air-superiority fighter. There is funding for seventy-seven aircraft, \$802 million, and another \$117 million for spares. The R&D effort will get about \$230 million. The other is the A-X close-support aircraft, listed for \$142.4 million, most of it

The Wayward Press

The New York Times, we hasten to call to your attention, has said editorially that Henry Kissinger, emerging from an ordeal of negotiation, "deserves the respect and admiration of the country." He is credited, by the Times, with "skill and tenacity" and "perseverance under merciless cross-fire from every direction."

Much of the crossfire, the newspaper did not say in its editorial, came from the press. Back in early January, Dr. Kissinger was a popular whipping boy, an easy subject for a reporter or commentator or columnist to take off on, almost entirely because the pontificators did not know anything about

the subject. In a rejoinder, published by the Times on January 30, a White House spokesman has listed the transgressors. They include Dan Rather of CBS, who reported it as fact that there was a rift between Dr. Kissinger and the President; columnist Joseph Kraft, who said the man abhorred the policy he was executing; and Tom Braden, who predicted that "Kissinger will go." There were others, not worth mention.

It was a sorry performance for journalism, and one that could only serve the cause of Hanói.

* * *

In one of the weirdest press performances of recent days, the Wash-

ington Post has printed a story that took twenty-six inches of column space and then devoted more than a hundred inches to protests, apologies, and explanations, all provoked by the initial article. The subject was military pay scales. On December 22, reporter George C. Wilson announced that it will cost the American taxpayer \$85,000 a year to keep one career soldier on duty for one year, under present pay scales. This, of course, is not true, but it resulted in a careless headline that said, "Each Career Soldier Costs Taxpayers \$1.7 Million." Wilson's explanation is that military personnel got a 7.2 percent pay raise in 1973

in R&D. In addition, there is provision for twenty-four F-4E tactical fighters, with spares, at a cost of nearly \$100 million. A major item in this category is the Navy's CVN-70 nuclear carrier, down for \$657 million.

Weapon systems listed only in R&D are topped by the Air Force's R-1 supersonic bomber. It is worth quoting the figures for three years. In FY '72 it was \$370 million. This went to \$445 million in FY '73 and will get \$474 million in FY '74. There is no request for procurement funds; it is a subject that faces debate in another year.

A topic more likely to stir controversy this year is the provision to allocate \$170 million to an advanced ABM system called Site Defense. It will be designed to protect USAF's Minuteman missile, "if required." There remain people on Capitol Hill who consider the idea provocative. Much depends on the outcome of the arms-limitation talks with Russia.

A related subject is the Army's Safeguard ABM system, already affected by the first round of SALT agreements. The FY '74 budget reflects a big cut in funding. The total is down to \$402 million, and that is earmarked for work only on defense for the Minuteman silos at Grand Forks, N. D. The US is permitted, under SALT, to protect Washington, D. C., with Safeguard. There appears to be no intention to do so.

Other items of interest to USAF are:

- **E-3A Airborne Warning and Control System (AWACS).** The budget provides \$210 million, up from \$194 million last year. Only about \$12 million of this is listed as procurement, for long lead-time items.

- **Advanced Airborne National Command Post (AABNCP).** There is a cut, from \$117 million in FY '73 to \$83 million in FY '74.

- **C-130 tactical transport.** There is provision for the purchase of thirty-six airplanes at a cost, with spares, of \$192 million. This is about twice the FY '73 total, when there was provision for twenty aircraft.

- **Minuteman III.** This is the advanced missile with multiple warheads. The budget seeks \$768 million, most of it for procurement. No quantity figures are given.

- **SRAM, the air-launched attack missile for the B-52 and FB-111.** Funding continues to decline, down to \$139 million, all of it for procurement.

- **Maverick AGM-65A.** Inventory of this air-to-surface missile will increase. There is \$112 million for procurement, up from \$79 million last year.

- **Advanced Medium STOL Transport (AMST).** This aircraft is a possible future replacement for the C-130. The allocation for R&D has been increased from \$25 million last year to \$67 million.

- **C-5A high-capacity transport.** The procurement funds will strike a new low of \$43 million. In Fiscal 1973 the figure was about \$108 million, and it was \$322 million in Fiscal 1972.

As usual, the Pentagon press briefing brought many questions about the cost of the war in Vietnam. The cease-fire was only hours away, and, for the first time, Mr. Moot provided figures for the next fiscal year. The Pentagon divides the cost of the war into two parts. One is the burden of base-line forces, those that would be spending money even in time of peace. Then there is the additional cost of fighting in Southeast Asia.

Here is the DoD breakdown for four years. The figures are in billions of dollars:

	FY '68	FY '72	FY '73	FY '74
Base-line Forces	56.3	70.7	74.7	82.1
Additional for SEA . .	19.3	7.0	6.2	2.9
TOTAL	75.6	77.7	80.9	85.0

The base-line forces in FY '68 were larger than those of FY '74, by more than a million men. They did not collect pay at the 1974 scale. It is the wage increase voted by Congress, plus the inflation factor, that accounts for the increased cost of base-line forces.

There may be several messages in this table, but Congress can read an important one by repricing the FY '68 expense for base-line forces in terms of 1974 dollars. The military establishment that cost \$56.3 billion in 1968 would cost \$84.4 billion in 1974. This is not the result of military waste. It is a fact of economic life. ■

and "Congress has shown no disposition to call off the annual march of government pay raises." Mr. Wilson asked a statistician to figure out what the result would be if military pay went up 7.2 percent each year from now on. The answer was that today's private could be a master sergeant at \$37,000 a year in twenty years. Then, he could retire and collect almost \$1.4 million in retirement pay.

The reaction to this pipe dream, we are told, shook the Post to its foundations, and those foundations are held solidly in place by an immense press room, where the newspapers are printed. In haste, on December 23, there was a "clarification" in the paper, followed on January 27 by Wilson's own apologia, pleading that he only meant to point out that if present trends continue, the Pentagon's payroll problem will get worse. Of course, if the entire economy inflates at the rate of 7.2 percent each

year, the picture will be different and that is something Wilson did not discuss, or even mention.

We have no idea how many editors, beside those at the Post, let this thing go through the copy desk without challenge. The Post's news service sent it out on the wires, and this department has been receiving urgent and blazing correspondence from as far away as Honolulu, where it appeared in the Advertiser. An Air Force major at CINCPAC calls it "slipshod or intentionally biased journalism." And, "the partial truth can be untruthful," he says, in this case because Wilson did not identify boosts in government pay as being triggered by raises outside of government, such as those won by newspapermen from their publishers.

An important by-product to this incident grows out of the fact, demonstrated in this column on other occasions, that some radio and TV com-

mentators tend to pick up bad information from the printed media and use it without exercising editorial judgment. Chet Huntley, once a star on NBC television, now does a radio feature that is circulated on tape to a number of small stations around the country. He found the Wilson story, accepted it as fact, and broadcast the alarm. In the capital area, it was heard on station WAVA on the morning of January 11. That was more than two weeks after the Post printed the article and the "clarification." A spokesman at WAVA, contacted by this reporter, was reluctant to discuss the matter. He did say he knew the Huntley broadcast was in error and indicated WAVA puts such tapes on the air without listening to them or exercising any editorial control over what they contain.

All this demonstrates that we have Freedom of the Press and that it is uninhibited, as it should be.

By William P. Schlitz

ASSISTANT MANAGING EDITOR, AIR FORCE MAGAZINE

WASHINGTON, D. C., FEB. 5

The US has organized its disengagement from the conflict in Southeast Asia into three large-scale operations. One, dubbed "Homecoming," relates to the release and repatriation of American POWs (see p. 27 for details).

The second, known as "Count Down," concerns the withdrawal of some 23,000 Americans and several thousand South Koreans still in South Vietnam. All will be airlifted out, with roughly half of the Americans leaving during the first thirty days following the signing of the cease-fire (on January 27) and the remainder in the second thirty days.

While much equipment has been turned over to the South Vietnamese (see below) under the Vietnamization program, there is still much that must be removed, under the cease-fire agreement. Then, again, there is plenty of sophisticated and expensive electronics and other gear that can't be left behind. All this materiel—an estimated 40,000 short tons—will come out by sealift, Defense Department officials said. All bases have been taken over by the South Vietnamese.

The third operation is called "End Sweep." A treaty protocol requires the removal of all mines

along the North Vietnamese coast, harbors, and inland waterways. This operation will kick off with a meeting of American and North

Vietnamese officials to determine how best to conduct what DoD planners consider "one of the most delicate, sensitive, and deliberate



Included in the force that will be responsible for clearing North Vietnamese waters of mines will be US Navy vessels such as the amphibious assault ship USS Inchon, pictured here. A cease-fire protocol requires US assistance in the operation (see text).



A novel use of the helicopter, in this case a CH-53A Sea Stallion, was pioneered by the US Navy in mine-clearing activities. Now these techniques will find an operational use off the coast of North Vietnam, in an action unprecedented in history.



Conventional minesweepers such as the USS Energy, pictured here with mine-sweep gear deployed, are also part of a fleet engaged in "End Sweep," an operation described as "one of the most delicate, sensitive, and deliberate in history."

operations in history." The US Navy will contribute a fleet of ships and helicopters, already in the assembly stage (see photos).

Although many doubts and anxieties remain, with a lasting peace far from certain, End Sweep—a cooperative US/North Vietnamese venture—might mark the first step toward stability in an area of the world stricken by war as long as we can remember.



From all accounts, the South Vietnamese are burdened with a military-equipment maintenance problem of overwhelming proportions. This is especially true for the hundreds of relatively sophisticated aircraft turned over to them in recent months.

While technical training under Vietnamization established a nucleus of pilots and ground crews skilled in coping with complex aircraft, the South Vietnamese claim with justification that they have nowhere near the number of experienced men they need.

Complicating the maintenance problem, too, has been the massive infusion of materiel that was pumped into the logistic pipeline once it became evident last fall that a cease-fire, with subsequent withdrawal of remaining US forces, was a strong probability.

To partially fill the maintenance and logistics gap, a large number of US civilian technicians has been hired and assigned to air bases in South Vietnam. There, they are teaching maintenance classes, as well as repairing and assembling aircraft. US civilians reportedly are training transport pilots as well.

Among the new equipment received are 200 F-5 Freedom Fighters and nearly 100 A-37s. These light, small aircraft are easier to maintain than, say, the F-4 Phantom, which is crammed with complicated radar and other gear.

As the Vietnamese Air Force now stands, it has about 50,000 men and as many as 1,200 aircraft, an incredible growth from the 16,000-man force and 400 aircraft of 1967. Even so, the VNAF has a long way to go before it can fully utilize its recently expanded airpower—if it has to.



In mid-January, the Air Force decided on Fairchild Industries, of Germantown, Md., to conduct full-



Fairchild Industries' A-10A, the aircraft selected by USAF to fill a close-support role in the future (see item). The A-10A is designed to carry a variety of ordnance, and the production model, if approved, will mount a 30-mm cannon in the nose.

scale development of the A-X aircraft, the first plane in history to be designed specifically for the close support of ground troops.

Fairchild's version, the A-10A, won out in a competitive flight evaluation with Northrop Corp.'s A-9.

Fairchild will now build ten pre-production aircraft for further flight-testing before a decision—not expected until 1975—is made on full production. General Electric Co. will supply TF34 engines for the ten aircraft. The A-10 will be powered by two engines, each with 9,275 pounds of thrust.

Another factor that will have a bearing on any decision to initiate full production will be the outcome of a demonstration of the aircraft's proposed GAU-8A 30-mm gun system.

If the go-ahead on full produc-

tion is given, Fairchild optimistically estimates that the A-10A program has "a potential value of approximately \$1 billion and some 600 aircraft," with a good chance of high-volume sales to allied air forces because of the plane's "excellent maneuverability and large load-carrying capability at low cost."

News media speculation that the A-7 attack aircraft, built by Ling Temco Vought, Dallas, Tex., represents a potential competitor for the A-10 was rejected by Lt. Gen. James T. Stewart, Commander of AFSC's Aeronautical Systems Division. The A-7, operational in both the Navy and Air Force inventories, has seen combat in Southeast Asia as a close-support aircraft.

The A-10A is capable of toting up to 16,000 pounds of ordnance. It has a range of 250 nautical miles

—Official Photograph, The White House



Flanked by his wife and President Nixon, the new Secretary of Defense, Elliot Richardson, is sworn in by Supreme Court Chief Justice Warren Burger on February 2.

Aerospace World

carrying 9,500 pounds of ordnance, with two hours' loiter in the target area. The A-10 has a crew of one and speed of 460 mph.



The US Army plans "a series of major actions designed to modernize, reorient, and streamline" its organization within the continental US.

The Army, in announcing the reorganization, said that while the action's main purpose was improved efficiency, it will result in annual savings of about \$190 million when completed and a total of about \$1 billion over a five-year period.

Highlights that indicate the Army means business include:

- Elimination of the Continental Army Command, the Combat Developments Command, and the Third United States Army.

- Creation of the Forces Command—a single field headquarters to supervise unit training and combat readiness of all Army units, to include the Army Reserve and National Guard.

- Creation of the Training and Doctrine Command, a single field headquarters to direct all Army individual training, education, and the development of organizations, materiel requirements, and doctrine.

- Consolidation of the Munitions Command and the Weapons Command into an Armaments Command.

- Consolidation and realignment of the Army depot system.

- Elimination of major administrative levels between all major Army posts and the Department of the Army.

- Establishing a major active Army organizational framework to improve reserve component readiness.

- Improved weapons development and procurement.

- Elimination of 813 personnel spaces from the Army Pentagon staff.

- Transfer of 1,986 people from headquarters staff to other commands.

- A cut of about 15,000 military and civilian personnel spaces.

The Army promises that the civilian employees affected by the ac-

Mrs. H. H. Arnold, widow of USAF's legendary "Hap" Arnold, unveils the plaque in the corridor of the Pentagon dedicated to his memory. USAF Secretary Seamans and then DoD Secretary Laird look on.



tion will receive benefits under the various DoD and Civil Service programs, and will be given priority consideration for vacancies occurring where they now are employed.

In commenting on the need for the massive reorganization, an Army spokesman cited increased pressure to streamline support forces; increasing people costs; a decision to put greater reliance on the reserve components; and the need for more efficient procurement processes.



The US Navy has selected eight women to enter its flight training program.

"The eight women, four of whom are currently on active duty in the Navy, are to train in a test program established for equal rights and opportunities for women throughout the service," the Navy said.

The four active-duty selectees are to report to the Navy's pilot-train-

ing facility at Pensacola, Fla. The others are currently undergoing training at the Navy Officer Candidate School for Women, Newport, R. I., to receive their commissions prior to flight training. One, Rosemary Merims of San Diego, Calif., nineteen and a graduate of Purdue University, is an accomplished pilot already, having flown since she was sixteen.

The Navy's women pilots will fly helicopters and transports, and, as all women, are barred by law from combat jobs.

For its part, the USAF has no plan as yet to train women as pilots. While it has been the pacesetter among the armed forces in opening up career opportunities to women servicewide, Air Force policy is that all of its pilots must be capable of performing combat operations.



In an economy move and in order to further decrease the US military



Col. Benjamin S. Catlin III, Commander of the Air Reserve Personnel Center, Denver, Colo., with a portrait of his distinguished ancestor, artist George Catlin, at the National Collection of Fine Arts of the Smithsonian Institution in Washington, D. C. Twenty of George Catlin's paintings are currently on display at the Denver Art Museum.



Riding horses need daily care.



The cabins of Farish Memorial Recreation Area are set in a naturalist's dream.

THE LIFE OF RALEIGH

The envy of nature lovers throughout the Air Force is the family of Air Force MSgt. Rollin Raleigh. Sergeant Raleigh is in charge of the Air Force Academy's Farish Memorial Recreation Area high in the Rampart Range of the Rocky Mountains.

The Sergeant's family lives with him in this natural wonderland and helps in the responsibility of caring for the area's more than 600 acres of woodlands and two lakes, the first 120 acres of which were donated to the Air Academy by the Farish family of Houston, Tex., in memory of 1st Lt. William E. Farish.

The area is used as a recreation spot for Academy cadets, and at other times by Academy military personnel and their families.

"To do this job you have to be a carpenter, plumber, motel keeper, clerk, messenger, game ranger, heavy equipment operator, mechanic, and sometimes a chaplain and veterinarian," the Sergeant says. "And this is a family operation. My wife, Joyce, and the children (Roger, eighteen, Rodney, fifteen, and Rhonda, twelve) are able to take care of many things here. I doubt I could do the whole job without them."

Although life at Farish is hectic in the summer and only less so in the other seasons, the Raleighs say they wouldn't trade places with anyone. "It takes the right kind of person to enjoy this place," the Sergeant says, "and, fortunately, the whole family likes it."



The Raleighs, from left: Rodney, Rhonda, Mrs. Raleigh, Roger, and Sergeant Raleigh.

presence in Asia, the US government has decided to cut military personnel in Japan by about ten percent. The plan also calls for the US to relinquish a number of major facilities, including Air Force bases.

Worked out with the Japanese government, which is receiving opposition party flak because of its agreement to finance the bulk of the consolidation, the reduction in US forces is to be accomplished over the next three years.

Among Air Force facilities affected is Fuchu AFB, which currently serves as headquarters for both the Air Force and US forces in Japan. On Fuchu, only a small communications area will be retained, with the command functions probably shifting to Yokota AFB near Tokyo.

Also to be given up will be Tachikawa AFB, famed for its role dur-

ing the Korean War but now largely idle.

The US will give up the airport at Naha on Okinawa as well, though no cutback in personnel is planned. On the island at the end of 1972 were some 16,000 US Marines, with about 5,000 on mainland Japan. These constitute the bulk of US ground forces in the area.



In its continuing effort to better race relations within the service, the Air Force is currently conducting a special education program for all general officers and general officer selectees.

Conducted by two traveling teams, the worldwide program, begun in January, will continue through June 30.

Each two-day seminar conducted by the teams includes fourteen to

sixteen hours of instruction centering on two main areas: Background of the Problem (the nature of prejudice and historical developments) and Effective Management (Air Force and other policies designed to create harmonious race relations).



The record shows that 1972 proved a vintage year for aircrews of the Air Force's Aerospace Rescue and Recovery Service (ARRS).

While attention centered on the drama of rescue operations in Southeast Asia, the majority of the "saves" occurred in other parts of the world.

According to Air Force figures, a total of 1,748 people were rescued from possibly fatal circumstances by ARRS teams. Of these, 301 were downed US aircrewmembers

Aerospace World



Fine-tuning a "plane brain," actually part of the AN/ASN 101 aircraft navigation system built by Honeywell Inc. and recently tested by USAF, is a delicate operation, here performed by Honeywell engineer Wesley Sewell.

in SEA, 101 were SEA saves in other than combat conditions, and 1,346 were rescued in other areas of the world. Of the total, more than 1,270 were civilians, with the bulk of those being foreign nationals.

In 1972, two ARRS units also participated in the embryo Military Assistance for Safety in Traffic (MAST) program, in which military helicopters in the US respond to civilian medical emergencies. The aircrews saved more than fifty lives.

During the year, ARRS teams also engaged in relief operations around the world to bring aid to thousands of victims of natural calamities.

In a related matter, Air Force Communications Service air traffic controllers have been cited for forty-six saves of aircraft in 1972.

In a typical operation, the pilot

of a small plane in New England was hopelessly lost in heavy overcast. Through an equipment malfunction he was without navigation aids or radio. Suddenly, out of the gloom emerged a US Air Force Reserve C-130. AFCS air traffic controllers at Westover AFB, Mass., had picked up the pilot's emergency transmitter signal and had directed the C-130 to his position; both landed safely under the guidance of the air traffic controllers.

Benefiting from the AFCS saves were twenty-seven military and nineteen civilian aircraft estimated to be worth more than \$54.6 million. Aboard were a total of 195 crewmen and passengers.



An interesting question: How can bouncing a laser beam off a satellite help in predicting earthquakes?

Well, a group of technicians working on a project known as SAFE (San Andreas Fault Experiment) hopes to come up with an answer.

The technicians, from the Bendix Field Engineering Corp. working with NASA, have set up shop in California on either side of the San Andreas Fault. The Fault, the cause of major earthquakes in the past, can be relied upon for more of the same in the future, scientists say.

The SAFE people are utilizing a complex system including the laser tracking unit, a stationary satellite, and computers (among other space-age tools) to measure

the movement of the enormous North American and Pacific plates of the Fault. The plates actually are the crust of the earth, moving in a north/south direction in relation to each other. Whenever they give a lurch it means big trouble for California.

Scientists believe that repeated measurements of the minute slippage will "provide important information on the relative movement of the two plates."

The project is to span five years, and "when this residual data is added to the earthquake bank at US Geological Survey and Environmental Protection Administration, it will be useful in constructing a mathematical model for possibly predicting earthquake behavior," a NASA official said.



NEWS NOTES—A world record for flying hours in an F-106 Delta Dart recently was set by Maj. Bronwood "Salty" Harrison, 4756th Combat Crew Training Squadron, Tyndall AFB, Fla., when he logged his 3,000th hour in the Dart.

DoD announced "that the Armed Forces henceforth will depend exclusively on volunteer soldiers, sailors, airmen, and Marines. Use of the draft has ended."

Air Force Materials Lab, Wright-Patterson AFB, Ohio, is developing a nonflammable personnel parachute.

Daniel Z. Henkin, former Assistant Secretary of Defense for Public Affairs, has been named Vice President Public Relations for the Air Transport Association.

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Brig. Gen. Jeanne M. Holm has been promoted to major general, making her the highest ranking woman in the armed forces. Previously Director of Women in the Air Force, she has been named as Director, Secretary of the Air Force Personnel Council. Col. Bil-



When promoted to major general, Jeanne Holm will become the military's highest ranking woman. Here, in an informal moment, she operates her powerboat.

Lie M. Bobbitt succeeds General Holm as Director of the WAF.

Maj. Gen. Leslie W. Bray, Jr., Special Assistant for Vietnamization and Director of Doctrine, Concepts, and Objectives, Deputy Chief of Staff, Plans and Operations, Hq. USAF, has been awarded the 1972 Eugene M. Zuckert Award for outstanding management achievements.

SAC's missile competition for 1973, "Olympic Arena," will be climaxed at Vandenberg AFB, Calif., April 26-May 4, and will include, on May 1 through May 3, a symposium on "The ICBM Challenge" sponsored by the Air Force Association (see also p. 43).

USAF has initiated engineering development of AWACS—a crucial requirement for improved tactical air capabilities in the years ahead—following completion of the brassboard radar demonstration phase. Westinghouse will supply the radar, Boeing four 707-320Bs (down from six aircraft in a cost-cutting move), and Pratt & Whit-

ney will produce four TF33-P-7 engines for each aircraft (instead of the eight General Electric TF34-2 engines previously planned).

The US's first ace of World War

II, CWO William R. Dunn, who flew with an RAF Eagle Squadron, retired from the Air Force at Aerospace Defense Command headquarters in Colorado Springs, Colo., on January 31. ■

Ready Reservists Offered Disaster Preparedness Slots

Trained Reserve Mobilization Designee (MOBDES) personnel will now be able to serve as specialists on the civilian staffs of the civil preparedness agencies in their own communities.

The Civil Defense Military Reserve Mobilization Designees (CD MOBDES) program has been announced by Maj. Gen. Homer I. Lewis, Chief of Air Force Reserve; Maj. Gen. J. Milnor Roberts, Chief of Army Reserve; Lt. Gen. Ormond R. Simpson, Deputy Chief of Staff (Manpower), US Marine Corps; and John E. Davis, Director of the Defense Civil Preparedness Agency (DCPA), formerly the Office of Civil Defense. The program is based on DoD Directive 1215.6, dated June 12, 1971.

For Fiscal Year '73, the Air Force Reserve has authorized 2,932 MOBDES spaces, the Army, 600 spaces, and the Marine Corps, fifty spaces.

The objective of the program is to strengthen the emergency capabilities of civil governments—local, state, and federal—through this augmentation. In a wartime or peacetime disaster period, MOBDES personnel will help the regular staff members carry out their emergency duties; in nonemergency periods they will aid the agency in preparedness planning activities.

Benefits for the CD MOBDES personnel include the opportunity to earn the required point credit for a satisfactory retirement year (minimum of twenty-four on-the-job training sessions required, for points only); training and duty stations within daily commuting distance of their homes; an annual twelve-day training period with pay, spent either on the job at their duty stations or as resident students at the DCPA Staff College, with travel and subsistence paid; and active duty in a wartime mobilization period at the agency, in the specific jobs for which they have been trained. In a peacetime disaster period, a CD MOBDES could be asked by his civil preparedness director to volunteer for active duty in his civil preparedness job, and, if he serves, he would be paid for such duty.

To be assigned as a Civil Defense Mobilization Designee, a member of the Individual Ready Reserve of a participating military service, from the enlisted grade of E-6 through colonel, should have at least two years remaining before his mandatory separation from the Ready Reserve and should live within commuting distance of the civil preparedness agency where he desires to serve. His application for a CD MOBDES post should be submitted to that agency, which, if it approves, will forward it through CD channels to the appropriate military department. If the applicant is considered suitable for civil preparedness work and has the desired military or civilian job skills, he will be assigned to the appropriate DCPA Regional Office and will serve at the agency that requested his services.

A fundamental DCPA policy is that no military structure or organization will be created by the MOBDES system to parallel, duplicate, or supplant existing CD administrative or authority relationships. Once a Reservist is detailed as a CD MOBDES to a civil preparedness agency, his area of activity and responsibility is that local, state, or federal agency.

The 2,932 CD MOBDES positions authorized by the Air Force have been allocated to the DCPA Regional offices that will in turn allot the positions to state and local civil preparedness agencies submitting approved applications. The MOBDES personnel will use their special military and civilian vocation experience and training to serve mainly as specialists in civil preparedness planning, operations, communications, intelligence, transportation, supply, engineering (especially shelter analysis and design), industrial preparedness, and public information; and as instructors in emergency operations, fallout-shelter analysis and design, fallout-shelter management, radiological monitoring, and other subjects.

Comprehensive, detailed instructions and procedures concerning the CD MOBDES program have been furnished by DCPA to its eight Regional offices. They have forwarded the information to participating state civil preparedness agencies, which in turn have passed it on to interested local agencies. If the agency does not have an authorized vacancy available, a slot should be requested through CD channels from the state or region.

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DD963 This is the Navy's new guided missile destroyer. Univac contribution in the program involves a major advancement in real-time data processing. An integrated system, its functions include sensor processing, weapons control, communications and over-all command and decision. Univac has met all program cost targets. And all deliveries, beginning in August, 1971, have been ahead of schedule.

ARTS III The Federal Aviation Administration fostered ARTS (Automated Radar Terminal Systems) to help in the air traffic control problem. With it an air traffic controller's computer-aided display gives more meaningful, easy-to-read information on identity, altitude, speed and range of aircraft. Univac, as prime systems contractor, has been on schedule on all deliveries. Systems planned for future delivery will also be on time, on target.

on time, on target

APOLLO Univac has never been responsible for a count down hold or a slip in schedule on any of NASA's Apollo shots. Thirty-two Univac real time computer systems, 31 antenna positioning computers, and all operational software were delivered on time. This equipment is used in tracking spacecraft in the global tracking and data acquisition network, which supports a variety of space programs. Twenty-three ship and land stations are utilized in processing data for the Goddard Space Flight Tracking and Data Network (STDN).

P-3C Anti-submarine warfare is the concern of this program. The ASW activities of land-based patrol aircraft are automated by a UNIVAC® 1830A digital computer, which is also their "nerve center", providing navigational data and other vital information. Univac has delivered over 100 units since 1966 — ahead of schedule.

And there are more: Univac involvement in Mariner 9, the Poseidon submarine program, the SSN-688 nuclear submarine, and others — good examples of on time, on target performance by Univac. Put this kind of performance to work on your program. Call or write: Vice President of Marketing, Univac Defense Systems Division, Univac Park, St. Paul, Minnesota 55165 (612) 647-4500.



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Airman's Bookshelf

An Analytical Survey

Air Power: A Concise History, by Robin Higham. St. Martin's Press, New York, N. Y., 1972. 282 pages. \$13.95.

Few subjects are as emotionally controversial as the history of airpower. Usually, it is the question of airpower's effectiveness that starts the adrenalin flowing. Now, of course, people debated the relative effectiveness of airpower in Vietnam before the war ended. And the argument about strategic bombing in World War II continues, more than a quarter century after that war's close. One wishes that many of the participants in these intellectual jousts had started with a deeper appreciation of the complexities involved, rather than with the intent of landing the first haymaker.

The special merit of Robin Higham's book lies in his belief that subjects such as war and airpower's effectiveness cannot be discussed in emotion-laden, black-and-white terms. The nuances of airpower must be considered in the context of the evolution of technology and the interplay of domestic politics with foreign affairs. Dramas of human affairs almost never lend themselves to simple explanations. Care and sensitivity are the necessary ingredients for successful treatment. Higham rejects alike the position of extreme air advocates and the contentions of zealous airpower critics. His middle course is welcome and often on target if not always effectively presented.

As the title suggests, this is not a comprehensive, detailed air history, but a shorter analytical survey of the main currents of airpower history from World War I to Vietnam. It emphasizes concepts and tactics rather than the men who made air history. In the narrative, the author includes helpful short summaries of the airpower lessons of major wars, and has added an annotated bibliography.

He notes the significant success achieved by aircraft in the Second World War, when used to support

surface forces. He is not convinced that "grand-strategic" bombing was substantially effective. And "at almost no stage of the war," Higham observes, "was air power alone decisive." The long-run economic effects of urban bombing were the opposite of what had been anticipated: "By destroying German and Japanese urban areas and initially forbidding the defeated nations to rebuild armed forces, the victors forced them to start afresh and concentrate their energies; their very modernization has created economic nations that increasingly challenge the victors. Tactical air power created no such bogeys."

In my judgment, this striking interpretation fails to consider the immediate, urgent goals of the strategic bombing offensives and the severe operational limitations under which they were conducted. Thus it seems to me to be a judgment so juxtaposed as to be badly out of context.

In the postwar years, the author considers the strategic nuclear deterrent a marked success. It "deterred the Communists from overt actions" during Eisenhower's New Look and kept a nuclear war from breaking out in the quarter century since World War II—"The grand-strategic air forces thus became the silent partners of peace. . . ."

Higham generally presents a balanced treatment of airpower in Vietnam. The Johnson Administration had no effective, carefully orchestrated strategic plan, and the gradualism of Rolling Thunder—the pre-1968 strikes against targets in the North—reflected perhaps "too much political science and not enough military realism." Higham tends to disparage B-52 operations: "The 750-pound bombs used created hazards to both health and the economy. . . . And the high cost of such operations, which amounted to air-freighting high explosives over great distances, raised sound arguments for a larger tactical air force operating from local fields." However, based on the available evidence from the American and South Vietnamese side as well as from captured North Vietnamese and Viet

Cong, most air historians of the war would give much higher marks to the B-52s than Higham does. Generals Westmoreland and Abrams have been lavish in their praise of the accomplishments of SAC's B-52s.

This book is a useful survey that should provoke the reader to reach for more specialized works.

—Reviewed by Herman Wolk,
Office of Air Force History.

Toward Military Superiority

Science and Technology As An Instrument of Soviet Policy, by Mose L. Harvey, Leon Gouré, and Vladimir Prokofieff, with Foreword by Ambassador Foy D. Kohler. Center for Advanced International Studies, Univ. of Miami, Fla., 1972. 219 pages with appendices and index. \$4.95 paperback.

"However uneasy we may be about Soviet capabilities for secrecy in action, Americans can have no grounds for complaining that Moscow hides from us its purpose."

That statement was written by Foy D. Kohler, one of the most outstanding Ambassadors the United States ever has sent to the Soviet Union. The former Ambassador to Moscow notes that he does not attempt to differentiate between "the Soviet effort to surpass the US in military prowess and the effort to surpass us in scientific preeminence." The reason is very simple: "I do not believe it possible to separate the two efforts."

These observations alone are sufficient to make the book timely and important. Ambassador Kohler's foreword sets the high standard followed throughout the remainder of the book by its three authors, Leon Gouré, Mose Harvey, and Vladimir Prokofieff—who have been among the most perceptive analysts of the Soviet Union for over a decade.

This group, from the Center for Advanced International Studies,

University of Miami, has presented "what the Soviets themselves say about their plans, their accomplishments, their shortcomings, their efforts to overcome shortcomings, and their expectations of immediate and long-term benefit from their enormous investment in science and technology."

There is a dangerous tendency in the United States to ignore what the Soviets themselves write for the information and indoctrination of their people. As these proven scholars of the Soviet scene recognize, "It has been the experience of those of us who have engaged in preparing this book that in such [Soviet] pronouncements is to be found a reasonably sure guide to actual Soviet purposes in major policy areas."

The book provides a sober warning. The authors estimate that the Soviets for 1972 may have spent 14.4 billion rubles on science and technology, which, insofar as actual buying power in the Soviet defense sector is concerned, might be the equivalent of something over \$30 billion. Thus, in one year, the Soviet Union appears to have spent more on science and technology than "the total cost to the US of the Apollo moon-landing program from its inception in 1961 to the present."

The authors emphasize the main goal of scientific and technological superiority is "related especially to direct military power, and strengthening the armed forces has the first call on all Soviet scientific-technological resources and capabilities." Approximately eighty percent of the total Soviet allocations for scientific research and development goes for military requirements.

Despite its best efforts, the Soviet Union has been unable to solve a "widening technological gap" in favor of the non-Communist world. Sputniks and ICBMs notwithstanding, "the decade of the sixties also saw the Soviet Union falling further behind the U.S. in the general development and utilization of science and technology." In this regard, the authors are speaking of the civilian sector of the Soviet economy, and not the military. With the overriding emphasis on achieving military-technological superiority, combined with traditional Russian secrecy, the Soviet Union simply has not been able to develop a

technological environment that applies to the nation as a whole.

One might conclude that the major reason for the carefully controlled contacts which the Soviet leadership is arranging with the industrial nations of the world is to obtain the science and technology needed for the civilian sector. There is no indication that their emphasis in the defense area will be lessened. That is, there are two "widening technological gaps." One is between the Soviet Union and the other developed nations of the world. The other is between the Soviet defense sector and the technological level of the nation as a whole. While the best of the Soviet scientists and engineers are working on aircraft, missiles, and space, companies from the US, Great Britain, France, Japan, and other nations will build automotive plants and introduce computer technology.

Other students of Soviet affairs who read Soviet publications might have selected in some cases different writings from the Soviet press. However, no one could argue that the writings given are not representative.

Science and Technology As An Instrument of Soviet Policy is believed to be the most perceptive analysis available today of Soviet goals in the vital areas of science and technology.

—Reviewed by Col. William F. Scott, USAF (Ret.). See also page 65.

Dept. of Dirty Tricks, Mark I

OSS—The Secret History of America's First Central Intelligence Agency, by R. Harris Smith. University of California Press, Berkeley, Calif., 1972. 458 pages. \$10.95.

With a shake-up of some sort apparently due at CIA, this new history of the Office of Strategic Services—the predecessor wartime agency—reminds us how this nation first became committed to supporting a "Department of Dirty Tricks." Critics may ask how any country, and particularly one seemingly dedicated to saving the free world, justifies activities by its intelligence-gathering apparatus that are widely interpreted as meddling in the internal affairs of other nations. This fact-packed book indicates how CIA became "a mirror image of OSS" by tracing

the creation and wartime history of the parent agency.

The author, once a CIA research analyst and now a lecturer in political science at the University of California Extension, has chosen a "popular history" approach to what must have been a wealth of detailed information about long-forgotten missions. He has organized his material into chapters covering broad outlines of OSS activity in each successive theater of action as the war developed, illustrating an absorbing story with operational specifics. The result is straightforward history, which nevertheless conveys the climate of wartime espionage in Occupied Europe and the Far East. As Germany faced defeat, the brash young agency sent more of its operatives to the Orient, where they met a chilly reception indeed.

The founding father of OSS was William Joseph Donovan, a Wall Street lawyer whose personality shaped the agency and determined its working methods to a degree which, in many instances, has remained unaltered in CIA. The author makes clear that intervention—often heavy handed—in political affairs of underdeveloped nations became the CIA norm because the agency retained the OSS mandate for political warfare acquired in wartime struggles against fascism.

Another contributing factor was introduced by continuing the OSS "tradition of dissent" among CIA field operatives who, in the author's words, often undertook "arrogant adventures" because they had "developed operational independence from a relatively enlightened staff at CIA headquarters."

Some argue that the cold war necessitated extending the "dirty-tricks" period into post-World War II years and that only later changes in the foreign affairs scene have made such behavior anachronistic, requiring a thorough shake-up of agency attitudes.

A fascinating parade of OSS employees passes through these pages. Some are now famous in other contexts—Arthur Goldberg and Julia Child, for example. There is, of course, the obligatory chapter on Allan Dulles and his well-publicized contacts with enemy representatives seeking surrender. There were blue bloods, intellectuals, political activists,

Airman's Bookshelf

movie actors, crowned heads, corporate magnates, and patriotic nobodies. Most possessed unusual talent, administrative ability, technical know-how, or other outstanding characteristics. OSS attracted able employees as well as unstable thrill seekers. The author tells us where they are now in a spate of footnotes—in some chapters almost one to a page.

To cope with snobbish British intelligence, Donovan staffed the London office with a corps of blue bloods. But in field operations, rifts between OSS and British Special Operations people developed early in the game. Generally, the Americans would back anybody who could get the work done, Communists included. The British, in most cases, sponsored the conservative, rightist element and, if there was one, the deposed monarch.

Successful efforts by the Allies to work out differences and cooperate may have helped to save postwar France from civil war. But in Greece and Yugoslavia, failure to cooperate may have helped escalate conflict between local guerrilla groups.

The passage of time points up other contradictions. Original OSS field recruits were idealistic for the most part, disliking power politics, and, yet, from the time of Operation Torch (the invasion of North Africa) they became increasingly involved in political maneuverings.

Donovan was a "can-do" type who impressed military men, and yet, in crucial days in the Far East, his operatives foundered because of their failure to win over General MacArthur and, at least initially, General Stilwell.

As background for today's headlines, the most intriguing sections deal with events in China and Vietnam as Japan lost her grip and paradoxical Allied policies laid the groundwork for future trouble. Those who survived the events of the time provide rare anecdotes.

One OSS group sent with the French to Hanoi was the first US unit to make contact with Ho Chi Minh. OSS Maj. Frank White re-

calls a chilly dinner with Ho and members of his cabinet, attended by French, Chinese, British, and Americans. Seated last in the only vacant chair, next to Ho, White remembers: "The dinner was a horror. The French confined themselves to the barest minimum of conversation and scarcely spoke to the Chinese. . . ." White, referring to his place at the head of the table observed to Ho, "I think, Mr. President, there is some resentment over the seating arrangement at this table." Ho replied, "Yes, I can see that, but who else could I talk to?"

—Reviewed by Marjorie Ulsamer, Deputy Director, Publications Division, HUD, and a former CIA employee.

New Books in Brief

Artillery, by John Batchelor and Ian Hogg. A unique encyclopedic history of the development of artillery. Contains more than 250 illustrations, many in full color, and complete cutaway drawings. Charles Scribner's Sons, New York, N. Y., 1972. 158 pages with index. \$7.95.

Eminent Americans: Namesakes of the Polaris Submarine Fleet, by H. G. Rickover. Biographies of the distinguished Americans in whose honor the US Navy Polaris nuclear submarines were named. The author has reflected in these biographical essays some of those historical themes that seem to him to have particular relevance for the kinds of problems our nation faces today. Government Printing Office, Washington, D. C. 20402, 1972. 316 pages with index. \$1.25.

Environmental Space Sciences, by Lt. Col. Donald G. Carpenter. In order to understand the space age, one must understand both astronautics (how to move through space) and space science (how to survive in space). This book is intended to help remedy the unavailability of information on the latter. Included is an interesting chapter on "The UFO Mystery." Whitehall Co., Northbrook, Ill., 1972. 719 pages with index. \$10.95.

German Aircraft of the Second World War, by J. R. Smith and Anthony Kay. The development of the German aircraft industry and the rebirth of German military aviation, together with details of

the organizations responsible. The final main section is devoted to the German guided and unguided missiles, including the V-1 flying bomb and the V-2 rockets. There are many detailed general-arrangement drawings and hundreds of photographs. Rowman and Littlefield, Totowa, N. J., 1972. 745 pages with index and appendices. \$28.50.

Instrument Flying, by Richard L. Taylor. Covers the practical side of IFR regulations. The techniques in this book will not be found in the regulations or manuals; they are the result of long experience in IFR flying, which the author contends is "98% common sense and 2% regulations." Macmillan Co., New York, N. Y., 1972. 276 pages with index. \$7.95.

Two recent releases in Macmillan's Color Series are: *Robot Explorers*, by Kenneth Gatland. The USSR's and US's space explorations by robot under remote control. The book also takes an imaginative look at the future of robot explorations on Mars and the outer planets of the solar system. 251 pages. \$4.95.

Bombers in Service: Patrol and Transport Aircraft Since 1960, by Kenneth Munson. This volume covers the leading bombers, patrol, and transport aircraft produced throughout the world since 1960, recording their development and service careers and portraying them by means of accurate general-arrangement illustrations. 155 pages with index. Macmillan, New York, N. Y., 1972. \$3.95.

Policy and Direction: The First Year, by James F. Schnabel. One in a series of the "United States Army in the Korean War." As the author states, "This book is intended to elucidate United States policy during the Korean War and to describe the strategies and command methods by which that policy was carried out." US Government Printing Office, Washington, D. C. 20402, 1972. 443 pages with bibliography and index, plus thirteen pull-out maps. \$8.75.

Two recent releases in Ballantine's Illustrated History of the Violent Century Series are: *Argonne 1918: The AEF in France*, by Barry Gregory; and *Churchill*, by David Mason. Ballantine Books, New York, N. Y., 1972. Each volume 160 pages. \$1.00.

—BY CATHERINE BRATZ



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MIA/POW Action Report

By William P. Schlitz

ASSISTANT MANAGING EDITOR, AIR FORCE MAGAZINE

Operation Homecoming

It was the moment of truth for the families of 1,334 American servicemen carried as missing in action in Southeast Asia. The North Vietnamese, as a condition of the cease-fire signed on January 27, had agreed officially to list their captives, with the men subsequently to be released to US officials in Hanoi in groups of 100 to 150 within sixty days. For most of the MIA families, the hope that sustained them through the months and years of the Southeast Asian fighting would die.

For the fortunate families of the men who would be coming home, it was a time of jubilation, as the Department of Defense bent every effort to reunite the returnees with their families as quickly as possible.

Under Operation Homecoming (known as "Egress Recap" during earlier stages of the planning), the POWs would be airlifted beginning early in February by USAF C-141s and C-9s, especially equipped for the medical-evacuation role, to Clark Field in the Philippines. (Those POWs held captive in South Vietnam would be released in the South at specially designated sites, picked up by helicopter, and evacuated from air bases there.)

It is ironic that after years of ordeal for many of the returnees, the initial flight to safety would take just three short hours, during which those needing it would receive preliminary treatment and checkups by medical teams aboard the aircraft.

After processing at Clark (see January '73 issue, p. 71, for details on procedure), the returnees would

be flown, with a refueling stop in Honolulu, to Travis AFB, Calif. Once in the States, each returnee would be dispersed to one of thirty-one hospitals (operated by the three military departments) nearest his home.

Reunited with his family and receiving whatever medical care is deemed necessary, each returnee will then have the personal option of granting interviews with the news media and making other public appearances. Until then, fanfare is to be purposefully kept at a minimum, since, as a DoD official put it, "Our first obligation is to the men and their families; once they are squared away there will be time for other things."

Defense Department officials indicated a firm resolve to continue efforts to ascertain the fate and whereabouts of those who con-



In a spontaneous reaction, Air Force Lt. Samuel C. Moon, of Greensboro, N. C., launches his helmet as he hears President Nixon announcing the cease-fire and the end of the Vietnam War. Although the remaining US troops in South Vietnam are withdrawing, it remains to be seen how and if US Air Force units in Thailand will continue to be employed.

—Wide World Photos

MIA/POW Action Report

tinued to be listed as missing in action in Indochina. Following return of the POWs, a group of US military personnel will be assigned to establish a base at Nakhon Phanom near the Laos border in Thailand. There, they will organize a Joint Casualty Recovery Center, from which search parties will fan out to attempt to locate the men missing in action. (This operation, officials said, might come under the responsibility of the four-power control group organized to supervise the cease-fire.)

Commenting on the recovery mission, a DoD official said that "we are very much aware of our responsibility to the families of the missing in action and the American people, so we plan to continue the effort to find the men, even if it takes years."

On Behalf of MIA/POWs

Regarding the matter of the missing in action, the League of Families issued a strong statement outlining its plans for the immediate future. Said the League:

"We will be particularly vigilant during the specified period of release and accounting. We will be monitoring the release and accounting procedures at every step along the way. And if there are any missteps, we will be prepared to call them to the immediate attention of both our own country and the rest of the world. But if even one of our men is still unaccounted for at the end of that time, we will redouble our efforts to uncover the facts about [him]."

"Some of the most important work of our organization still lies ahead as we seek a complete accounting of our missing, and as we continue our efforts to assure the most effective possible programs for the rehabilitation and readjustment of returning prisoners and their families, as well as similar programs for families of men who may not return.

"In the aftermath of past wars, the accounting of missing men has not always been satisfactorily re-

solved. We are determined that this will not be the case this time. In the aftermath of other wars, prisoners who have returned have not always received all of the medical attention they have required (particularly on a long-range basis). We are determined that this shall not happen again.

"Many of us have been waiting for five, six, seven, and eight years for word that our husband or son will be coming home. But the war will be over for us only when we are finally reunited."

Following receipt of North Vietnam's "official" list of captives, the League of Families deplored the fact that there was no information at all about fourteen of the men expected to be included. These men were known to be alive on the ground in North Vietnam and presumed captured, or at one time actually identified by the North Vietnamese as being in custody.

Even more shocking was that the list subsequently received from Laos named only seven military personnel and three civilians, far below expectations. The League expressed the hope that a supplemental list would be forthcoming.

* * *

On several occasions, including his announcement of the firming

up of the cease-fire agreement, President Nixon praised the wives, children, and families of the MIA/POWs as "some of the bravest people I have ever met."

The President went on, "When others called on us to settle on any terms, you had the courage to stand for the right kind of peace, so that those who died and those who suffered would not have died and suffered in vain. . . . Nothing means more to me at this moment than the fact that your long vigil is coming to an end."

For its part, the League of Families regards with favor the efforts of the Nixon Administration on behalf of the MIA/POWs. Such was indicated during an NBC television interview with several League members following the announcement of the cease-fire.

Said Mrs. Evelyn Grubb (a past National Coordinator of the League whose MIA husband was not among those subsequently listed for return from captivity): "I think we've been treated very well by the Administrations, particularly the Nixon Administration. He and Dr. Kissinger have always attempted to be honest with us, to be sincere with us. Apparently, hopefully, the promises he made, especially at the last [League] convention, are about to happen." ■



Presidential adviser Dr. Henry Kissinger and Hanoi's Le Duc Tho express satisfaction with progress in Paris during the negotiations that led to the cease-fire in Vietnam and the return of American POWs held in North and South Vietnam. The treaty led to release by Hanoi of a list of 555 American prisoners, far fewer than had been hoped for.

—Wide World Photos



How does SAC use its supersonic FB-111 with "the most capable avionics in the world"? An FB-111 pilot from Plattsburgh AFB, N. Y., tells what the FB will do and how it's done, as he describes a practice low-level attack on targets in Florida in this . . .

FB-111 PILOT REPORT

By Capt.
William R. Liggett,
USAF

The FB-111, latest addition to SAC's bomber force: small, sleek, lethal.

STRATEGIC Air Command's newest aircraft is a medium-range, supersonic bomber—the FB-111A. New enough to lack a nickname, it is simply called the "FB" to distinguish it from the F-111 flown by Tactical Air Command. Both are derived from General Dynamics Corp.'s TFX prototype, and both share the same basic airframe, engines, hydraulic, electrical, and flight-control systems.

The FB's small, sleek profile is a departure from the traditional image of SAC's big multiengine bombers. The FB uses a slightly longer wing and a more powerful engine than the F-111A, its fighter cousin, to achieve the longer range required for its strategic mission. The advanced avionics in the FB-111 include inertial navigation, astrocompass, and Doppler radar sets, all coordinated by a digital computer. The computer complex monitors all electronic functions and allows the crew to concentrate on the mission.

One innovative feature of the FB-111 is its navigation computers, which can be programmed with a particular flight plan. Operated by the navigator, the computer directs the autopilot to steer the aircraft along a predetermined mission path.

The many advantages of the FB-111 include: extremely low radar reflectance, automatic terrain-following radar (TFR), and the exclusive variable-sweep wing. These features, coupled with the airplane's speed and versatility, are the FB's trump cards for getting through sophisticated enemy defenses to attack a target. Advanced electronic countermeasures equipment makes the FB even more formidable.

A two-man flight crew—a pilot and a radar navigator—flies the FB-111. Although the crew seems small for a bomber, advanced avionics and higher performance give the FB a decided edge in survivability and accuracy over earlier bombers. The FB-111 can carry either conventional or nuclear munitions, including the nuclear-armed Short Range Attack Missile (SRAM).

I've been flying the FB since the spring of 1971. The performance of the FB-111 in the air is as impressive as it sounds on paper.

The FB-111 on the Job

How does SAC use this fabulous aircraft? How are the most capable avionics in the world brought into play? These questions can best be answered by describing an actual training flight of three FB-111s from the 380th Bombardment Wing, Plattsburgh AFB, N. Y.

On this three-aircraft mission—a simulated low-level attack on targets in Southern Florida—I am to be the pilot of the third FB-111. My navigator is Capt. Joe Maguire, of Steamboat Springs, Colo.

At 4:00 a.m. the two-man team that will launch our aircraft begins servicing the FB and seeing to its particular needs. Another two-man team loads the computer tape for the mission into the FB-111's "memory."

Our day begins at 7:30 a.m. with a final weather briefing at base operations. We then file our flight plan with the Federal Aviation Agency's regional Air Traffic Control Center and head for the flight line to make a preflight check of our aircraft. We fire up the engines, taxi out to the

FB-111

PILOT REPORT

The author, Capt. William Reese Liggett, is a graduate of Miami University, Oxford, Ohio, and was commissioned through AFROTC at that institution in 1963. Following pilot training, he entered B-52 training, and at the time of his selection for the FB-111 was a B-52 instructor pilot and commander of a select combat crew. He commanded 107 combat missions in the B-52 in Southeast Asia. Assigned to the FB-111 in April 1971, Captain Liggett heads a senior combat crew at Plattsburgh AFB, N. Y.



A ground crewman checks his bird before a practice mission.

runway, and line up in formation, anticipating the clearance from the tower to start our roll.

The brief period prior to takeoff is always an anxious time. Many men have worked long hours making our three planes ready to arrive here at the hold line. We share a feeling of exhilaration as we reach this point, one brief moment before the action begins. It is here that all the logistics and labor and endless training come together in a single purpose.

The lead pilot calls a sixty-second "hack" to start the countdown to brake release. We sit there, hands on throttles, senses taut, like big cats ready to pounce.

Engines roar at eighty percent rpm. At Lead's count—"five, four, three, two, one"—brakes are released, and we roll onto the runway.

At exactly 9:30 a.m., the three planes shoot down the runway at seven and a half second intervals. The pilots of the second and third FBs meet the mark with precision simply by lighting their afterburners



Wings extended, the Mach 2-plus FB-111 comes in at 150 mph.

Burlington Departure Control, Joe completes his checklist to match my configuration changes and scans his radar to locate the two FBs ahead of us. It has been about ninety seconds since we left the runway. In less than ten minutes we level off at 23,000 feet, stacked in neat trail formation, heading south.

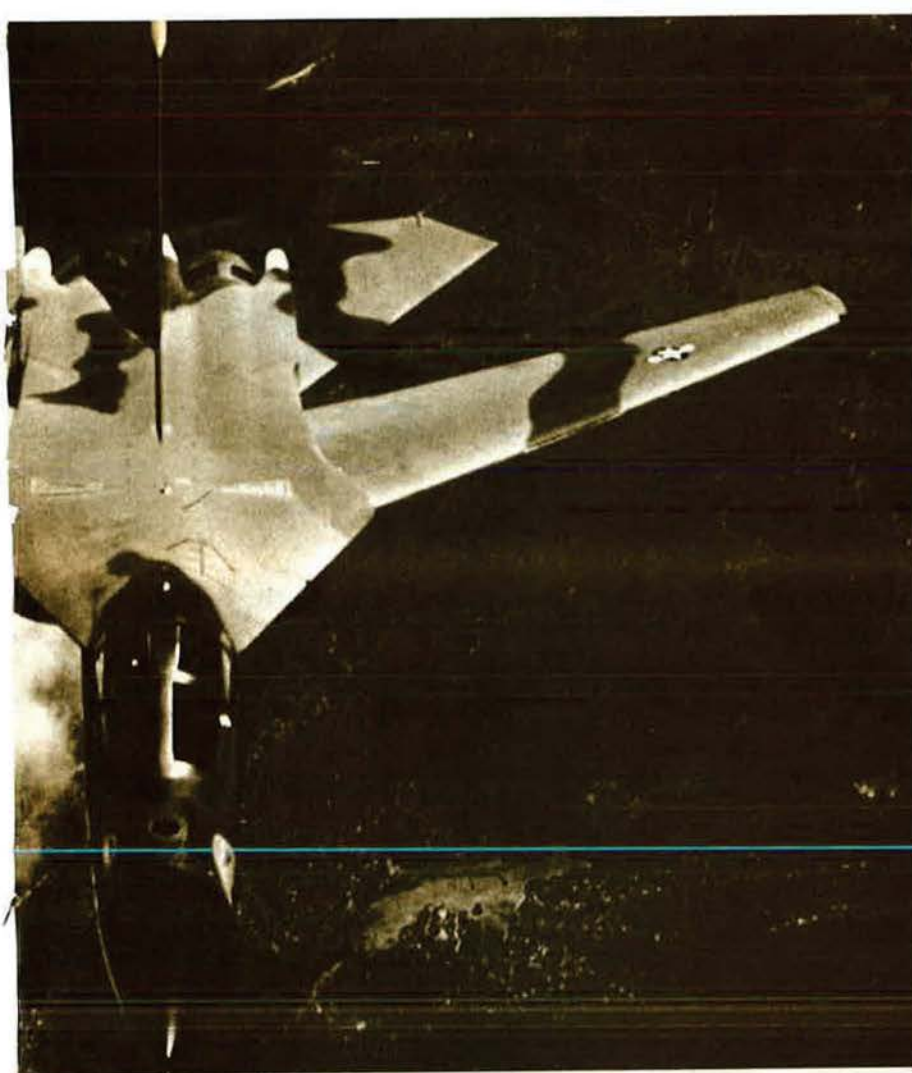
We complete our check of the bombing and navigation system near Albany, N. Y. Continuing south, we begin a precision navigation exercise, called a "nav leg," which will guide our flight down the east coast.

A Certain Euphoria

It is a beautifully clear, cold winter day. Inside the snug cockpit, under a greenhouse canopy, I can't help but feel a certain euphoria—a magic carpet sensation. We can see clear across Manhattan. Over the Statue of Liberty, it looks as if all the nation's ships are heading out to sea.

Conversation with air traffic controllers on the ground is clipped and business-like as they monitor the myriad flight paths of commercial, military, and private planes. Meanwhile, our inertial system's gyros and digital computers hum in unison, accepting the directions of the computer program.

Sometimes we tend to take the capability of the advanced avionics in today's new aircraft for granted. The sophistication of these "black boxes" is really remarkable. While Joe and I busy ourselves with course changes, speed, and other mission variables, the electronic sensors in our avionics systems are measuring every tiny movement of the aircraft, compensating for each deviation by issuing direct commands to the flight-control surfaces. If one of the electronic circuits malfunctions, it



FB-111 has longer wing, heavier landing gear than the F-111A.

of a "kick" to jam them back in their seats. Acceleration is very quick. Outside the cockpit the scenery starts to blur. Inside, the "nav" and I check instruments for engine power and performance. Rotation speed comes fast; I ease the stick back and the nose lifts off smoothly. We are airborne.

I raise the gear with my left hand, keeping my right on the control stick to hold correct pitch angle and wings level. My left hand moves from gear handle to flap handle to bring flaps and slats up as we accelerate through 290 mph. Then I reposition the wings from sixteen degrees to twenty-six degrees of sweep. As speed approaches 400 mph, I retard the throttles to cut off the burner and reduce the power setting to continue our climb.

As I make radio contact with

seven and a half seconds after seeing the afterburners light on the plane ahead.

The "burner" on the FB increases thrust from 24,000 to 40,000 pounds and gives the aircrew enough

The FB is "a dream to refuel in flight," not sluggish or jerky.

FB-111

PILOT REPORT

is automatically ignored while the other two circuits carry on.

The navigation system alone is so sensitive and accurate that the FB's parking spot on the ramp has to be surveyed to give the system the exact coordinates of the mission starting point. In effect, these systems are doing the jobs of three crew members on an older aircraft, and doing them with greater precision in much less time and space.

Refueling

At 11:30 a.m., off the coast of Georgia, Joe and I and the crews of the other two FB-111s begin to get a bit anxious as the time nears for in-flight refueling. But right on schedule, a KC-135 Stratotanker makes radio contact. It is from the 306th Bombardment Wing at McCoy AFB, near Orlando, Fla., and is navigating toward us at 500 mph. Our speed is the same, so we are closing at a rate of almost 1,500 feet per second.

Following the image of the KC-135 on his radarscope, the lead navigator relays course corrections to the formation, adjusting our flight path toward, but slightly offset from, the tanker's. At the 1,000-



mph closure rate, the distance between us diminishes rapidly.

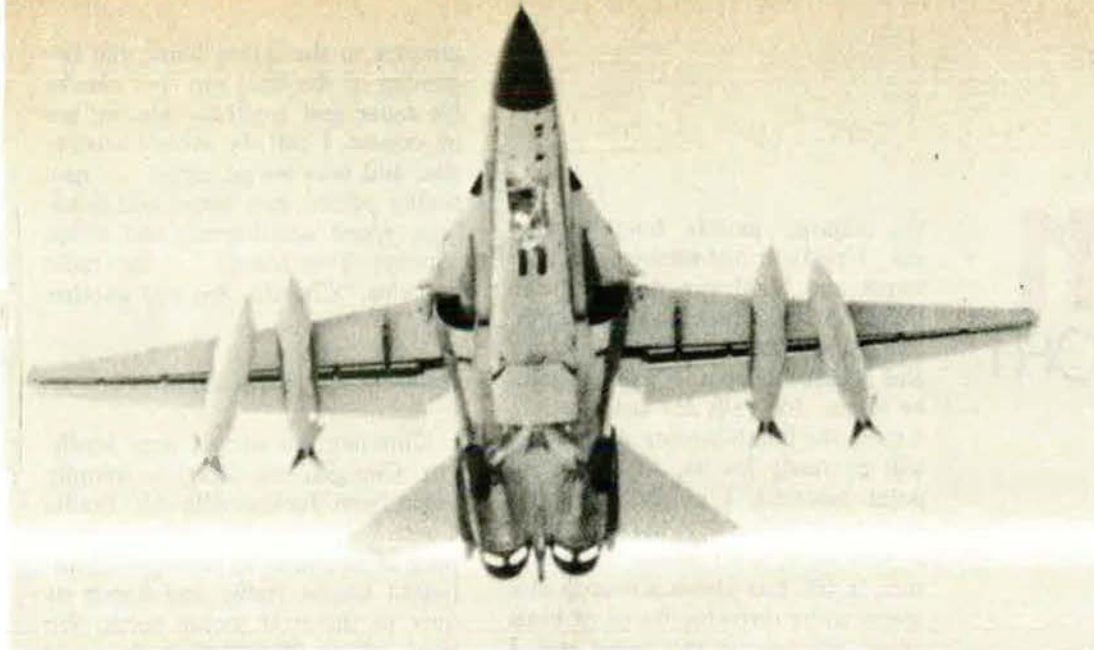
When the tanker is exactly twenty-one miles downrange, Lead directs him to turn onto our heading. I spot the KC-135 halfway through his turn about ten miles out. When he rolls out, the bombers are five miles astern, now three abreast in loose visual formation. In a few minutes, the lead bomber is in position, immediately behind and below the refueling boom, ready for hook-up.

The KC-135 is to offload 72,000 pounds of JP4 jet fuel to the three FB-111s, refueling them one at a

time in just thirty-two minutes. The tanker's boom operator inserts the refueling boom into the small receptacle just behind the FB's cockpit. It is up to us to fly in very close trail position behind the tanker.

The FB is a dream to refuel in flight. Its flight controls are specially designed to adapt automatically to almost any altitude and airspeed condition. The feel of the stick is ideal, neither sluggish nor jerky. The plane is relatively easy to hold.

As in any aircraft, however, aerial refueling requires strict pilot attention to every small change of position between tanker and receiver.



The FB's two P&W TF30-P-7 engines get it airborne in little more than 7,000 feet.

FB-111A—Facts and Figures

Designer and Manufacturer	General Dynamics Corp. First production model flew on July 13, 1968. Entered SAC inventory, October 1969. Production now completed with 76 aircraft built.
Wingspan	Spread, 70 feet; fully swept, 33 feet, 11 inches.
Length	73 feet, 6 inches.
Height	17 feet.
Weight	47,500 pounds empty. Basic mission takeoff weight: more than 80,000 pounds.
Speed	Mach 2.2 at altitude; Mach 1-plus at sea level.
Service Ceiling	More than 60,000 feet.
Propulsion	Two Pratt & Whitney TF30-P-7 afterburning turbofan engines, each with up to 25,000 pounds of thrust.
Armament	Fifty 750-pound bombs, two carried internally and 48 in twin clusters of three each on eight wing attachments. Can also carry six SRAM missiles.
Range	More than 3,300 nautical miles with maximum internal fuel. Range can be extended with up to six external tanks of 600 gallons each on wing pylons. Additional tanks may also be carried in weapons bay.
Takeoff and Landing Run	7,600 feet, over 50-foot obstacle.
Avionics	Mark II-B all digital computer-controlled avionics system. Inertial navigation and control and display set. General purpose, general navigation, and weapons delivery computers. Astrocompass, Doppler radar, attack radar, optical display, terrain-following radar, and low-altitude radar altimeter sets.
Basing	Two wings of two squadrons each: at Pease AFB, N. H. (509th Wing), and Plattsburgh AFB, N. Y. (380th Wing).

To help the pilot with this task, the KC-135 is equipped with a director light system on the underside of its fuselage. The system signals the receiver pilot with lights to advise him of his relative position in the refueling "envelope." Of course, the pilot doesn't have to rely solely on external references to judge his position. After many hookups and hours of refueling practice, a pilot develops a certain feel for the correct position behind the boom.

"Disconnect," calls the boomer over the radio. My plane is the third to be refueled. We slip below and away from the tanker with two minutes to spare. With a radioed farewell, "Good day. Good flight," the KC-135 turns for home.

FB-111

PILOT REPORT

Target Run, on the Deck

As we cross the Florida peninsula, St. Petersburg is clearly visible below. Out over the Gulf of Mexico, the formation will split up to enter the low-level portion of the flight at twelve-minute intervals.

One, two, three—in we go.

Leveling off at 1,000 feet, we check our TFR and computer system. It's good. I engage three switches, and the FB noses down smoothly to 400 feet above the water as it banks toward the next navigation point.

Speed is about 490 mph. That's 0.65 Mach. Dead ahead is a gorgeous big cabin cruiser. We pop up to 500 feet to fly over it at legal and courteous altitude. Ahead is the coast of Florida.

Joe scans his radar returns and confirms that the inertial system and computer have us right on time and course. Now we are over sandy, almost treeless, terrain. Our TFR examines its profile and occasionally signals the autopilot to climb or descend to maintain 400 feet clearance above the ground.

I check the clock. It's ten minutes till we make the first target run at

the remote, mobile bomb-scoring site. I make a last-minute check of target and bomb-run drawings and maps. At 400 feet and 650 mph, I've got to know what to look for and where to spot a timing point or target. Joe calls for acceleration. I radio the bomb-scoring site so they will be ready for us. At the initial point inbound, I sweep the wings back to sixty-five degrees. Our speed is 650 mph, 0.85 Mach. Our altitude is 400 feet above a swamp that seems to be throwing flocks of birds at us. We are on the target run. I scan for the timing point, a set of canal locks. Suddenly, there they are! I hack the clock. We are right on course.

The navigator places radar cross hairs on the aiming point. Computers refine their data, and the autopilot steers precisely. Outside the cockpit, the scenery is a blur; inside, cooling air surges about. Instructions and acknowledgments fly across the cockpit. Seconds are clicking away. Everything checks... visual, timing, and radar aiming. Radio tone on . . . ten seconds . . . tone off.

I call, "Bombs away." Of course nothing drops since this is simulated bombing, but the scoring site tracks and scores us electronically with radio and radar. They can tell exactly where real bombs would have hit. I bank our FB to the right, toward target two. The clock is driving again. Forty-six seconds later . . . tone on and off. The second bomb run is complete.

Retard throttles . . . sweep wings forward. We head for the next bomb run; one more target to "attack." We take a short breather. It sure is good to have this superb avionics equipment to carry the load. Orange groves slip by below . . . thick mossy ponds resist the dry season . . . newly bulldozed housing developments remind me of Florida real-estate ads.

Time passes quickly. It's three

minutes to the initial point, the beginning of the final run. Joe checks his radar and confirms that we are on course. I call the mobile scoring site, and here we go again . . . new timing points, new times and headings, speed accelerated, and wings reswept. Two tones . . . the radio crackles, "Cheerio. See you another day."

Heading for Home Plate

Climbing out steeply over southern Georgia, we hear a friendly voice from Jacksonville Air Traffic Control Center. He sets an easy pace as he climbs us through Miami-bound tourist traffic and hands us over to the next sector north. We level off at 29,000 feet. Joe and I exchange grins.

We're homeward bound. There are two hours to the high-approach fix at home plate. The navigator and our computer tape guide us on yet another precision nav leg. It's 3:00 p.m., but no time for a siesta. As we approach the northeast, clouds have moved in, gray and flat, low and lumpy. We press on for Plattsburgh.

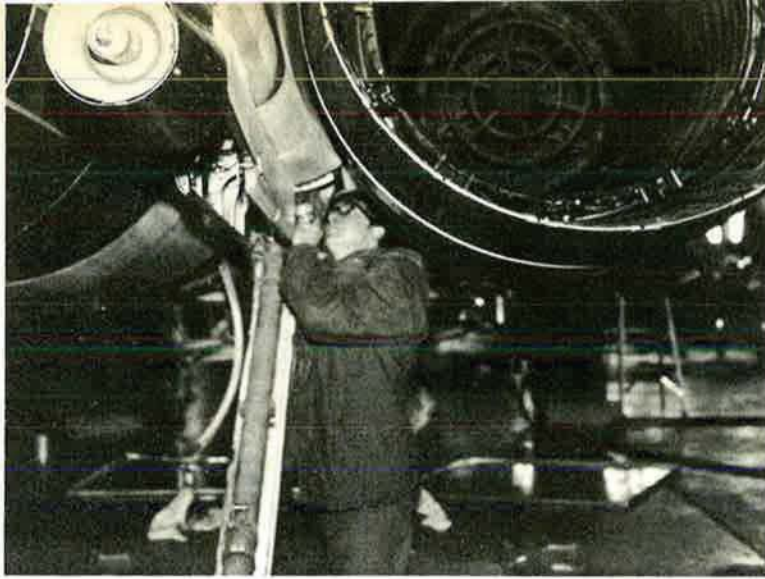
Burlington Approach Control transfers us to our Air Force controller for final approach. While Joe reads the checklist, I configure the FB for landing: wings forward, gear down, slats and flaps down. We decelerate to 150 mph, our approach speed. The voice of the ground controller is smooth and reassuring, rather like a narrator closing a story.

We are on glide path, on course. Through the clouds, there is the field straight ahead. Snow flurries herald our arrival. The touchdown is smooth as silk . . . seven hours, forty minutes . . . roll out . . . brakes . . . nose-wheel steering engaged.

We taxi to the ramp. Our crew chief beckons us to our parking place. The engine turbines wind down. I creak down the ladder . . . knees don't want to unbend . . . feel feet on the ground.

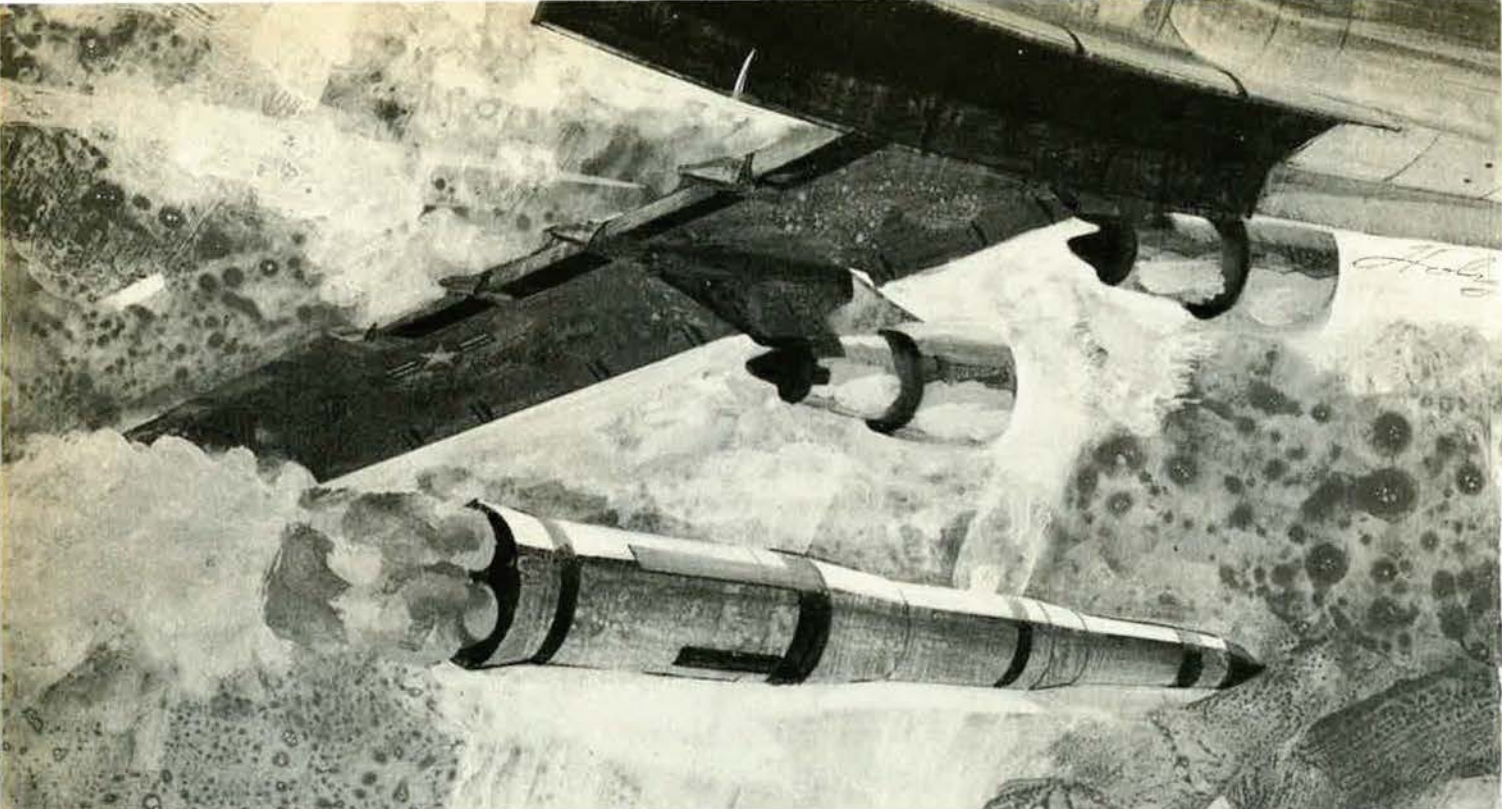
Our crew chief hurries over to greet us. "How did it go?"

"Mission accomplished," I reply. "Flown as briefed." ■



With afterburning, the FB's engines (left) produce more than 40,000 pounds of thrust. Parking spots (below) are surveyed to give nav system an exact starting point.





Although there is no evidence that the Air Force's intercontinental ballistic missiles, in a general sense, might become vulnerable to a surprise attack in the foreseeable future, it must be assumed that technological advances, on the one hand, and aging, on the other, will eventually require the development of a follow-on system. Concurrently with programs that keep the ICBM forces in step with gradual technological progress, the Air Force, therefore, is also looking at . . .

M-X

THE MISSILE SYSTEM FOR THE YEAR 2000

By Edgar Ulsamer
SENIOR EDITOR, AIR FORCE MAGAZINE

THE apocalyptic image of nuclear war forces those who get paid for preventing it to assume the worst about the other side's strengths and their own side's weaknesses.

This fact of life is at the root of preliminary Air Force studies of future strategic weapon systems that eventually might augment or even replace the present family of Minuteman and Titan ICBMs.

Equally compelling is the recognition that

no weapon system lasts forever and that, therefore, all possible approaches underlying the concept and design of follow-on systems should be examined. The Air Force is doing just that as part of an unhurried but comprehensive analysis of what such a future system should look like.

The tentative name of the exploratory effort is M-X, for "Missile system X." Lt. Gen. Otto J. Glasser, USAF's Deputy Chief of Staff for Research and Development, told AIR FORCE Magazine that there is no timetable for completing these studies because "it isn't at all clear that we can reasonably credit the Soviets with any near-term capability that could wipe out our ICBM force as a strategic entity.

"It is an arrant overestimation to say that Minuteman is vulnerable, if 'vulnerable' means it is wiped out *in toto*. When we talk about future vulnerability of Minuteman, we think, in

Artist's conception depicts a wide-bodied superjet reconfigured as an airborne missile-launcher. An aircraft of this type could remain airborne for more than ten hours.

—Illustration by Fred Holz

a statistical sense, of the number of missiles that might be lost to a concentrated wave of attacking enemy missiles. Everything that can be reasonably extrapolated from present Soviet capabilities confirms that no matter how we set the scenario, a sufficient number of Minuteman missiles can be expected to survive to carry out the system's assigned assured-destruction role."

This does not mean that an even more survivable system will not be needed at some future date.

"The obvious way to ameliorate future vulnerabilities of ICBM systems is to change from fixed hardened sites to mobile basing. It is equally obvious to most Air Force planners that there is nothing more mobile than an aircraft, and that no mobile system shows greater operational and cost-effective advantages than an air-mobile strategic system," according to General Glasser.

If, in the past, mobile systems have not been emphasized, he told AIR FORCE Magazine, "then we must attribute this to the only defect in Air Force thinking that we might be guilty of—our concern about cost and, therefore, the desire to incrementally and inexpensively improve what we already have, rather than to go after brand-new, completely innovative systems such as the Navy's Trident program."

Advantages of an Air-Mobile System

The Air Force, of course, has been aware for some time of the broad range of advantages peculiar to an air-mobile system. Among them, General Glasser pointed out, is a vast increase in survivability because "such a system can be scrambled on even the faintest warning, yet stay on alert at almost no additional expense over extended periods." An added benefit of the system's mobility, he added, is "that we think we can squeeze a very impressive weapon system into a rather small package because so much of the range [that the weapon must cover] can be accommodated by the carrier itself."

Studies of air-mobile systems and how they could be configured and operated have been

going on for years. Initially, some experts doubted that such a system could achieve required accuracy. But advances in guidance technology have brought about a change in outlook.

"While I am not suggesting that solving the guidance problem is a piece of cake, there now are many competent scientists in this country who are convinced that they know exactly how to do the guidance job reliably and efficiently," General Glasser pointed out. Two factors are considered critical to the accuracy of any mobile system—the ability to update the navigational system (calibrating the system by taking position fixes) and the time lag between the precise moment when bearings are taken and when this information is translated into navigational corrections.

The guidance and navigation system can be updated by taking either stellar or navigation satellite fixes. Of these two techniques, General Glasser suggested that "stellar updating is more probable because there is no reason for inducing the additional inaccuracies that could come from a satellite system. The only problem is that the system needs clear air so that it can carry forward [all navigational information from the outset of the missile's flight and from subsequent position fixes] to its destination with a high degree of precision."

Time lag does not pose significant problems if sophisticated digital computers are used. "Not only can we update very quickly with advanced computers, but we also keep track of what is happening to the missile between these microsecond-long observations on a dead reckoning basis by either Doppler or inertial means. We know that this is possible because many of our current weapon systems are predicated on this technique," General Glasser pointed out.

While Air Force and Department of Defense planners appear to be moving toward the conclusion that the Air Force's next ballistic missile system should be mobile, and most likely air-mobile, no decisions have been made on whether it would augment the present ICBMs or replace some or all of them. Stressing that these latter decisions are largely outside the purview of the Air Force because of SALT and for other reasons, General Glasser pointed out that from the military point of view "replacement is, of course, not the ideal way.

"The Soviets seem to recognize this because they haven't thrown anything away that they have ever built [in terms of strategic systems]. All our calculations lead to the conclusion that the most cost-effective way to achieve strategic deterrence is through proliferation [of the weapon systems, or aim points, that an aggressor must destroy in order to be sure that his victim will not be able to retaliate]. If these findings are correct, then the best option, in



Lt. Gen. Otto J. Glasser, USAF's DCS/R&D, believes that "there is nothing more mobile than an aircraft, and that no mobile system shows greater operational and cost-effective advantages than an air-mobile strategic system." Advances in guidance technology provide such a system with good accuracies.



Launch-control procedures for airborne launches can follow those of Minuteman silo launches. The launch crew might consist of the pilot, missile controller, and flight engineer.

case we decide to build an air-mobile system, would be to use it to augment the already existing force. Other factors, of course, might preclude this."

Many different concepts can be used in designing an air-mobile ballistic missile system. "The trade offs in terms of cost against reaction time are quite interesting, but have not been defined sufficiently to support any specific recommendations. Obviously, we will have to run more trade-off studies to pinpoint the approach that offers the greatest efficacy," General Glasser said.

The key to an air-mobile system's efficacy is the ability "to launch from outside the enemy's detection range in order to preclude identification and attack with a high degree of reliability," General Glasser said. The ability to evade detection and attack can be obtained in different ways and to different degrees. "We can postulate, for instance, that we want a carrier that doesn't do much more than lift the missiles off the ground and circle around North America. This provides the system, in effect, with zero reaction time. Our missile carrier is up there ready to launch at any time," he explained.

Conversely, there is considerable merit in an air-mobile system that uses the carrier aircraft to transport its ballistic missiles reasonably close to the target area, albeit still outside of the enemy's detection range. The difference between these two approaches is considerable, in terms of cost as well as reaction time.

"The costliest way to transport payloads is by rocket power, and, as a result, the price extracted for the immediate reaction capability of the system that operates on a fully intercontinental basis is far greater than the one that transports its missiles for an extra 2,000 miles or so by the more economical jet power," General Glasser pointed out. The reaction time of the system that delivers its missile to the launch area at jet speeds is, of course, correspondingly longer than that of the long-legged system.

Still another fundamental operational aspect will affect the design of an air-mobile system: the question of whether or not a certain fraction of such a force should be airborne all the time. "Our studies to date show that it is very possible to have the entire force on the ground and yet be able to survive a surprise attack in sufficient quantity to maintain the system's lethality. But this fact notwithstanding, we found—and so reported to [senior Department of Defense officials]—that even if we postulate the need for airborne alert, such a system would still stay well within the bounds of reasonable systems costs," he added.

Because no conclusions have yet been reached as to how and where a future air-mobile system might be used, the actual configuration of the launching aircraft, as well as of the missile itself, cannot be predicted. On the other hand, the present state of US technology in terms of nuclear yield and guidance accuracy makes it safe to predict that an air-mobile system can be built that is at once "an excellent weapon system and can be kept at very reasonable cost levels," General Glasser asserted.

Terminal Guidance Potential

While terminal guidance has special appeal in the case of mobile systems, its attractiveness extends to all ballistic missiles. A number of variable and imponderable factors—such as atmospheric conditions over the target and geodetic uncertainties—establish what is in fact an attainable upper limit of ballistic missile accuracy. But this barrier can be eliminated by such techniques as terrain matching or map matching whereby the ballistic reentry vehicle (RV) guides itself to its target with the help of a computer and aerodynamic controls. The question is, however, whether such a capability, which obviously doesn't come cheap, is worth the price. Obviously, in the case of targets which are already within the lethal range of unguided RVs, terminal guidance would be superfluous. The degree of hardness of a given target combined with the warhead's yield and the accuracy of its delivery determine the lethal zone of a nuclear weapon. Accuracy is expressed in CEP, or circular error probability.

While the CEP of US ICBMs cannot be revealed, it already denotes high accuracy, but

can be improved even further without resorting to terminal guidance. But this may not be good enough to guarantee a reliable damage-limitation capability involving very hard targets, such as new Soviet missile silos and command and control centers. Terminal guidance, therefore, might make sense if, as General Glasser put it, "we can justify it in terms of economics. Our studies have not yet progressed sufficiently to bring this out. What is clear, however, is that there exists a potential to incorporate terminal guidance into ballistic missiles."

Terminal guidance of ballistic missiles requires different techniques than those underlying electro-optically guided bombs or missiles. "These tactical systems rely on a lock-on, which is being provided through human intervention. Terminal guidance of a ballistic missile requires another technological leap forward. We will have to be able, in fact, to tell the missile, 'When you get to the target area, you will recognize the target by such and such characteristics which you will ascertain with

either your visual or radar sensors, through either terrain matching or map matching.' There is no question about the technological feasibility of such a system, but there are many unanswered questions about its cost and practicality," according to General Glasser.

Another technique to provide ballistic missiles with extremely high precision, General Glasser pointed out, is through the use of satellite-based guidance or target designation. Techniques of this type appear to be well within existing technological capabilities but would, of course, also lead to significant cost increases.

Land-Mobile Systems

Although most of the experts concerned with future strategic systems now favor air-mobility, the land-mobile concept has not been abandoned. In the past, some defense experts have expressed fears that a land-mobile system could become unduly vulnerable if exposed to

OPPORTUNITIES FOR GREAT PROGRESS

In his interview with AIR FORCE Magazine, General Glasser described the Air Force's assessments of the growth potential in aerodynamics in the years ahead, saying that "on the basis of what's coming out of the laboratories, it is clear that technology is not approaching a plateau, but offers the opportunity for great progress." He cited three specific areas that, on the basis of preliminary research, demonstrate strong potentials:

We are advancing at a good clip in the field of propulsion technology. Our thrust-to-weight ratios and our specific fuel consumption will continue to improve. The growth curves aren't flattening out, but continue to climb.

The meaning to the efficacy of future military aircraft design is pervasive because there is a four-to-one ratio [in payoff] between weight and range or payload.

The benefits of further microminiaturization, integrated circuits, and other associated techniques can be equally dramatic. We can gain more and more capability for less and less money, weight, and power.

In the field of structures and materials, we are moving along at an almost un-

believable rate by getting more and more performance out of each pound of structural weight.

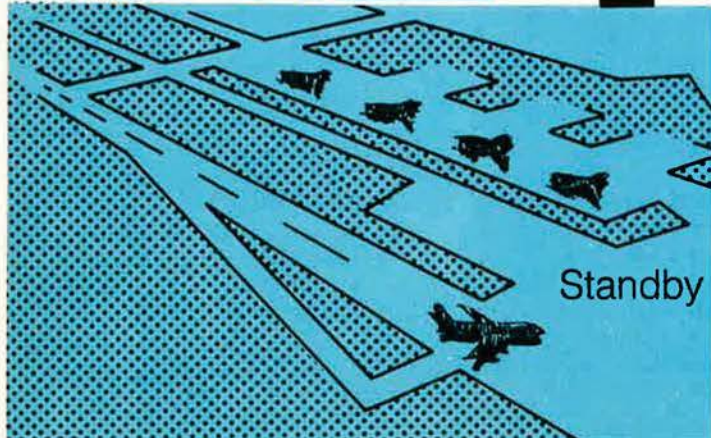
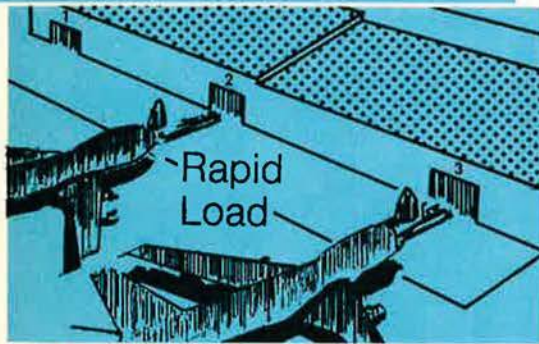
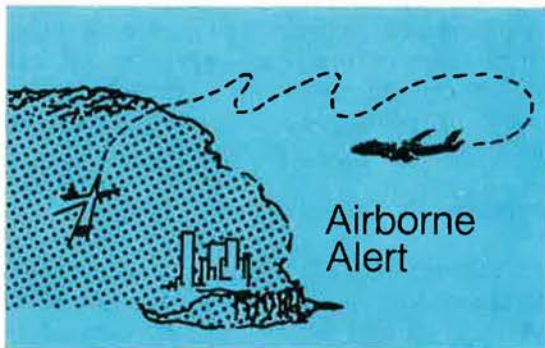
Lastly, the synergism that "results from advances in these three areas is such that I am tempted to predict that eventually we might be able to build a small aircraft of the size of the Air Force's present Lightweight Fighter prototype but which has the performance characteristics in payload, speed, and range of the F-15.

Some of these emerging new technologies, General Glasser said, are being incorporated by the Air Force and the aerospace industry into the two competitive prototype designs of the Lightweight Fighter. He cited specifically the fly-by-wire and Control Configured Vehicle (CCV) technologies used in the General Dynamics version and the advanced aerodynamics and the high "G" cockpit arrangement of the Northrop design, which was derived from the space program.

He said the result of the Lightweight Fighter program might well be "a couple of aircraft that could be very attractive for other nations wanting to update their air forces with an aircraft that costs less than the F-15, yet still meets their needs."

Future airborne missile launch systems can be maintained in a standby mode, on ground alert, or on air alert for extended loiter at varying distances from the target.

Deployment and Operations



a surprise attack by submarine-launched ballistic missiles with a depressed trajectory (see "Soviet Developments," p. 64). General Glasser rejected this argument, saying that detailed assessments of the potential effect of such a capability on survivability of the USAF bomber fleet show "that it would cause us some pain by reducing the basing area but would not provide the attacker with any insuperable advantage. The same condition obtains, of course, with regard to those land-mobile ballistic missile systems that are moved on warning to various launch sites from one central storage point."

Land-mobile schemes that show promise, depending on whether cost or survivability has top priority, fall into the following broad categories, according to General Glasser:

- An off-road mobile system that constantly "wanders around the countryside," and whose exact location is extremely difficult to pinpoint by a would-be attacker;

- A "shell-game" system consisting of many more shelters than missiles, with the missiles being moved periodically from and to different shelters so that a potential aggressor would not know which were empty at a given time. This approach requires life-support and housekeeping facilities at all shelters and is, therefore, costly;

- A so-called garage system arranged in the form of a wheel. A housekeeping and missile storage center is located at the hub and a certain number (thirteen is often seen as operationally and economically most effective) of "garages" arrayed around it. The missile and its launch crew rush out from the central housekeeping facility to one of the garages as soon as warning is received. Again, the attacker is kept guessing as to which shelter the defender will launch from. This is the least costly system because the individual launch sites include no life-support facilities.

Any of these approaches appear feasible and may use either trucks, tracked vehicles, or ground effects machines (GEM) to transport the missiles.

The Question of Damage Limitation

A lingering and politically sensitive question associated with the design of future ballistic systems and the incremental improvement of the existing Minuteman system involves damage-limitation capabilities. In the lexicon of nuclear war gaming, damage limitation means the ability to successfully attack the missile forces held in reserve by the other side, after the enemy has launched a first strike involving most but not all of his missiles. The objective is, of course, to prevent further attacks, hence the term damage limitation.

In a practical sense, damage limitation requires the ability to attack the enemy's missiles and command centers in their hardened sites in order to prevent him from further aggression against the defender's surviving civilian population. This presupposes a combination of high accuracy and high warhead yield, with the former relatively more important. The United States currently does not possess a reliable damage-limitation capability, mainly because in a qualitative sense it is the same as a first-strike capability, and the United States historically has shunned a first-strike posture. But a new consideration was hinted at when President Nixon, in his report to the Congress on "US Foreign Policy for the 1970s," rejected the indiscriminate mass destruction of enemy civilians as the sole possible response and requested instead ". . . that we have the forces and procedures that provide us with the alternatives appropriate to the nature and level of the provocation." This would seem to include damage limitation.

In addition, unemotional analyses of the two capabilities show that one is not synonymous with the other. The hard-target kill capability required for damage limitation is a function of missile accuracy and warhead yield in relation to the hardness of the target. A first-strike capability is all of these qualities *plus* large quantities and variety of both offensive and defensive weapons as well as associated strategy and tactics.

General Glasser expressed the opinion that "the ability to limit damage can well be seen as a form of additional deterrence and as a means to further discourage the other side from nuclear brinkmanship. I would think that the American people will want to have the ability to limit nuclear damage to the United States." For the time being, damage limitation appears to be possible only through ICBMs, the sea-launched missile lacking the accuracy to attack hardened targets and the bomber, under most conditions, requiring too much time to reach them.

Any decision to provide the Air Force's ICBM force with a full damage-limitation capability rests, of course, with the White House and the National Security Council. SALT I contains no prohibition against the development of such a capability.

The Survivability of Minuteman

"If we consider the hardness of our silos, present Soviet capabilities in guidance technology, and the inherent growth potential of our ICBM force, Minuteman must be considered a completely satisfactory, enduring capability. If we add reasonable conjecture about the growth of Soviet capabilities—and

AN INVITATION TO THE AFA- SPONSORED SYMPOSIUM— "THE ICBM CHALLENGE"

Members of the Air Force Association are invited to attend an AFA-sponsored symposium on "The ICBM Challenge" to be held during the 1973 SAC Missile Combat Competition, May 1-3, 1973, at Vandenberg AFB, Calif.

The symposium, featuring top SAC strategic experts, led by Gen. John C. Meyer, Commander in Chief of SAC, will cover all elements of the land-based missile strategic force as it relates to Soviet missile strength and will project force modernization. The complete symposium package includes special presentations at the Missile Competition Center, two receptions, a dinner, a luncheon, and possibly the viewing of a missile launch if conditions permit.

This promises to be an outstanding meeting, and AFA members are urged to send in reservations early, since registration closes April 16, 1973. Only 300 reservations can be accepted. Arrangements have been made to house all registrants in the Santa Maria, Calif., area, and AFA has reserved a block of rooms for symposium registrants. The symposium registration fee will be \$45. (This does not include room charges or transportation costs.) For symposium registration forms and hotel reservation forms, send checks to: Air Force Association, Attn: Miss Flanagan, 1750 Pennsylvania Ave., N. W., Washington, D. C., 20006.

we have done this—prudence dictates that we undertake precautionary steps. This is the reason behind our new UGS [upgraded silo] system, which gives us a dramatic increase in survivability at a modest cost of about \$1 million per silo," General Glasser emphasized.

The existing 1,000 Minuteman silos are scattered over six bases covering several states. The underground steel and concrete structures are separated from each other by an average of five nautical miles to prevent more than one being destroyed by a single warhead. The silos themselves are unmanned and controlled locally from underground, hardened launch control

centers (LCCs). There are five LCCs in each Minuteman squadron and each LCC normally controls ten Minuteman silos. Each LCC is linked to all of the fifty missiles in the squadron to provide emergency control. In addition, the entire Minuteman force can be launched remotely, from SAC's Airborne Command Post.

Because of the hardening and the redundant, netted command and control system, the problem of a successful attack against the entire force, even assuming that US national policy might require the ICBMs to ride out the full attack rather than to launch in retaliation when the first enemy missile strikes, "appears insurmountable from the Soviet point of view," General Glasser said. "The problem has many facets, including command and control, timing, penetration of dust and debris clouds, accuracy, and yield, and it is staggering," he added.

An enemy who wants to destroy the US ICBM force—without regard to this nation's strategic bomber and nuclear submarine forces—must attack an efficiently hardened, dispersed force. And he has to attack all of them within a very short time. This time element is crucial. If it is too short many of the attacking missiles will be destroyed by "fratricide," blown off course, or rendered ineffective in some other way. If the interval is too long, the enemy invites a retaliatory launch.

Recent Air Force calculations indicate that "the task of laying on a precise attack with high confidence of success may be as difficult, or more difficult, than solving the ASW [anti-submarine warfare] problem." Because of their high penetration capability, their multiple, highly accurate warheads, and their high readiness (more than ninety-eight percent can be launched at any given moment), even a small number of surviving Minuteman missiles can inflict unacceptable damage on an aggressor.

In this era of mounting cost concern, Minuteman's most attractive virtue may be the fact that it provides more than sixty-five percent of Triad forces on alert, at an annual operating cost about one-third that of the SLBM (sub-launched ballistic missile) force and about one-fourth that of the bomber force.

Command Data Buffer

An important new capability is being added to the Minuteman force through the Command Data Buffer system. Heretofore, each missile was programmed for a very limited number of targets. To change the targets in the missile's computer, a new targeting tape had to be produced at SAC headquarters, and a SAC re-

targeting team had to go to the silo and insert the new information in the missile's computer—a time-consuming and highly cumbersome process, especially during or following a nuclear attack. The Command Data Buffer will provide the ICBM force with a "remote re-targeting capability that operates with the speed of light," General Glasser explained.

Scheduled to cover eventually all 550 Minuteman IIIs (out of a total of 1,054 Minuteman and Titan missiles), Command Data Buffer links the Minuteman III launch control center to the individual silos through an electronic system that is secure, hardened against electromagnetic pulse (EMP), blast, and shock, and operable on the minimum amounts of power that can be expected to be available during and after a nuclear attack. The advantages of the new system are numerous and varied, ranging from reduced operating costs to increased operational flexibility, including instant responsiveness to changes in the potential threats as well as in national policies that govern the use of the offensive strategic forces.

"The efficiency of the entire ICBM force is enhanced a priori, and the value of the surviving force vastly increased by Command Data Buffer," General Glasser pointed out. In terms of specific operational advantage, Command Data Buffer, he said, "implies, at least potentially, the capability to reconstitute the force [after a nuclear first strike] and the ability to retarget with the aid of an attack assessment system. Simply stated, this means we will be able to survey what's left of our own force and to retarget and reassign with the speed of light. As the planners revise SIOP (Single Integrated Operations Plan) on a continuous basis, they will be able to modify the targeting of the force to match these changes in SIOP." (Command Data Buffer does not entail any change in the redundant, highly hardened command and control system of the ICBM force, but functions only as a special communications link for the transmission of targeting information.)

Combined with steady and significant increases in the ability to provide unambiguous warning of impending attacks on the United States through complementary and redundant optical and electromagnetic sensors, improving accuracies, and far greater silo hardening, Command Data Buffer will help ensure what General Glasser termed "the enduring, completely satisfactory" nature of the Minuteman system, the mainstay of US strategic deterrence. ■



Minuteman III represents a "completely satisfactory, enduring capability," according to General Glasser, "if we consider the hardness of our silos, present Soviet capabilities in guidance technology, and the inherent growth potential of our ICBM force."

People—

**Our
Most
Important
and**

**Most
Expensive
Asset**

“The Air Force must structure its career fields and manage individual assignments to provide maximum job satisfaction. We must challenge our people to make their most effective contribution, and all members of the Air Force must have an equal opportunity to do so. . . .” In these words, the Secretary of the Air Force summarizes the challenge to USAF today—how to attract and keep good people at a time of shrinking budgets and soaring costs. . . .

How USAF Plans To Meet Its Personnel Needs

By the Hon. Robert C. Seamans, Jr.

SECRETARY OF THE AIR FORCE

ONE CAN make a persuasive case that the most important task facing the Air Force is personnel management. If we do not attract and retain good people, technological progress will be undermined, and all of our planning and organizational work will fail.

The decade ahead will undoubtedly be one of tight defense budgets. We must attract and hold capable people and at the same time cut to a minimum the costs of training and maintaining our organizations.

To meet these objectives, the Air Force has developed a comprehensive Personnel Plan for recruiting, training, and sustaining the 1,600,000 people in its active and Reserve Forces and civilian components. Computers are an important management aid in determining what types of officers and airmen must be brought into the active force in any given year—how many pilots and how many technical

specialists. Our goal is to avoid humps and valleys that can leave good people without rewarding jobs, or leave jobs without qualified people to fill them. Computer models are now being formulated to perform a similar function for Air Reserve and Guard forces.

The Plan establishes many other specific objectives, with a personnel manager responsible for managing and reporting progress on each. These goals cover all facets of personnel management from recruitment to retirement.

ALL-VOLUNTEER FORCE

THE Air Force, in cooperation with the Department of Defense, is placing strong emphasis on achieving an All-Volunteer Force. Our progress in two short years has been encouraging.



Secretary Seamans, shown here in 1971 during one of his frequent trips to SEA, greets Vietnamese Gen. Cao Van Vien. Dr. Seamans is soon to leave his post as top Air Force civilian, a slot held since 1969. Earlier, he helped run NASA, following a distinguished career in industry.



Minuteman testing complex.

Despite low draft pressures, enlistments have been meeting our requirements, and we have been improving the quality of our enlistees. For instance, among first-term enlistees in FY '71, the combined percentage of those who scored in Mental Groups I and II—the highest test scores in Air Force Qualification Tests—was 39.9 percent. In FY '72, this figure rose to 42.7 percent. At the other extreme, the lowest acceptable quality for military service, Mental Group IV, dropped from 17.9 percent in FY '71 to 8.6 percent in

FY '72. So far in FY '73, Category I and II comprise 44.0 percent of our enlistees while Category IV has decreased to about five percent. And we are doing a better job of keeping good people in the Air Force. From FY '71 to FY '72, the first-term reenlistment rate rose from 20.3 percent to 32.6 percent, and career force retention went from 90.9 percent to 94.4 percent.

One of the most important steps we are taking to expand the source of volunteers is to enlist more women into the US Air Force. We

that, by the end of 1973, approximately two-thirds of our enlistees will be gained through this program.

Education and Training Incentives

We have found that educational and training opportunities are the most important incentive for young people who are considering an Air Force career. Today, more than eighty-five percent of our enlistees receive formal training, most of which will be useful after their return to the civilian community. The training courses given in residence cover areas from aircraft maintenance to computer programming to dental technicians.

Although Air Force training has always prepared our people for later civilian endeavors, credit for this training often has not been given outside the military. In order to remedy this, we established the Community College of the Air Force, which provides academic transfer credit. Five Air Force schools are now fully accredited by the Southern Association of Colleges and by the Schools Commission on Occupational Educational Institutions. Collectively, these schools offer 800 resident courses and an additional 1,200 courses given throughout the world by field training detachments and traveling instructor teams.

All officers now entering the Air Force hold at least a bachelor's degree, and almost ninety percent of our new airmen have high school diplomas. In addition, the educational level within the Air Force continues to rise as a result of Air Force Institute of Technology programs and off-duty educational opportunities. At nearly all Air Force bases it is possible to complete at least two years of college work. Baccalaureate and master's degrees can be earned at most major bases through part-time study, either on base or in nearby civilian communities. In FY '72, Air Force people enrolled in 211,000 college courses—an increase of about thirty percent over the previous year. There were 998 undergraduate degrees and 1,238 graduate degrees awarded.

Social Action Programs

The Air Force must maintain an environment of mutual understanding and respect among all its members if it is to remain effective. To promote this kind of personal relationship, we have established Social Action programs that make the Air Force attractive to qualified and dedicated people.

One of these programs provides education aimed at the prevention of drug and alcohol abuse. Where abuse occurs, we stress rehabilitation and the mutual benefit of returning the individual to full productivity and self control.

Our Equal Opportunity program places particular emphasis on personnel procurement,



Doctors (Captains) Robert and Anita Hibler work on sickle cell detection.

except to at least triple their number by 1978.

We are also allowing the individual more say in those things that affect him or her—from guaranteeing initial career-field assignment before entering the service to stating a preference for assignment location. For example, through the guaranteed enlistment option, approximately one-third of our new enlistees are selecting their jobs and associated training before joining the Air Force. Through further development of this program, we expect



Air Force jobs are varied. Above, determining wind velocity prior to an airdrop of personnel. Right, a stitch in time at a parachute maintenance facility in Germany guarantees life and limb.



training, promotion, and duty assignment. There must be more minority officers available to be selected for professional military education and for promotion in the field grades. For airmen, the Weighted Airman Promotion System has helped to minimize the possibility of racial discrimination, and minority promotions are improving.

Our Race Relations Education Program is providing human-relations training to all Air Force members. By July, all race-relations instructors in the Air Force will be graduates of the Defense Race Relations Institute at Patrick Air Force Base, Fla. Within the Air Force a new Social Action career field became effective in January. Not only commanders, but all officers and noncommissioned officers must accept the achievement of equal opportunity in the Air Force as a part of their professional responsibility. Commanders and supervisors in the Air Force are now evaluated, in part, on their contributions toward equal opportunity.

Human Relations Councils, chaired by the commander, have been established as forums for discussion of race relations problems. To further improve communications, many commanders have found it useful to supplement the formal chain of command through the installation of HOTLINES and increased contact with Junior Officer and Enlisted Councils.

Job Satisfaction

We are also placing heavy emphasis upon improving job satisfaction. The Air Force Human Resources Laboratory has compiled questionnaire data from more than 100,000 airmen in approximately 120 career ladders. This data includes individual job content, level of interest, and utilization of talents and training. Studies are now under way to improve conditions in specialties where a high percentage of assigned people reports poor job satisfaction.

Another means of retaining good people is by improving methods for matching assignments with individual interests, bringing aptitude requirements into line with job demands, and matching assignment location with individual preferences.

Most of the detailed research on job satisfaction has centered on the enlisted force. Officer career fields are clearly much broader and responsibilities more difficult to quantify. However, Air Force officer career surveys are now under way similar to those done for airmen specialties, emphasizing job challenge.

In response to a recent Air Force Association questionnaire to Junior Officer Councils, nearly three-fourths of the councils indicated that in considering an Air Force career, job satisfaction—the chance to make creative con-

tributions—was more important than pay and opportunity for advancement. This is a very constructive attitude.

COST CUTTING

PEOPLE are our most important and our most expensive asset. Eight years ago military and civilian pay amounted to about one-third of the Air Force budget. As a result of well-deserved pay raises, this figure is now forty-four percent, even though personnel strength has declined by seventeen percent. We must get more productivity with fewer people.

Improved Training Techniques

The Air Force has made its technical training more effective by revising requirements and course content and by improved techniques, including greater use of simulation in technical and flying training. The A-7D combat crew training course at Davis-Monthan Air Force Base, Ariz., uses flight simulation to reduce aircraft flights. Compared to the older conventionally developed F-4 training program, the A-7D course has about sixty-five percent more simulator time and twenty-five percent fewer flying hours.

We intend to use simulators even more in flight training. The Air Force does not now have an operational simulator that has the visual capability of those used by the airlines. However, two such visual systems are being delivered to MAC for initial operations in August 1973. We plan to acquire simulator visual systems for the A-7D, FB-111, and C-130. Also, we plan to reduce undergraduate pilot training forty-eight hours per student through acquiring new simulators and applying advanced training techniques.

Organizational Improvements

In other actions to increase effectiveness and decrease manpower costs, the Air Force is streamlining its headquarters and support activities. Functional consolidation and the elimination of duplicative-headquarters and direct-headquarters support activities saved approximately 1,800 spaces in our FY '73 budget. Follow-on actions, stemming from studies of PACAF, AFLC, and USAF Security Service intermediate headquarters, yielded a further reduction of more than 2,000 headquarters spaces.

The Air Force also has reduced support manpower overseas. Substantial savings have been realized by consolidating housekeeping facilities and closing bases with no active flying units assigned. Other savings were achieved by moving headquarters, such as Third Air

Force at London, to an operational air base, thereby avoiding duplicate sets of administrative and housekeeping facilities.

In addition to the geographical realignments, significant functional streamlining has been done. The Air Force has cut its military authorizations for public information by more than 500 people (fifty-five percent) since FY '68. Reductions in the base-level supply functions have saved some 3,200 spaces in FY '73. These latter savings were due in part to computer utilization, but more directly to management improvements in the supply system.

CURRENT ISSUES

THERE are many important issues that are monitored closely by the Air Force personnel planning staff. Significant developments are occurring in several of these areas.

Permanent Officer Grade Legislation

We badly need permanent officer grade legislation for the Air Force so that we can maintain our necessary rank structure. The temporary relief provided by Congress in 1972 will expire before the 93d Congress adjourns. Unless new legislation is enacted, the Air Force will revert to grade levels contained in the Officer Grade Limitation Act of 1954. Grade levels contained in this act were more restrictive on the Air Force than on the other services. A return to 1954 levels would force the Air Force to demote, retire early, or separate involuntarily several thousand officers. The proposed Defense-wide Officer Personnel Management System provides new grade legislation for all services.

Nonrated Officer Progression

One of the major objectives of the USAF Personnel Plan is the maintenance of a proper career flow for both rated and nonrated officers. Of particular concern is the shortage of nonrated officers in the middle and senior management grades. As a result, many relatively junior nonrated officers are in positions that call for grades that are one or even two levels above that which they hold. In most cases, these young officers are doing exceptionally well, which works to the benefit of the Air Force and enhances their promotion opportunity.

We hope to introduce more flexibility in nonrated career patterns. For example, officers in the supply career area might be assigned in other logistics career areas as well, thus broadening their experience and preparing them for higher responsibilities. This process is only in the planning stage, but it offers real possibilities for improving our career manage-

ment capabilities and providing greater job satisfaction.

Officer Evaluation

Effectiveness Reports tend to rate a large percentage of officers as exceptional, making it difficult to precisely determine those most deserving of promotion. This is a problem common to any large organization.

A proposed evaluation system would make some major changes in both philosophy and procedure. For example, rating officials would no longer compare an officer's performance to all other officers of the same grade, but rather to job-related standards. Also, the rating official would be given data on his own rating trends. This proposed rating system was field tested in September and November 1972. We are hopeful that the results will lead to a new rating system, which is more equitable to the individual and more useful to the Air Force.

Critical Recruiting Problem Areas

We are not fully achieving our recruiting goals in two important areas: the Reserve Forces, and physicians and allied medical personnel.

The Uniform Services Pay Act now before Congress authorizes enlistment and reenlistment bonuses for members of the Reserve Forces. We are also considering education and training programs to help attract high-quality personnel. Right now, we are recruiting prior-service personnel in order to maintain experience levels. Since May 1972, more than 4,500 airmen and 250 rated officers transferred from the active to the Reserve Forces, with a saving of \$64 million in training costs.

Special bonuses and pay should give medical personnel an income comparable to their civilian counterparts. Increased medical scholarships and the interservice medical school will also help alleviate the shortage of medical personnel. We must also ensure that the Air Force offers a high level of professional satisfaction for this important career area.

If we are to meet our personnel objectives in the draft-free era, we must have an even more effective and streamlined personnel structure. The Air Force Plan provides an excellent management tool to meet our goals. Important incentives, such as education and training, are helping to attract people who can handle difficult operational and support jobs.

Perhaps most important, the Air Force must structure its career fields and manage individual assignments to provide maximum job satisfaction. We must challenge our people to make their most effective contribution, and all members of the Air Force must have an equal opportunity to do so. ■



Equipment checks by the book ensure the reliability of aircraft on the line.

As our perceptions of China have become both more knowledgeable and more rational, a better appreciation of the balance between ideology and national interests has evolved. Although the major issues between the US and China remain, astute diplomacy on both sides gives promise of peaceful accommodation in . . .

A NEW ERA OF US-CHINA RELATIONS



President and Mrs. Nixon with Premier Chou En-lai, February 1972.

—Official Photograph, The White House, Washington

By Lt. William R. Heaton, Jr., USAF

JUST a year ago, in February 1972, the President of the United States made a historic journey to the People's Republic of China. It was the first time that the leader of the most powerful and wealthy nation on earth had set foot on Chinese soil or made intimate contact with the leaders and people of the most populous nation on earth. The journey also was historic in that it marked dramatic changes in the antagonistic posture taken by both countries since 1949.

Initial reactions to and interpretations of this contact were varied. Some observers viewed President Nixon's visit as a case of the Western barbarian paying homage to the Middle King-

dom. Others argued that pressure from the Soviet Union had forced the Chinese to improve relations with the United States. Still others believed the contact to have been inspired by the Metternichian diplomacy of Presidential adviser Henry Kissinger. Whatever the mix of reasons, it is clear that a new pattern of relations between the United States and China is now evolving.

It is almost axiomatic that the history of relations between China and the United States from the time of the "Open Door" policy of 1899 through "Containment" of 1949 and right up to the present has been largely a history of failure—not necessarily of failure to support

This article does not necessarily represent the official position of the Department of Defense

or any other agency of the US government. The views are those of the author.

US-CHINA

A NEW ERA

the right side at the right time as some would contend, but of failure to understand. The Chinese Communist revolution complicated the difficulty of understanding by adding the clouds of ideology to already murky perceptions on the part of both countries. Despite past failures to understand, there are prevailing reasons why communication and comprehension now are more possible.

Changing US Perceptions

Probably the most important factor is that US perceptions of China have changed. Until recently, the attitude of most Americans (including policy-makers) toward China can be generalized in three categories. The first view was that Communist China was basically a continuation of traditional China. The Communist "dynasty" treated the world as had its predecessors; there are superior and inferior nations. China, being the "middle kingdom," was the most superior of nations, while the Western nations were barbarians. According to this view, China was incapable of behaving according to the Western system of diplomacy among equal sovereigns. China, therefore, should be excluded from the international community until it learned the rules of the international game.

A second view taken by many was that China's international behavior was based upon hidden motivations. This assumption derived from the hostility of many Americans to Chinese Communist ideology and the politics of the cold war. In this view, since the eventual goal of communism per se is believed by these Americans to be world conquest and domination, the foreign policies of the Communist nations are directed toward this goal. When China made peace feelers or attempted to negotiate (as in Geneva in 1954 and Bandung in 1955), adherents to this view believed it was really a smoke screen for hidden aggressive ambitions.

A third but not as commonly held view as the other two was the "China-can-do-no-wrong" view, which was sometimes offered by China's apologists and supporters in the United States. In this view, China was a peaceful country with no vital interests that conflicted with those of the US if "US imperialism"

would simply cease its provocations in Asia. The US should quit interfering with China through political and economic intrigue and should immediately normalize relations with the Peking government.

There were weaknesses in all three views. As for the "traditional China" view, the Chinese Communists have repeatedly demonstrated in domestic and international policies that they are a good deal more than were the dynasties. The belief that China has not learned to behave in the international community has been proved ridiculous by China's astuteness in conducting international diplomacy. The various border negotiations, for example, reveal that China is willing to give and take in order to establish boundaries in accordance with accepted international practice. During the dynasties, borders fluctuated according to the relative power of China and its neighbors. Communist China has sought to fix them through legally binding treaties born of negotiations between sovereign entities. This would seem to be a repudiation of the suzerainty system of the dynasties.

While the Chinese have pride in their accomplishments, there is no proof that they have a superiority complex greater than that of other nationalities. The Ch'ing emperors (who were not Chinese anyway) may have required foreign envoys to kowtow, but Chou En-lai greets them with a handshake and a pair of chopsticks.

The second view has lost credence, particularly as the Sino-Soviet rift has widened. It is evident that Communist countries will sacrifice ideological similarities when national interests are involved—even to the point of engaging in armed conflict with each other. The second view is also discredited by its assumption that foreign policy need only be an extension of an ideological goal, whereas actual practice and experience show that policy may be a reaction in defense of national interests, irrespective of ideology.

For example, according to ideological premises, Peking should have supported the "people's wars" in Ceylon and Bangladesh; however, China's interests dictated otherwise. Ideology simply does not provide the way out of all international predicaments, and the leaders in Peking understand that much better than some ideologues in the United States.

It is the international predicament that also leads to the embarrassment of some of the more radical proponents of the third view—that China can do no wrong. When China failed to support Bangladesh and even went so far as to cordially receive the leader of "US imperialism," President Nixon, some of Peking's advocates were shocked and bewildered. It is also clear that some of Peking's friends in the United Nations have been alarmed because of instances wherein China has acted like a super-



President Nixon reviews troops of the People's Republic of China. China has about 2,800,000 men under arms, including an air force equipped with some 3,600 combat aircraft.

—Official Photograph, The White House, Washington

power, something Peking's leaders previously asserted that they would not do. It would be unfair to blame the US solely for past difficulties in US-China relations; at the same time, the historical conditions that have given impetus to conflict between the US and China could

not simply be reversed by "getting US imperialism out of Asia" on the assumption that vital interests would no longer conflict.

A new fourth view that has become more credible during the past few years, and is more realistic than the others, is the view that China

US-CHINA

A NEW ERA

conducts its international relations on the basis of resources and interests, much as does any other nation. China, of course, has been doing this all along. Its involvement in the Korean War and the Indian Border War are evidence of this. In both cases, China felt itself to be a victim of aggression, but US policy-makers and the public have taken some time to recognize it. It is only in the context of this view that the new US-China dialogue can be fully appreciated and the new emerging relationship between China and the United States examined.

China's National Interests

What are China's interests? The most important are the achievement of territorial unification, national power, and economic development. There are others (of which a future world order based on Mao's development of Marxist-Leninist ideology is one), but these are primary. All Chinese—Communists, Nationalists, or whatever party—agree on them. In fact, it can be argued that the Communists came to power in China precisely because they articulated these goals and interests more forcefully than any other political group. These interests are directly related to China's experience with the Western World, including the United States, over the past 130 years. China's present Communist leaders remember its humiliation and dismemberment by the West (and Japan). Symbolic of the Communist attitude, when announcing the establishment of the People's Republic in 1949, Mao Tse-tung stated, "The Chinese people have stood up!"

In modern times, most of the Western powers that ran rampant over China have themselves diminished in relative power and influence in Asia, but the US stands in Asia as a reminder of the past. The Chinese Communists see US involvement with Taiwan not only as illegitimate interference in China's continuing civil war, but as a foreign thwarting of their most vital interest, territorial unification. However, the Soviet Union is also an obstacle to this interest. Negotiations between the Soviets and Chinese on boundaries have proved fruitless so far. *[In 1967, there were approximately ten Soviet divisions along the Sino-Soviet borders. By 1972, the number had reached forty-four divisions. Some of these Soviet forces*

are equipped with nuclear weapons—ED.] Furthermore, the Soviet Union, by withdrawing technical aid and support to China in 1958 over ideological differences, dealt damage to another of China's interests—economic development. Consequently, China feels that both of the superpowers support policies that conflict with its vital interests.

China, in accordance with its resources, has sought to use diplomacy to deal with the challenge of both superpowers. Particularly since the close of the Cultural Revolution in 1969, China has gone all out to cultivate the image of a "rational, well-behaved" nation. Ambassadors were sent to various countries, and China expressed a willingness to agree to disagree on outstanding international questions—to some extent even on Taiwan*—in order to achieve diplomatic recognition. The crowning achievement came when the Peking government was seated in the UN Security Council. These achievements did not result from basic changes in China's foreign policy, but rather from China's success in promoting a new international image.

The change in style of Chinese diplomacy has achieved some success, particularly in influencing the US. The US has shown that it realizes China's power status by acceding to Peking's seating in the UN Security Council and by the Presidential visit. As the US acknowledges that China is a power in Asia and that it is becoming a world power, the Chinese interest in achieving national power receives some measure of fulfillment.

At the same time, the US has given indications that it will reduce its military forces in Asia. China appears willing to accept at face value US assurances that withdrawal from South Vietnam will be complete. Chinese reaction to the mining of North Vietnam's harbors and to the stepped-up bombing, for example, has not been as severe as many predicted. At one point, China stated that its security was being threatened (a strong statement in the language of international diplomacy), but then cordially received envoy Henry Kissinger for a second round of high-level talks.

Dr. Kissinger undoubtedly reassured the Chinese leaders that the US did not intend to jeopardize China's security; however, the Chinese still have the image of dismemberment in mind when they think of great-power involvement on China's periphery. The Chinese do not want Vietnam to become Chinese territory, but neither do they want it to become a springboard for encroachments on China by powerful foreigners. If the US makes good its

* In agreeing to relations with Peking, several nations only "took note" of Peking's claim to Taiwan without actually subscribing to it. Whether the US could get by with the same is debatable since it is the US that is physically present on Taiwan (and not Canada or Italy).

plan to withdraw completely from South Vietnam, it will remove a primary obstacle to better relations.

Continuing US-China Issues

Nevertheless, it is precisely the realization that in international politics China behaves like other nations, which guards against a spirit of euphoria when dealing with the question of US-China relations. It is more *understanding* that has been achieved, not more *agreement*. Besides the outstanding obstacle to better relations—the Taiwan issue—there are a number of other issues that divide China and the US. One of the more important has to do with the role of Japan in Asia. US policy has been to encourage Japan to take a leadership role. Japan is already the economic power in Asia. It may well be that Peking views Japan's resurgence as ultimately leading to a revival of Japanese militarism and a revitalization of the "Greater East Asia Co-Prosperity Sphere." China notes with dismay that the Japanese military (properly, Self-Defense Forces) numbers nearly 300,000. Consequently, Peking fears that the balance of power in Asia may tilt in Japan's favor, leading to war, and would like Washington to exercise restraint on Tokyo.

The US has contributed to a rapprochement between Peking and Tokyo by encouraging negotiations between the two Asian powers. Prime Minister Tanaka has met with Chou En-lai in Peking, and, at the time of this writing, the creation of diplomatic ties seems a virtual certainty. By encouraging Japan to negotiate with China, the US is apparently committed to a policy of balancing power and settling disputes in Asia through negotiation; yet it is this policy that makes the issue of Taiwan more complicated.

The US continues to recognize the Nationalist government of Chiang Kai-shek as the *de jure* government of China and maintains support of that government through the mutual defense treaty. The joint communiqué issued by President Nixon and Premier Chou En-lai in Peking reaffirmed that Taiwan is an integral part of China, assuring the Chinese that Washington will not adopt an "independent Taiwan" policy.

As is true of international politics, past decisions create the present and are not easily retracted. When the US opted to support the Chiang regime after the outbreak of the Korean War and continued in that decision through treaties and aid over the years, it contributed to the present power alignment in Asia. The immediate abandonment of Taiwan might have repercussions throughout Asia and

could invite military confrontations. For example, the Chinese Communists might decide to attack Taiwan in order to achieve immediate unification. South Korea, fearing loss of US support, might decide to launch an attack against North Korea. Japan might decide to use military force to protect its economic interests in Asia before China can become an effective competitor. Of course, some of these possibilities are not very probable, but they would be sufficiently real to complicate US disengagement from Taiwan. However, as the President has said, the United States intends to maintain its defense commitment to the Republic of China.

Balance Through Negotiations

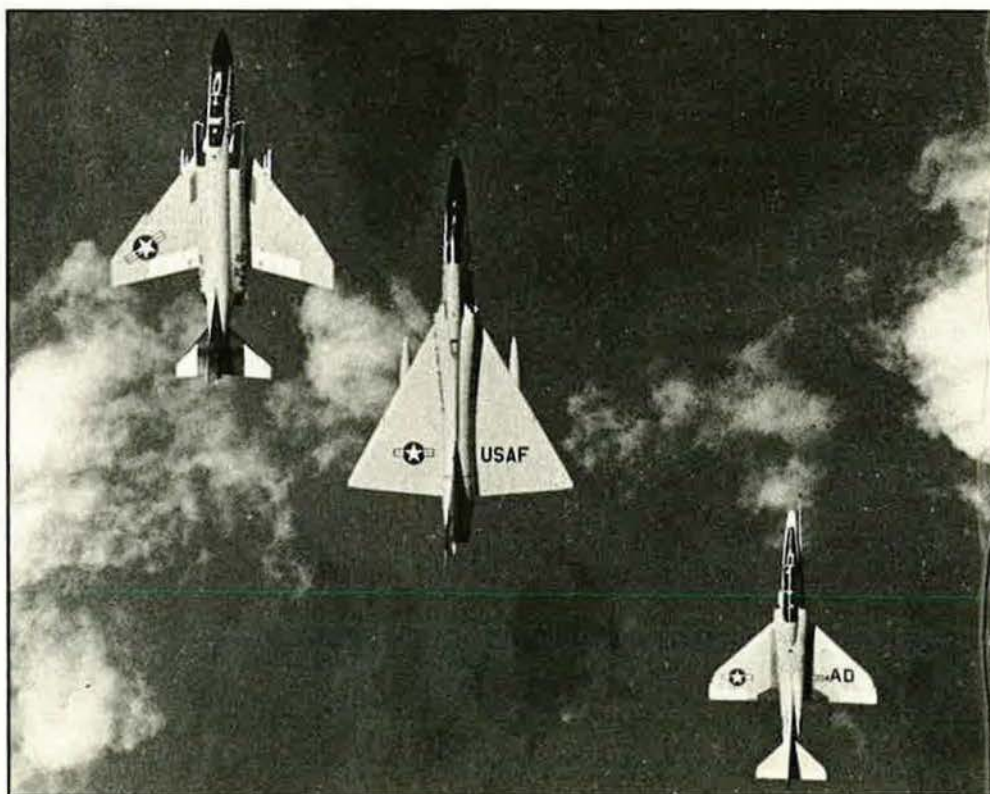
Nevertheless, it is evident that both US and Chinese policy-makers perceive that attempting a balance of power through negotiations is the best method of supporting interests at present; consequently, negotiations will likely continue. The US has negotiated with the Soviet Union on arms limitations, on the Middle East, and on a variety of other issues. China is seeking negotiations with the US and Japan. If the US negotiating position is to remain viable, US leaders should insist that mutual reductions in tension accompany a reduction of US military power in Asia. Japan, Taiwan, South Korea, North and South Vietnam, and other nations affected by US force reductions must be included in any negotiations that affect their vital interests.

The process of improving relations between China and the US will necessarily be gradual and arduous. Ideology will continue to pose problems as will the different cultural and economic foundations of the two societies; nevertheless, conditions for better understanding have been established. By recognizing that China is a power in Asia and a potential world power, and by demonstrating a willingness to reduce its military presence in Asia, the US is contributing to an international system that hopefully can avoid war in the settlement of problems. China, by making a special effort to promote understanding of its interests through a softening of "ideological rhetoric" and by conducting an astute diplomacy, has also demonstrated a willingness to work for a future system of relations that can minimize the likelihood of war.

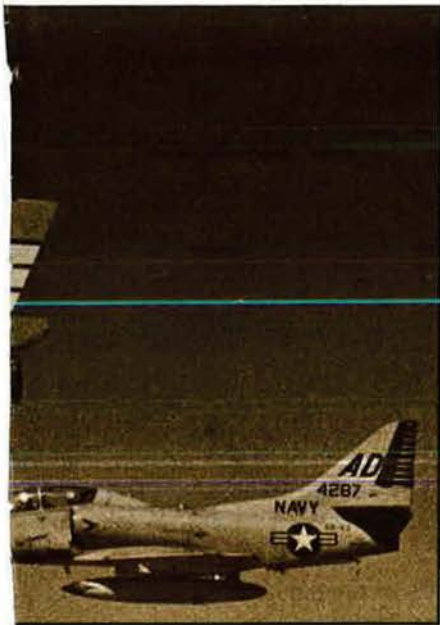
Whether lasting peace will be the ultimate result of the new understanding is, of course, uncertain. Pitfalls for policy are far too many to predict the final outcome. However, the efforts by both sides to communicate and to work toward more understanding should be applauded by all. It is this understanding that constitutes the basis for the new emerging relationship between China and the United States. ■

The author, 1st Lt. William R. Heaton, Jr., holds a Ph.D. in Political Science from the University of California, Berkeley, where he specialized in East Asian politics. He received a commission after completing AFROTC at Brigham Young University in 1967 and delayed going on active duty until he had completed graduate work in 1971. He has published numerous articles on China in a variety of journals, including The China Quarterly, Asian Survey, the Mongolia Society Bulletin, and the Far Eastern Economic Review. He is now in his first assignment on active duty in the Air Force and is stationed in Southeast Asia.

Big guns in the US's air arsenal, from left in both photos below, a Navy F-4 Phantom, USAF's F-106, and Navy's A-4 Skyhawk.



Throughout the history of aerial warfare, it has been axiomatic that, while the performance of an aircraft bears heavily on the outcome of a dogfight, nothing can substitute for an individual pilot's training and tactical experience. This article describes a unique air combat training program designed specifically to sharpen fighter pilot skills. Air Force fighter jocks, in league with Navy and Marine pilots, currently are expanding the limits of their capabilities in . . .



Dissimilar Aerial Combat Tactics -

NEW TECHNIQUES
IN BATTLE TRAINING

By Capt. Donald D. Carson, USAF

FOR THE past two years, F-106 fighter-interceptor pilots of the Aerospace Defense Command have participated with Naval and Marine fighter squadrons in a specialized training program called Dissimilar Aerial Combat Tactics, or ACT for short. The F-106 Delta Darts have flown more than 6,000 missions with Navy and Marine Corps F-4B and J Phantoms and with A-4 Skyhawks from Naval Air Stations (NAS), Miramar, Calif.; Oceana, Va.; Point Mugu, Calif.; Key West, Fla.; and El Toro Marine Corps Air Station (MCAS), Calif.

The Aerospace Defense Command and its Navy/Marine counterparts believe in a realistic and comprehensive Aerial Combat Maneuvering (ACM) program—Navy jargon for ACT—and favor the idea

of flying against unlike types of aircraft. ADC tries to expose its pilots to every possible type of threat in a controlled situation where their learning can be optimized.

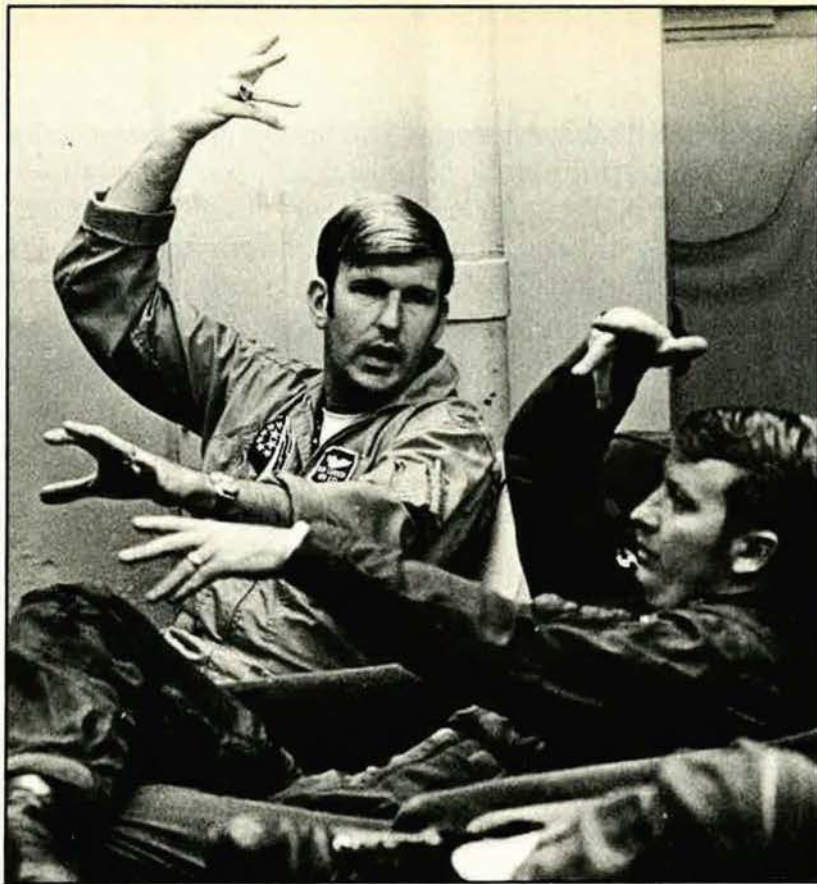
Results: Positive

Almost every MIG shot down by Navy pilots after the renewal of aerial operations in North Vietnam last April was bagged by a pilot who had participated in this type of dissimilar training for aerial combat. The Navy's losses to MIGs also were drastically cut after the start of the ACT program.

ADC emphasized from the beginning that this training must be realistic if its pilots were to get full benefit from it, but command headquarters also realized the impor-

tance of doing it safely. Some people believe that an ACT program is inherently dangerous. I disagree. In two years of extensive dissimilar ACT flying, ADC has not had an accident or incident in any way related to the program.

During an ACT engagement, pilots often operate their aircraft in areas of its performance envelope not required during normal missions, but as long as the program is closely monitored and each participant is properly checked out, there is little, if any, additional risk. The danger lies not in finding yourself in an unfamiliar situation, but in not knowing how to get out of it. ACT training gives each pilot a chance to fly his aircraft to its limits and to learn how it will perform in this environment.



The author, Captain Carson, left, discusses an ACT mission in which safety is a key element.

Another benefit of the ACT program is the confident, pride-in-yourself-and-your-aircraft attitude that optimum training promotes. A positive attitude is a difficult commodity on which to place a value, yet having it makes a man who flies fighters a fighter pilot.

How It All Started

Engagements against dissimilar aircraft have been a part of ADC's aerial combat training program since 1967. Our first ACT instructors were trained at the USAF Fighter Weapons School at Nellis AFB, Nev., early that year. These pilots flew their F-106s against F-4s and F-100 Supersabres of the Tactical Air Command to gain maximum aerial combat experience. In a continuation program, each F-106 fighter-interceptor squadron was scheduled to participate in dissimilar training. The F-106 squadrons went to Nellis AFB for a week of ACT flying with the Fighter Weapons School pilots. One result was the development of new and improved tactics for the F-106.

In 1968, ADC's 48th Fighter Interceptor Squadron (FIS), Langley AFB, Va., replaced the 318th FIS in Korea in response to the *USS Pueblo* incident. While in Korea, the 48th participated in ADC's project Fresh Storm, which established dissimilar ACT training with Fifth Air Force F-4s, F-100s, and F-105 Thunderchiefs. Training was also conducted with Republic of Korea F-5 Freedom Fighters. This program gave further evidence of the value of a comprehensive dissimilar ACT program.

When the F-106 squadrons returned from the Korean deployment, ACT continued at the USAF Interceptor Weapons School, Tyn dall AFB, Fla. This continuing ACT program is now called College Dart. The first adversaries for the F-106 were ADC's F-102 Delta Dagger and F-104 Starfighter aircraft. As these aircraft left the active USAF inventory (only one active-duty F-102 squadron remains in ADC today), a new source of dissimilar training was sought. In 1970, ADC completed negotiations for a dissimilar ACT program with the US Navy. The first ADC-Navy ACT training exercise was conducted at Miramar NAS between the 84th FIS and VF-



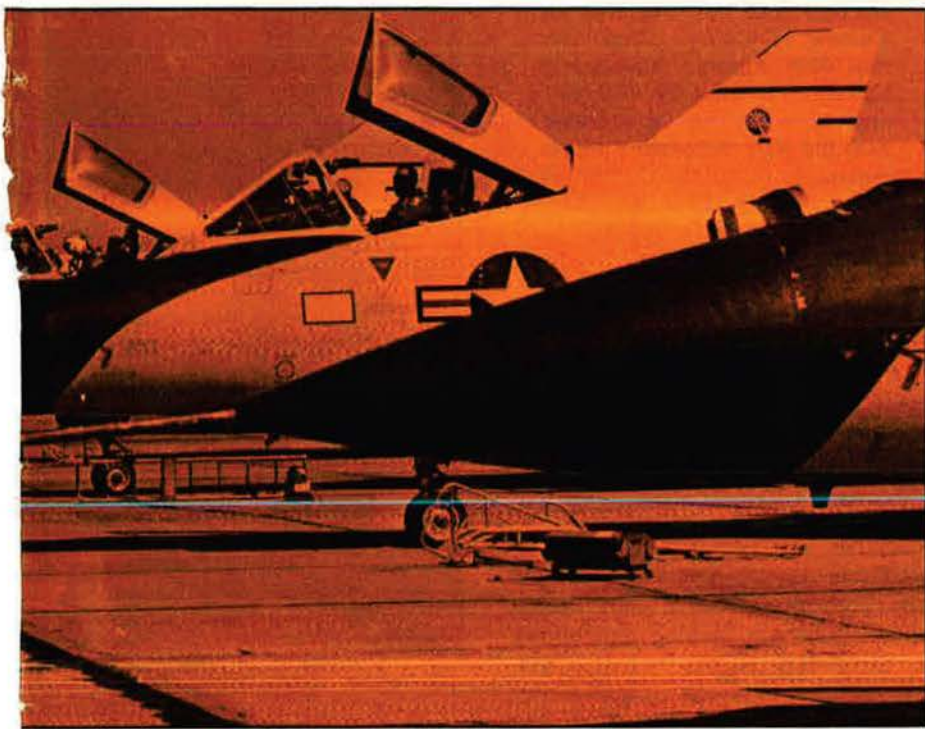
121 of the Navy F-4 Fighter Weapons School.

The Program Today

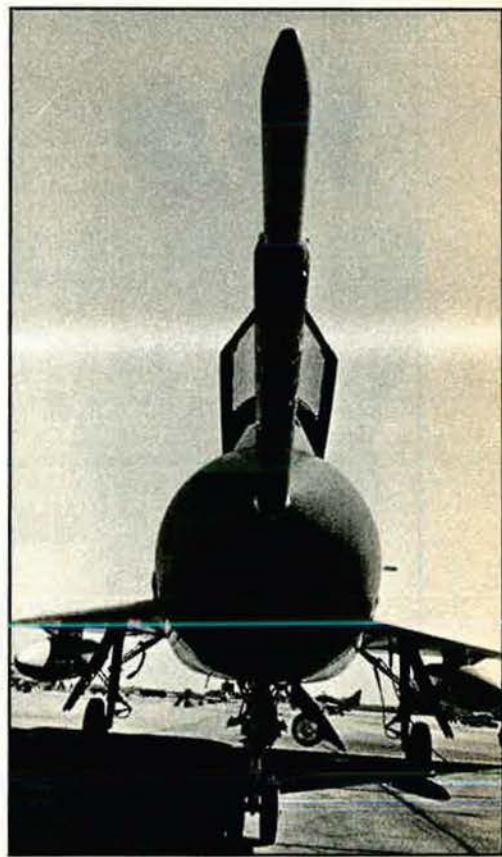
Today, every ADC F-106 squadron participates regularly in training with the top Navy and Marine fighter squadrons, and recently training has been resumed with the Tactical Air Command. The pilots involved feel it is an outstanding training system. Lt. Randy Cunningham, the Navy's first ace since the Korean War, attributes his success against North Vietnam's MIGs to the skills and aerial techniques he developed during dissimilar ACT training.

Capt. Richard S. (Steve) Ritchie, the Air Force's first ace in the Vietnam War, also has praised dissimilar ACT training. Captain Ritchie participated in it while instructing at the USAF Fighter Weapons School. Commenting on the ACT program, he said, "I think it is the ultimate in air combat training. I feel it is absolutely the best way to train."

F-106 Delta Darts lined up on the runway at Oceana Naval Air Station.



A needle-nosed 48th FIS Delta Dart seems almost wingless viewed from this angle.



His Weapons Systems Officer and the leading ace of the Vietnam conflict with six MIG-21s to his credit, Capt. Charles B. (Chuck) De-Bellevue, thinks that "the first time you see another type airplane should not be in the combat arena, and it definitely should not be a MIG. It should be something similar to a MIG though, so you can get your procedures down. When 'fighting' an F-4 against another F-4, basically all you are doing is pitting pilot against pilot and not using the whole ACT concept."

Detachment 1 of VF-101 at Key West NAS is the East Coast Naval Aerial Combat School. It is here that the Navy fighter pilots of the Atlantic Fleet sharpen their skills. Navy Lt. Peter Hunt, training officer of Detachment 1, says, "Dissimilar training is the greatest way of teaching ACT that I have seen. We go out of our way to schedule missions with the Air Force's F-106. Every time we fly our F-4s or A-4s against a different type of aircraft, we learn something. I think that all the in-

structors here agree that the first time we fly against a different type of fighter, we underestimate its capabilities. The F-106 certainly proved to be a surprise. The way it turns is amazing! I feel that dissimilar ACT is the only way to go. I'm glad that I've had an opportunity to meet different types of aircraft where the 20 'Mike Mike' and missiles are not flying."

Lt. Cmdr. Joe Timlin, scheduling officer of Navy Fighter Wing 1 at NAS Oceana, schedules Navy fighters frequently with F-106s of the 48th FIS from Langley AFB. "I have pilots knocking at my door wanting to schedule ACM events," commented Commander Timlin. "They realize the benefits of training with dissimilar aircraft. The F-106 is a desirable 'aggressor' because it so closely resembles the MIG-21 in terms of maneuverability and performance."

The outstanding performance of the F-106 surprises most pilots who fly against it for the first time. All ordnance of the F-106 is carried

internally, which eliminates a major source of drag found in many fighters. Even when facing an opponent who flies without external fuel tanks, the F-106 can easily outperform most of them because of its clean configuration and low wing loading. (Wing loading is the weight each square inch of the wing surface must support when flying. The less weight per square inch, the better the turn performance of an aircraft.)

Once empty, the external fuel tanks of the F-106 do not impose speed or "G" restrictions on the aircraft and can even be jettisoned if the situation warrants. However, an F-106 with tanks installed will do approximately Mach 2, straight and level—something few fighters can claim.

ACT Tactics

ADC realized from the outset that to extract the greatest benefit from dissimilar training there must be accurate documentation of the mis-

Pilots check procedures before an ACT mission.



sions flown and the lessons learned. Flight leaders fill out a debriefing report that includes a detailed description of each air-to-air engagement and its outcome.

These reports are kept on file, accessible to every squadron pilot. The mission debriefings are conducted face-to-face to ensure a complete and accurate review of what happened and what was learned by all participants. As ADC gained experience in ACT, there have been many improvements in our tactics. Navy pilots have also refined their tactics as a result of experience gained during this interservice training.

The F-106 tactics used in a fighter-vs.-fighter engagement differ from the fighter-vs.-bomber intercept tactics that are also an integral part of the ADC air defense mission. ADC tactics against other fighters are a synthesis of the best points of the "double-attack," "loose-ducee," and British "coordinated-pair" tactics. ADC has found that the so-called "six-pac" tactics are the most effective method of employing the F-106 in a fighter-vs.-fighter situation. The mutual sup-

About the Author

Capt. Donald D. Carson is a fighter pilot with more than 1,700 hours of single-engine fighter time. A 1964 graduate of the Virginia Military Institute, he has flown 131 combat missions as an F-105 Wild Weasel pilot. He was the Air Combat Training officer for the 48th Fighter Interceptor Squadron at Langley AFB, Va., and was closely associated with the ACT program from its beginning. Captain Carson is now assigned to ADC Headquarters as an Information Officer.

port and flexibility of six-pac make it far superior to any other application of the F-106 in air combat. With GCI control, it is even more effective.

These tactics are built around the high performance and exceptional subsonic turning capabilities of the F-106. However, I must emphasize that although six-pac tactics are extremely well suited to the unique flight characteristics of the F-106, I do not advocate that all fighters abandon their own tactics and adopt ADC's six-pac tactics. However, with a minimum of modification, these tactics would be well suited to the generation of fighters about to be born, including the F-15 Eagle and F-14 Tomcat.

For security reasons, the Air Force declines to provide detailed information on six-pac tactics. The earlier tactics mentioned by the author are generally based on two-ship combat elements with the wingman in each element covering his leader's tail, while most or all of the shooting is done by the leader. Six-pac apparently allows the wingman a greater degree of coordinated independence and makes better use of his firepower.—THE EDITORS

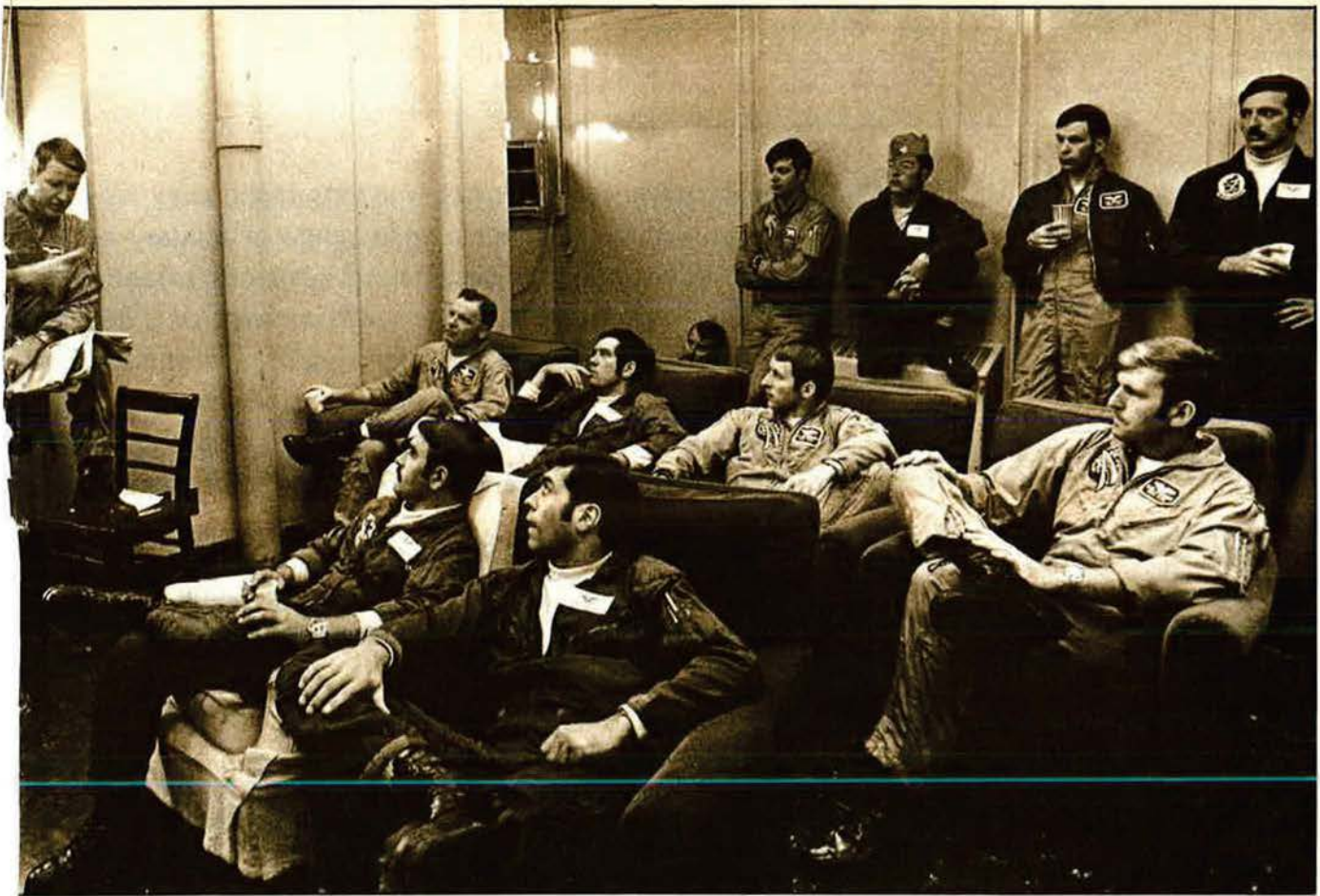
Aerial combat training brings out the discipline, flight integrity, and teamwork that is vital to the successful employment of fighters. Although the F-106 is a single-seat fighter, the pilots must work constantly with the other members of the flight to

Trading experiences is part of the educational process.



function as an effective fighting force. The key to successful ACT flying is mutual support and communication between all members of the flight. It is definitely a team effort.

ACT-trained F-106 pilots have learned to exploit the strengths of their aircraft by bringing the fight into the environment in which their aircraft will operate most effectively, rather than relying on pilot skills alone to give them an advantage. They also have been exposed to the tactics of pilots from many different fighter squadrons. Every fighter pilot has his own bag of tricks, and the more pilots he can fly against, the better his chances are of seeing all, or at least most, of the tricks. Dissimilar ACT gives aircrews the best opportunity to meet every type of threat in a training environment, and not, for the very first time, over hostile territory. If they should make a mistake, the only thing that gets shot down is their pride.



A debriefing session commands the attention of pilots of the 48th FIS and their Navy colleagues.

Help From New Hardware

There is no doubt that the extra set of eyeballs in the two-seated F-4 is of great value during a combat engagement. It has been a major factor in the Phantom's success against MIGs in Southeast Asia. The F-4 crew has one man to watch the flight leader and another to watch the adversary. In this respect, the F-4 has a decided advantage over the F-106. However, the long-awaited clear canopy for the F-106 will alleviate present visibility restrictions and put the Delta Dart on more equal terms with other fighter aircraft.

One of the biggest boons to the F-106 pilot was ADC's recent "head-up" infrared lock-on capability, which allows a pilot to "lock-on" to the target and fire his missiles without ever looking inside the cockpit. This command-wide modification, a direct result of the ACT program, greatly increased the pilot's capabilities and was one of the most

significant improvements for a hard maneuvering fighter-vs.-fighter engagement.

The F-106 still lacks a short-range dogfight missile or a gun. There is no argument about the value of good long-range missiles and rockets, such as the Falcon and Genie, which the F-106 now carries. However, when it gets to a close-in maneuvering dogfight, there is no substitute for a weapon that can be used at minimum ranges.

Many of the early MIG kills of the Vietnam conflict were by F-105s, which were attacked when heavily laden with bombs and not very maneuverable. Yet, the Thud managed to shoot down a surprising number of MIGs by taking advantage of a quick gunshot. Conversely, many MIGs got away from F-4s that had maneuvered into good six o'clock position, but were in too close for effective missile use. This has changed, and the F-4s now have both a gun and a short-range Sparrow dogfight missile, which has

proved to be a tremendous asset during close-in air battles. These missiles have been even more effective than a gun in recent engagements over Southeast Asia. The F-14 and F-15 will both have short-range missiles and a gun to complement their long-range intercept missiles.

The F-106 is scheduled to be modified with a 20-mm gun in the near future. The gun will greatly improve the F-106's capabilities as an air-to-air fighter. However, there is still a need for a good short-range dogfight missile to supplement the present F-106 armament system.

Aerospace Defense Command's dissimilar ACT program has proved to be a resounding success. The F-106 pilots of ADC are highly trained in the skills of aerial combat. They now form a base from which the command can refine its expertise in aerial warfare, be it in the interception of manned bombers or the destruction of enemy fighter aircraft. ■

SOVIET DEVELOPMENTS

Recent advances in Soviet weapons technology have been significant and affect a wide range of military research and development. These broad advances extend from a tracked, mobile ICBM system with a range of 3,500 miles to a maneuverable, nuclear-tipped naval missile and a new submarine-launched ballistic missile with a range of more than 4,100 miles. Although these developments do not violate the SALT I accord, they clearly point toward an . . .

By Edgar Ulsamer

SENIOR EDITOR, AIR FORCE MAGAZINE

THE Soviet Union has not flight-tested multiple, individually targetable reentry vehicles (MIRVs) for her ICBMs and submarine-launched ballistic missiles, nor is she likely to do so in the immediate future, according to authoritative information just made available to AIR FORCE Magazine.

At first glance, this is surprising. MIRVing offers the unique and, because of SALT I, especially topical advantage of multiplying the number of nuclear warheads that can be deployed by a fixed number of missiles. Secondly, it is reasonable to assume that the Soviets know how to build the post-boost "bus" that places the system's individual reentry vehicles (RVs) on their separate targets. But US analysts believe that the Soviets have not yet been able to develop the truly sophisticated and highly accurate guidance systems without which MIRVing makes little sense.

To illustrate this point, experts point at the critical and complex maneuvers that a MIRVed system of the Minuteman III type must be able to execute with extreme precision. The key to accurate delivery of multiple warheads is the guidance system of the post-boost bus. During the initial boost phase, that guidance system senses trajectory or path errors and issues commands to correct them. As soon as the booster has reached a trajectory that is roughly correct for the first assigned target, the bus separates from the third stage of the booster. At that point, some guidance errors may still remain, but the bus's inertial guidance system is equipped to sense deviations and, with the help of the post-boost propulsion system, corrects them.

Once the post-boost delivery vehicle is on

the corrected trajectory, the guidance system turns the bus into proper position to eject several chaff clouds and the first RV. The RV is always deployed in one of the chaff clouds, which blind the enemy radar. The system selects a different cloud for each RV deployment in order to hinder interception.

Once the first "train" of objects has been released, the bus is turned into position to fire its propulsion system, which then places the vehicle on a new trajectory toward its next target. Subsequently, the process of deploying another RV in a train of chaff clouds is repeated.

These operations continue until all RVs and chaff clouds have been placed on their planned trajectories. All these actions are controlled by and depend on the bus's guidance system.

The highly accurate and versatile guidance system that makes possible the MIRVing of Minuteman III was developed by the United States several years ago. One of its fundamental features is the substitution of gas-bearing gyros for the previously used ball-bearing kind. Ball-bearing gyros, regardless of how carefully designed and engineered, are subject to minute amounts of friction. This reduces accuracy to a degree that is unsuitable for MIRVed strategic missiles. (This is not true for the Soviet Union's multiple reentry vehicle, or MRV, which releases several warheads separately but without change in direction on the part of the launch vehicle.)

The Soviet Union, up to now, appears to have been unable to master the gas-bearing inertial guidance technology. At any rate, analyses of Russia's missile and space activities have led to the conclusion that her guidance

INCREASING MOMENTUM IN SOVIET STRATEGIC SYSTEMS

systems are several years behind those of the United States.

Advancing Soviet Weapons Technologies

On the other hand, there is substantial evidence that the Soviets are making up for their deficiencies in guidance technology by other means. The most obvious is their arsenal of more than 300 SS-9 missile giants, whose enormous warheads provide the Soviet Union with the option of attacking hardened missile silos in the United States. The SS-9s accomplish this by sheer size and without need for high accuracy. (Under the Soviet Union's code of nuclear ethics, the term "first strike" is never used. In its place the morally more palatable phrase "preemptive strike on warning" has been created, but denotes the same objective.)

Some significant improvements of the SS-9 missile system are being made by the Soviets at this time. These include additional hardening of some of the SS-9 silos and a new launch system that makes it possible to use these silos

"Present Soviet warheads are believed to have terminal speeds of about Mach 1, compared to US high Beta designs, which have speeds of around Mach 10."

for even larger missiles than the present generation of SS-9s. The new launch technique is based on catapulting the missile out of its silo prior to ignition of its liquid-fuel rocket motor. This eliminates the bulky and heavy shielding required to protect the missile in underground launches.

Also a new development in Soviet RV technology has been observed since the conclusion of SALT I: Flight-testing of RVs with higher

reentry speed coefficients (also referred to as Beta factor) has been noted. The higher "coefficients" improve accuracy. Present Soviet warheads are believed to have terminal speeds of about Mach 1, compared to US high Beta designs, which have speeds of around Mach 10. The slower the reentry speed, the greater the effect of wind and other atmospheric factors on the vehicle's accuracy. The Soviets have yet

"Of special importance is evidence of a fully-operational, mobile, land-based nuclear-armed missile system, which uses a 3,500-mile-range ballistic missile and an Army tank-like launch vehicle."

to demonstrate reentry coefficients or guidance technology comparable to that of US missiles.

Mobile Soviet Ballistic Missile

A number of other advances in Soviet weapons technology have been observed recently. The scope of these programs suggests a quickening of the Soviet military R&D efforts and a further tilting of the balance of strategic power in favor of the Soviet Union. There is, however, no evidence of any infringement of the SALT I accord.

Of special importance is evidence of a fully operational, mobile, land-based nuclear-armed missile system, which uses a 3,500-mile-range ballistic missile and an Army tank-like launch vehicle. While this system is considered to be relatively unsophisticated, there is reason to believe that the Soviets are working on an advanced version. The Soviets pointedly refused to include mobile land-based ballistic missile systems in the numerical ceilings imposed on

the strategic forces of the US and the USSR by the SALT I accord.

In the area of naval systems, test firings of a new medium-range nuclear missile from submarines have been observed. The missile has a range of about 200 miles, employs an onboard computer, and exhibits unique performance characteristics. The propulsion system shuts off after the missile has traveled about thirty miles, scans—presumably to acquire its target and to convey navigational information to the computer—and then its engine relights. The process can be repeated several times and appears to provide the missile with sufficient accuracy to be fully effective against naval task forces. The system appears capable of adjusting the path of its warhead by several miles—thus enhancing its ability to strike at naval task forces while in motion.

While it is not yet possible to predict precisely how the Soviets will use the new missile, it can be safely assumed that it will operate in concert with observation satellites. This is

“Recent firings of a new missile, to be deployed on the new Delta-class, nuclear-powered Soviet submarines, have covered a range of more than 4,100 nautical miles. This is about twenty-five percent more range than US authorities had estimated as recently as last fall.”

based on the notion that the Soviets will use satellites to locate and track hostile naval forces. But because such targets are mobile, any attack against them by a standoff weapon must include the ability to track them while the attacking warhead is being delivered. This theory gains further credibility because the present Soviet system is flawed in the sense that it relies heavily on foreign air bases.

Present Soviet strategy for coping with US naval forces on the high seas pivots on short-range cruise missiles that are deployed on missile cruisers, destroyers, and submarines. The “eyes” of these weapons are naval reconnaissance versions of the Bear bomber, which have been observed in all ocean areas of interest to the Soviet Union, including the Gulf of Mexico. These aircraft serve as a direct radar link with the guided missile systems and provide the launch crews with video information about the targets. This enables the shipboard operators to guide the weapon to its target in real time.

Bears currently operate into Cuba to cover the Atlantic and have staged through India into the Indian Ocean. The new 200-mile-range missile may be capable of operating independently of the Bear naval reconnaissance aircraft, thus enhancing the Soviet antinaval capabilities.

New SS-NX-8 Fleet Ballistic Missile

Another key area of Soviet weapon technology marked by significant improvements involves submarine-launched ballistic missiles. Recent firings of a new missile, to be deployed on the new Delta-class, nuclear-powered Soviet submarines, have covered a range of more than 4,100 nautical miles. This is about twenty-five percent more range than US authorities had estimated as recently as last fall.

In addition, these missiles may be equipped with stellar inertial guidance (SIG). This guidance technology, similar in principle to the technique developed by NASA for manned spaceflight, enables a missile to update its inertial guidance system while in flight by triangulating its own position in relation to certain stars. (Similar and even more accurate updating can be obtained through a navigation satellite system such as the Air Force’s 621 system.)

A combination of three factors apparently prompted the Soviets to provide their new SLBM with stellar inertial guidance: the basic imperfections of their guidance technology; the fact that mobile systems compound the guidance problem because their exact location at the time of launch is not known as precisely as in the case of a fixed silo; and the multiplying effect of the missile’s increased range on these two conditions.

Western experts believe that the SS-NX-8 would not have been “strategically credible” without SIG. Western technical experts are quick to point out that SIG can only palliate but not cure the basic Soviet guidance problem. Whatever intrinsic inaccuracies are built into the system continue to remain.

In addition, the missile covers considerable distance between the time of triangulation and the time these values are computed and translated into a position fix, which tends to lower the missile’s overall accuracy. Consequently, a SIG system of the type used by the Soviet SLBMs does not provide the accuracies furnished by the Minuteman III guidance technology.

There is no evidence that the SS-NX-8 missile is capable of flying depressed trajectories. This is a technique for reducing the enemy’s warning time by keeping the missile as low as possible, using the curvature of the earth to hide it from enemy radar as long as possible. ■

Few men have affected the history of aviation more profoundly and enduringly than the doyen of Soviet aeronautics, the late Andrei N. Tupolev. During a brilliant career that extended over five decades, Tupolev and his design bureau created more than 150 prototypes and some seventy production aircraft, which became the mainstay of Soviet military and commercial aviation. His bombers saw service in the Spanish Civil War, World War II, and the Cold War. His commercial aircraft helped to make Aeroflot the world's largest airline. His most recent, and perhaps crowning achievements were the Mach 2 "Backfire" strategic bomber and the TU-144, the world's first SST . . .

An Epitaph for Russia's Aviation Giant

A. N. Tupolev

By Col. William F. Scott, USAF (Ret.)

THE DEATH of Andrei Nikolayevich Tupolev in Moscow on December 23, 1972, received worldwide attention. Few men in the aviation world have equaled the power, prestige, or genius of this remarkable man who headed one of the USSR's leading aircraft design bureaus.

Not much can be added to what the Western press had to say about Tupolev's accomplishments. But what the obituaries did not tell of his life—what some writers may not have known—is at least as important as Tupolev's reported achievements. In a sense, his career epitomized the entire Soviet system. Hence, it is worth a closer look at Tupolev's life, for he was a member of the Soviet hierarchy that has created a military research and development base and armed forces that have overtaken those of the United States, and show little indication of slowing down. Soviet leaders have done this with a gross national product about one-third that of the US.

First, a word about Tupolev's achievements. He was born in 1888 in the village of Pustozovo, in the Tver Province, and went to Moscow in 1908, where he entered the Moscow Higher Technical School and worked under the leadership of the Russian aviation pioneer N. Ye. Zhukovski. In 1918, after finishing school, Tupolev became a key figure at the Central Aerodynamics Institute (TSAGI), the center of the Soviet aviation world at the time. In 1922, he began his construction career at TSAGI, where he headed a group of specialists.

There followed a long series of triumphs in developing large aircraft, as the leader of the design bureau he headed for forty years prior to his death. To military airmen, the best

known of those aircraft probably are the Soviet strategic bombers—the TU-16 Badger, TU-20 Bear, and TU-22 Blinder.

Tupolev also designed many of the USSR's transport aircraft, some of them little more than modifications of his bombers. US visitors to the Soviet Union probably have flown more in Tupolev-designed aircraft than in any other type. The best-known Soviet transport over the past decade has been the TU-104, perhaps the most uncomfortable jet transport ever put in service. It is simply another version of the TU-16 Badger.

Another of Tupolev's aircraft, the TU-114, amazed US aviation circles with its size when

Academician Andrei Tupolev, three times Hero of Socialist Labor, is shown here with his son and close collaborator, Alexei Tupolev. Tupolev designed his first aircraft, the ANT-1, more than fifty years ago. Its weight of less than 1,000 pounds and speed of about eighty miles per hour were a far cry from the Mach 2.35 speed of the TU-144 SST.



—Novosti Press Agency photo



This 1968 photo shows Mr. Tupolev at the time of his eightieth birthday. Over the past half century, Tupolev's design bureau developed more than seventy production aircraft which, in turn, claimed a total of seventy-seven world records. Among the aircraft are the well-known Soviet strategic bombers, Badger, Bear, and Blinder.

--Novosti Press Agency photo

it brought Nikita Khrushchev to Andrews AFB near Washington in 1959. Later, in 1962, the TU-114 was the only Soviet transport that could fly nonstop from the USSR to Cuba. The passenger comfort of the TU-114, which is a civil counterpart of the TU-20 Bear bomber, is approximately the same as that of the C-124, known to US pilots as "Old Shakey."

Today, two more aircraft that bear the Tupolev name represent current Soviet efforts to strengthen the USSR's position in commercial aviation. One, the TU-154, is a three-engine transport resembling the Boeing 727. Not a modification of a Soviet bomber, it was first put into passenger service in late 1971. The TU-154 is the first Soviet jet transport that approaches the comfort of a US-designed aircraft.

The second aircraft, the TU-144 supersonic transport, is internationally known. When seen at the 1971 Paris Air Show, parked by the British/French Concord, observers referred to it as the "Concordski." Tupolev, like other Soviet designers, did not waste time designing

The author, Col. William F. Scott, a 1943 graduate of the US Military Academy, recently retired from the Air Force at the completion of his second tour as US Air Attaché in Moscow. During World War II, Colonel Scott was a bomber pilot in the European Theater. He has held a variety of staff positions, several of them associated with the study of Soviet military affairs, an area in which both he and Mrs. Scott are considered to be among the leading US experts.

equipment that could be found elsewhere any more than he hesitated to get double duty out of a bomber development by converting it to a transport.

So much for Tupolev's design achievements. He traveled frequently outside the USSR, including a visit to the US. He was liked and admired by Western industrialists and engineers who knew him. Like many high-ranking Soviet officials, he was a man of wit and urbanity—and he was a genius. But there, any resemblance to the head of a Western aircraft company ends. Tupolev occupied a position of influence within his country that would be neither possible nor tolerated in a Western democracy.

To begin with, Tupolev was not only the head of a powerful element of the Soviet aviation industry. He also held the three-star rank of general colonel in the Soviet Armed Forces. At the time of his death, his photograph in full military uniform was carried by leading Soviet newspapers. Below the photograph, the signatures to his obituary were those of the Soviet "who's who," starting with Party Chairman Brezhnev. All members of the Politburo signed, followed by Marshal Grechko, the Minister of Defense, and General Lieutenant of Aviation Bugayev, the Minister of Civil Aviation. After them were the Deputy Ministers of Defense and the leaders of the Soviet aviation industry.

These military and industrial strands were only two in the complex fabric of Tupolev's life, which, to repeat, was a microcosm of the Soviet power structure. He stood near the apex of a military-industrial-scientific-political structure that is completely unknown in the US. As a member of the Soviet Armed Forces, General Colonel Tupolev had direct access to the Minister of Defense. As a scientist and engineer, he had his own research facilities and design bureau. As an "Academician," he had access to members of the Academy of Sciences. As an industrialist, he had his own production plants, such as the modern complex at Voronezh where the TU-144 is being produced. As a Deputy to the Supreme Soviet since 1950, he had access to the governmental power structure.

In its obituaries, the Soviet press omitted a significant fact. Tupolev was picked up in the Stalin purges of the late 1930s and spent five years in prison. The Soviet writer, Aleksandr Solzhenitsyn, describes in his book, *The First Circle*, how scientists and engineers continued working while in special concentration camps.

One of Tupolev's fellow prisoners, Professor G. Z. Ozerov, wrote an account of this period in an underground "samizdat" manuscript, since published by a German firm as *Tupolev's Sharaga*. "Sharaga" means a special scientific

or technical institute staffed by prisoners. Such was Tupolev's value to the USSR that he continued his design work even while in prison. Still more remarkable, he rose to his high position, including his seat as a Deputy to the Supreme Soviet, without ever joining the Communist Party. Communist ideology, it is becoming increasingly clear, sometimes takes a back seat where pragmatic national interests are concerned.

As an important member of the Soviet power structure, Tupolev helped create the several economic worlds of the Soviet Union. The US visitor in Russia sees only one of these worlds—the world that Soviet authorities want him to see. In Moscow, Leningrad, Kiev, and the other cities that he is permitted to visit, he sees a Potemkin village, constructed for his benefit. He stays in hotels that few Soviet citizens can enter and shops in special stores that accept only foreign currency.

Another world is that in which the average Soviet citizen exists. In this world, there is a chronic shortage of even the most basic consumer goods, from shoes to frying pans. Compared to Western Europe, the world of the Soviet citizen appears to have been bypassed by the technological revolution.

An entirely different economic world is that in which the defense industry leadership operates. Few foreigners ever glimpse that world. Were it not for its products, it might be completely unknown, such is the secrecy that surrounds it. Here are designed the space-

craft, the air-to-surface missiles, the ICBMs, the huge radars, the aircraft. Here work the best of the Soviet engineers and scientists. Here are the best managers and designers. There are summer homes and a special lane down the main streets of Moscow, reserved for the chauffeured cars of the intertwined military-industrial-scientific-governmental leadership.

General Colonel Tupolev stood on one of the peaks of this unique combination that exists only in the Soviet Union. It has created military power in the midst of poverty and a tactical flexibility in foreign relations which we can ignore only at our peril.

Tupolev, this major figure in the Soviet power complex, was rewarded at a level that would be difficult to match in the capitalist world. His many awards provided lifetime grants of money. He received other financial returns from his writing. He achieved a status where unlimited amounts of money are taken for granted—a multimillionaire by any standards.

General Colonel Andrei Nikolayevich Tupolev's name is firmly established in the history of aviation. Of equal note, the sharp focus of his interrelated activities illuminates some remote recesses of the Soviet system, which all of us must try to better understand, for the objective of that system is to create a structure of unequaled physical power. The ebb and flow of Soviet "goodwill" should never be allowed to obscure that fact. ■

THE INVISIBLE MAN

Back in the 1950s, I made a night flight in a C-47. The pilot was a captain with an enviable war record in one of the Air Corps's all-black fighter squadrons. The copilot, a recent graduate of an Air Force Jet Fighter School, had never been in an airplane large enough to require two engines. I got the impression during preflight that if I had mentioned propeller pitch, he would have run back to Operations to get a can of it for me. At engine start he was visibly moved by the sight of that big propeller twirling away just outside his window. It was to teach him a little about the "old way" that I was signed on as instructor pilot.

When we leveled off on course, the captain, true to regulations of the day, turned off all white lights in the cockpit and adjusted the red instrument lighting to make the instruments barely visible. In that light, with his blue uniform and black skin, the pilot became invisible. I took my station in the navigator's seat so I could monitor the radios and keep an eye on the copilot.

As we droned along through that perfectly calm night, I realized that the copilot was getting right fidgety. He would lean as far forward as he could and search the left side, then crane his head around and look at the right engine, then check the fuel quantity. When he started repeating this act about once a minute, I decided to go forward and see what was bugging him.

Just as I got within speaking range, the copilot fairly screamed, "For Christ's sake, Captain, turn on some lights! I feel like I'm alone up here!"

—CONTRIBUTED BY LT. COL. LARRY S. HATFIELD, USAF (RET.)

(AIR FORCE Magazine will pay \$10 for each anecdote accepted for publication.)

Vietnam—Ten Years Ago

For some reason, the Special Forces captain seemed especially anxious to return to his post at a little place in the boondocks called Phouc Vinh. Recognizing that in this particular case the shortest distance between two points was a quick jump out of an aircraft in flight, he arranged a singular sort of . . .

usual morning traffic. He leans over my shoulder shortly after the wheels come up. "Sure appreciate this."

"S'all right. Just don't break your neck. I hate paper work."

"No sweat. This is great. I need a jump for pay anyhow."

"Standard altitude?" He nods. "Okay. Where do you want out and do you want to go on your own or on my signal?"

"I'd like to land in the paddies just south of our camp . . . and I've seen a couple of your airdrops. . . . I'll go on your signal."

"Hmphf." Wonder where? "Okay. We'll go over the camp and drop

SPECIAL DELIVERY

IT'S EARLY on a Monday morning at Saigon airport, and the year is 1963. On a secluded cargo-loading ramp a hot-rodding forklift driver is transferring pallets of supplies from a mud-splattered truck to a weary C-47 under my apprehensive eye when a Special Forces captain hurries up.

"Hi. Remember me? I'm Parker. You took my team into Phouc Vinh to set up a camp a couple of months ago."

I remember the trip. Especially the tense moments while his team fanned out to set up a perimeter around us on the unoccupied dirt strip. "Sure. How're you guys doing up there?"

"Pretty well. We've got the place fairly well organized, and there've been a couple of light probes so far. Say, can you give me a ride in there this trip?"

"'Fraid not this time. This load is for Kontum, and we've got a rule against landing en route when we have a load."

Disappointment spreads over his face. "I've got to get back in there this morning. I've been trying to get a ride all weekend."

I glance at his bulging AWOL bag and suppress a knowing smirk. It looks like he has been stretching a weekend in Saigon as far as it

would go. "Well . . . if you want to ride along, we can drop you there on the way back, but it will be some time this afternoon."

"Can't wait that long . . . did you say drop?"

"Uh, yeah. I mean we can land there on the way back."

He persisted. "You do airdrops all the time. How about dropping me off on the way out?"

The idea is a little startling, but then, well, why not? He's obviously qualified, and there's no rule against it that I know of. "You got a parachute?"

"I can get one. Be right back." He turns hurriedly and trots off, the AWOL bag firmly clenched in his hand. I am wondering what he plans to do with it when he jumps. Then the forklift driver bangs a load into the door frame of my already battered airplane and captures my full attention. By the time we finish our little chat, the captain's problems are forgotten.

We have the load tied down and the checklist started when a jeep whips around the corner of a hangar. It slides to a stop on our left just as I reach for the starter switches. The captain scrambles in with parachute gear and the AWOL bag, then we fire up and work our way out to the runway through the

By Maj. Curtis L. Messex,
USAF (Ret.)



a streamer to check the wind on the first pass. I'll give you a green light when it looks good to me on the next pass. What are you going to do with that AWOL bag?"

"Carry it with me."

My look of disbelief brought an explanation of sorts.

"It's no problem, really. I can hang on to it."

"Maybe so, but a good opening shock might tear the handles off."

His face darkens momentarily, then clears. "You have a point there. I'll wrap my arm around it just to make sure."

I shrug and point out the airstrip. His camp's about five kilometers beyond. He stares through the wind-

shield thoughtfully for a minute. Then, "Whatever you do, don't drop me north of the village. It's VC territory from the gates on out."

"Right." He disappears. Gene, the copilot, and I look at each other and shrug simultaneously. Anybody who willingly flings his fragile body out of a perfectly good airplane has got to be nuts.

I switch to interphone. "Loadmaster, pilot, over." No answer. Twisting around in the seat I bellow back through the airplane, "Hey, Charlie, get on interphone!"

Seconds later my headset clicks, and a familiar voice says, "Yes, sir? I was getting a streamer out."

The mind reading that goes on between members of a good team never ceases to amaze. "Okay. That's what I was going to tell you to do. We're about five minutes out."

Diving gently to the proper release altitude, I notice smoke from a small fire streaming south, and comment to Gene, "Pretty good breeze. We'll put the streamer out over the center of the village and see how it looks." The brightly colored, weighted roll of crepe paper drifts about the same as a parachute and will give an indication of any correction needed in my guesstimated release point.

Gene, Charlie, and I settle into the airdrop routine. I nail the altitude and airspeed where I want it, pick my point, and give a thumb signal with my throttle hand. Gene relays the order with light and bell. Charlie pitches the streamer, and I turn hard left to catch sight of it and watch the results. It drifts rapidly, catches in the trees at the southern edge of the small clearing that is our target.

"Charlie, tell the captain I'll give him the signal just short of the north village gate on the next pass."

"Yes, sir." A pause. "He says that looks okay, but don't go any further north."

The routine repeats. The only difference this time is a perceptible lurch as the Green Beret leaves the airplane. At Charlie's call, "He's clear—and has a good chute," I swing around hard again to watch.

"Could you see if he hung onto that AWOL bag, Charlie?"

"No, sir. I couldn't tell."

The captain drifts into a standup landing knee-deep in a rice paddy, collapses his chute, and waves. I rock the wings, increase power, and start climbing to a safer altitude, musing aloud, "Still couldn't see the bag. I suppose there wasn't much in it but civics and a shaving kit anyhow."

Kersky, the engineer, joins the conversation, "No, sir. It was full of money."

"Money?" My notion of a heavy weekend on the Street of Flowers disintegrates.

"Yes, sir. About 50,000 piasters he said. That's why he needed to get there this morning. It was the camp payroll, and this is payday."

The interphone hisses softly while four minds convert piasters to dollars at the official exchange rate. Al, the navigator, gets it first. "According to my computer, that's more than a year's pay . . . can you imagine the paper work he'll have to go through if he's lost that bag?"

Charlie comes back on confidentially. "He didn't lose it."

"How do you know? Did you see it?"

"No, sir. I didn't see it, but he was rolling up his chute when we left. If he'd lost that much money, he'd have been out of that paddy in a dead run to wherever it hit."

"Good thinking, Charlie. How about a heading, Al?"

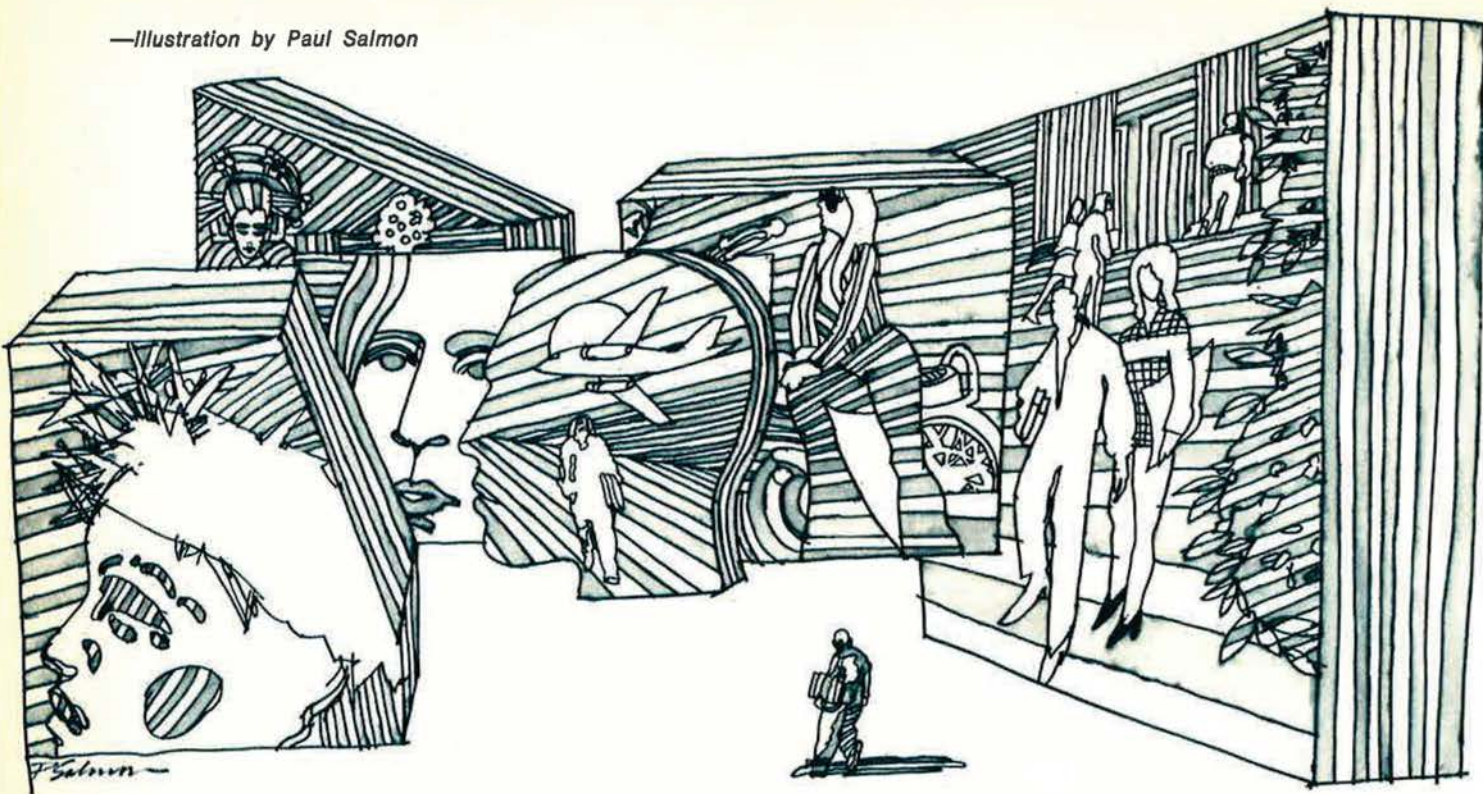
"About 045 to Ban Me Thout, then north. Those Special Forces guys just gotta be crazy. I wouldn't deliver a payroll that way for anybody."

The interphone hisses in quiet agreement for a long moment until someone adds, "Glad they're on our side." ■



—Illustration by Cliff Prine

The author, Curtis L. Messex, is a retired Air Force officer with 1,200 hours of combat time and a total of nearly 10,000 hours in the cockpit. A regular contributor to AIR FORCE Magazine, he now makes his home in Cheney, Wash., where he is a freelance writer and an avid outdoorsman.



Are those birthdays getting harder to take each year? Do you yearn for the vigor and exuberance that seem to be fading as time presses on? Here is the account of one man's rejuvenating experiences when he took the plunge and went . . .

SKINNY-DIPPING IN THE FOUNTAIN OF YOUTH

By Lt. Col.
Frank D. Campbell,
USAF (Ret.)

LAST year I went skinny-dipping in the Fountain of Youth.

Retired, at loose ends, I decided to go back to college and pick up the degree I'd missed by a few courses in 1940. So I climbed into my car, drove seventeen miles to California State College at San Bernardino, and—at age fifty-six—was reborn.

One rainy morning during my first quarter, I walked into the History of Art class at 8:00 a.m. Linda, a classmate, slid into a chair next

to mine. (In California, college students have only one name—their first. After I'd been introduced as "Frank" for the tenth time, I realized this.) "Br-r-r!" she said. "It's cold!" She rubbed her bare feet on the carpeting to warm them. Linda is twenty-two.

Scott, a Vietnam veteran with long hair and a burning ambition to get through college with a straight "A" average, is typical of some of the young veterans I met. He, too, will show up on campus barefoot, but only in clement weather. He was in the Air Force and knows something about weather forecasts.

In the four quarters it has taken me to rack up the degree, I've

learned to love these kids and to understand my own children better. Unlike my classmates in the late '30s, the young men and women going to college today are politically aware, intent on straightening out the world we've given them, and somewhat less than overwhelmed by "the school solution."

They want straight answers. And get them. They generate a give-and-take atmosphere in the lecture halls that keeps the faculty on its toes. The learning situation is alive on both sides of the podium. And sitting around the cafeteria drinking coffee between classes is tantamount

to a course in everyday political science. They have ideas, these young men and women who will be running our country tomorrow, and they express them freely.

Oldsters who decry today's youth could profit by taking a couple of courses with them. These kids are great!

Take Tony. An ex-Marine, on his own since seventeen, he'd gone to work as a railroad brakeman after serving two hitches. Eight years of this convinced him that rolling stock was not in his future. He decided to go back to school and get his degree. Short, wiry, and holder of a sixth degree black belt in karate, Tony is a sculptor. He's always been interested in art, and his surrealistic approach to sculpture is something to see.

To support himself, Tony instructs in karate at the college. He lives in an old farmhouse deep in an abandoned orange grove. I visited him there once. On the front porch was an eight-foot, free-form statue of a geisha girl. Inside, various pieces of statuary of eerie dimensions crowded the rooms. One piece featured a doll's head and multiple arms—a Thai dancer's nightmare.

Like Sabatini's Scaramouche, Tony was ". . . born with the gift of laughter and a sense that the world is mad." This year he discovered poetry. Several of his free-form verses were published in the college literary magazine.

"What will you do when you graduate?" I asked him.

Tony grinned. "Try to keep from starving to death. Oh, I'll keep teaching karate because I believe it's a fine discipline for young people. And I'll continue with sculpture because I like it. It's a crazy world we live in, so I'll hang in there with poetry, too."

Van is a black veteran who took on the administration single-handedly over what he thought was wrong with the system. For days, Van roamed the campus wearing sandwich boards condemning a few professors for what he referred to as their myopic approach to grades, the intellectual yardstick, and ridiculous curriculum requirements. He wrote fiery letters to the editor of the school paper. They were printed.

One day he appeared on campus wearing a flowing white robe and a plastic crown of thorns and carrying a huge wooden cross. Tacked to the cross was a placard. "G-R-A-D-E-S" it spelled out in blood-red ink.

A student met him on a cross-walk between buildings. "It's been done before, Van," he said, "and better!"

Van smiled and trudged on.

Last spring in the student elections for the coming year, Van's persistence and unique advertising methods paid off. He was elected Student Body President for 1972-73.

It was probably coincidental, but during Van's campaign the school administration quietly appointed a task force to look into curriculum requirements.

Then there's Rocky. At eighteen, Rocky enrolled as a freshman. Active in debating in high school, he wants a career in the theater. Or television. Or motion pictures. So, instead of talking about it, he did something. He watched television for hours, studying it. The only way an amateur could appear, he felt, was on a game show. So, with the directness of an unhorsed Indian tracking a buffalo, he wrote the producer of "Password": "I want to be on your show." He received the standard reply with an application blank. He mailed it in and waited. Three weeks. Then he was called to Los Angeles for a preliminary interview. He survived two screening tests and won a place on the show. The celebrities that day were Elizabeth Montgomery and Peter Lawford.

"Peter Lawford was my partner," Rocky told me. "I knew it was going to be tough, so I acted my heart out. After the show, Mr. Lawford told Allen Ludden, the emcee, '. . . that Rocky is the funniest contestant I've ever seen!'"

One swallow does not a summer make, but that bit of action got Rocky a personal contract. And if I know Rocky, you'll be seeing him regularly on your television screens.

Or take Mark. A pre-law student, Mark commuted from San Diego to Cal State. On a motorcycle. It's 110 miles each way. Supporting himself with his cameras, Mark was

the official photographer for the school paper. Frequently he had to stay over to cover night functions.

"Where do you stay when you don't bike back to San Diego?" I asked him.

Mark grinned through his beard. "Oh," he said, "I sleep around. Sometimes I put my sleeping bag under the trees in the park. Sometimes I sleep on a friend's porch. I make out all right."

And he will.

They are great! All of them. And, just rubbing elbows with them, drinking coffee with them, and listening taught me more about today's youth than I ever learned as a parent.

One morning in the cafeteria a man about my age slid into a seat at the table and introduced himself. "Bill," he said. We shook hands. Bill is a retired Air Force pilot, back for his degree.

He took a sip of coffee. "Isn't this terrific?" His smile told me he'd found the Fountain of Youth, too.

I agreed. We talked about classes, professors, and the kids. And we came to the conclusion that Ponce de León was a lousy navigator. Bill finished his coffee and left. He had a class. I watched him walk across the patio toward the Biological Sciences Building. There was a spring in his step you don't see anymore on the flight line—in a man Bill's age.

So, if you're feeling a little run down, or the birthdays are getting harder to take each year, let me suggest an Rx for eternal youth: go skinny-dipping in that fountain at your nearest college.

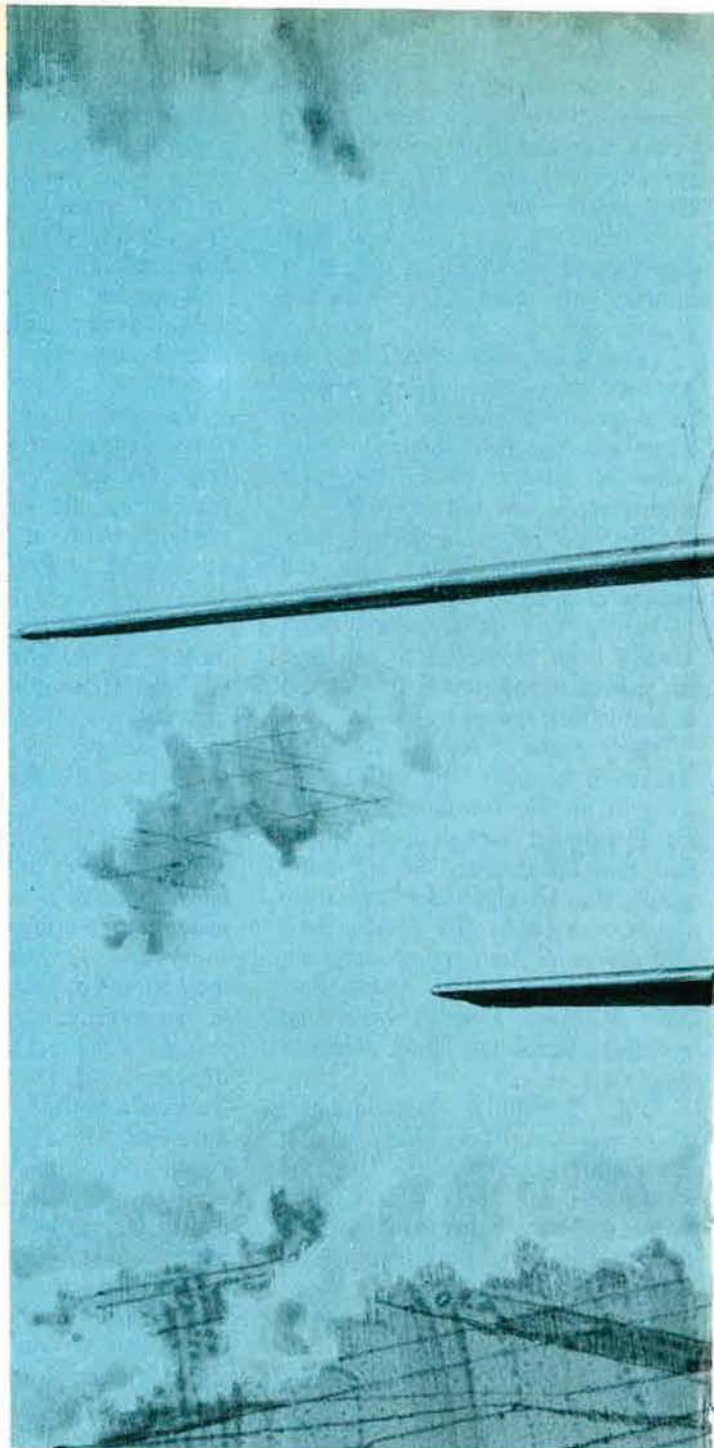
Feet first. ■

The author, Lt. Col. Frank D. Campbell, USAF (Ret.), served as an information officer during his Air Force career. Now living in Redlands, Calif., Colonel Campbell is occupied in a dual role: handling public relations for the American Cancer Society while at the same time attending classes at California State College, San Bernardino, where he is working toward a teaching credential.

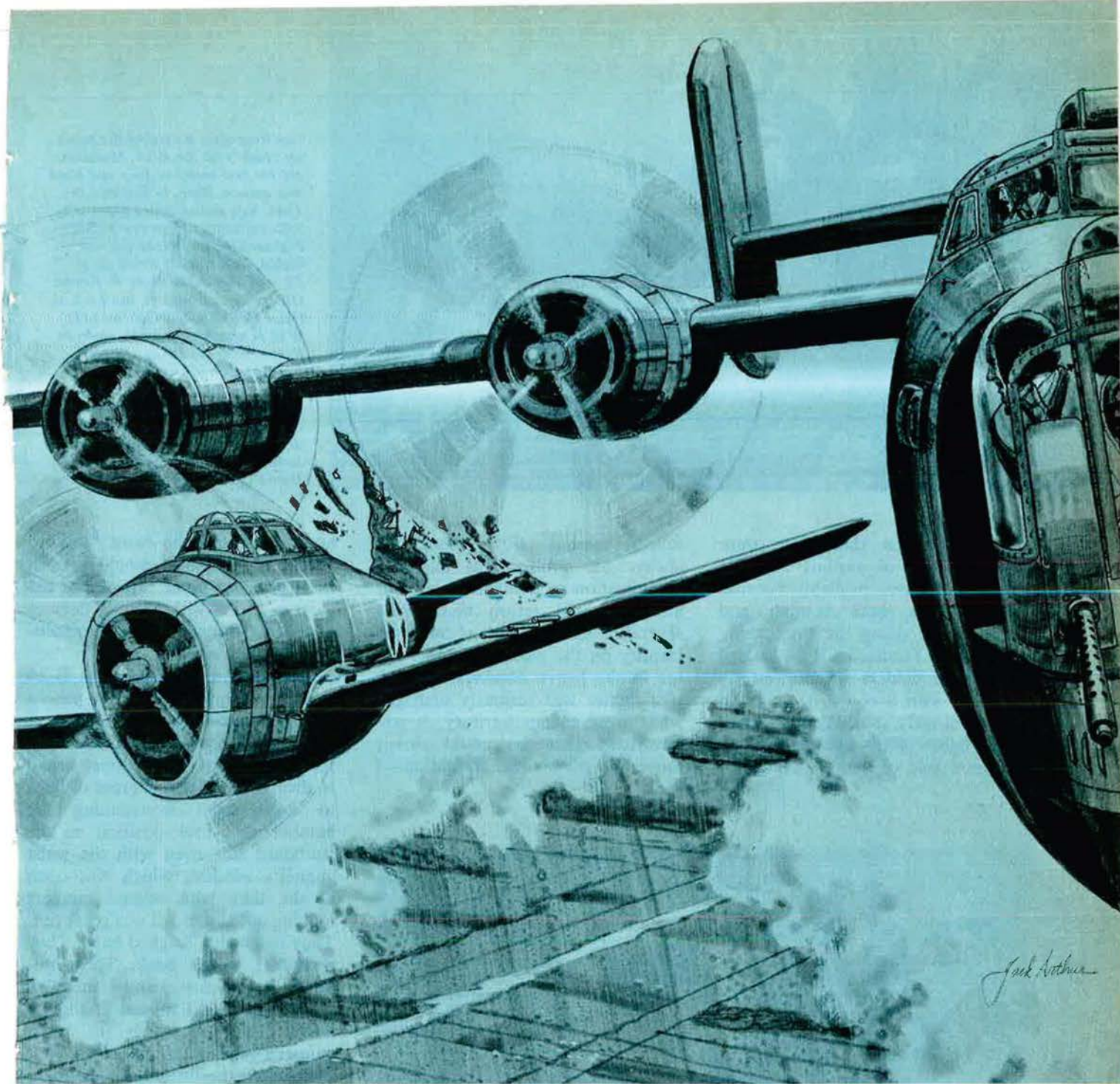
Midair Collision!

Early in World War II, a young Eighth Air Force fighter pilot, destined to become a leading American ace but still looking for his first victory, was involved in a freak flying accident. Here, he relives that chilling, near-fatal incident . . .

THE DAY I GOT MY TAIL TAIL CHEWED OFF



By Col.
Walker M. (Bud) Mahurin,
USAFR



—Illustration by Jack Arthur

THE 56th Group had been standing down for a week because of bad weather over England and Germany. When that happened, the aircraft had a tendency to develop various malfunctions because of the dampness, so it was the custom to fly each one for a short period before going off on a mission. In this case, the group anticipated a mission the following day, and we were all busy checking out our individual aircraft.

The day was delightful and prom-

ised a period of several good days during which the offensive against Germany could be resumed. We had put chairs and benches against the outer wall of our operations building, facing the aerodrome. I had been sitting with members of my flight and squadron before takeoff, and I anticipated returning to the same spot after an uneventful flight.

At that time, the 56th Group was just beginning to use external fuel tanks to extend the range of our P-47s. My own aircraft was fitted

with a 150-gallon external tank we referred to as a “bathtub” because of its peculiar configuration. It actually resembled half a teardrop, and its contour fitted up against the belly of the P-47. We didn’t like these tanks because they affected the performance of the aircraft. They were always dropped on missions when we entered the combat zone.

My takeoff was uneventful, and I planned just to circle the field several times and then land. Once



Not long after surviving the mid-air crash with the B-24, Mahurin got his first aerial victory and soon was an ace. Here, in England in 1944, he's shown (third from left) with colleagues from the 56th Fighter Group. Before the war ended, he'd run his string up to 22, and added 3½ more in Korea. Others here, from left, are Lt. Col. (later Col.) Francis Gabreski (31 WW II victories and 6½ more in Korea, now top living US ace); Bob Johnson (28 victories); Mahurin; and Col. (later Maj. Gen.) Robert B. Landry, then CO of the 56th. Sitting on the wing are Capt. Walter V. Cook (6 victories) and Lt. Col. (later Col.) David C. Schilling (22½ victories).

airborne, I saw that there were many aircraft of various types in the general area, probably because other groups, both bomber and fighter, were doing the same thing as the 56th. I noticed a B-24 headed toward our field in a southwesterly direction with a course that would take it directly over Halesworth.

We fighter pilots tried to keep on the good side of bomber crews for

several reasons. First, there was always the problem of mistaken identification in combat. Often our aircraft would return home with several holes as a result of mistaken identity on the part of gunners flying in the heavy bombers. Second, if a fighter was seriously damaged while over enemy territory, it was advertised that we could slowly move into the bomber formation—I

must emphasize the word “slowly”—and the bombers would protect us all the way home. This latter device was tried with varying degrees of success. Anyway, it paid to cultivate bomber crews.

I decided to join with the B-24 in close formation while it passed over our aerodrome, then break off and land. Because of our overtake speed, this was easily done. I had to drop some fifteen degrees of flaps to keep from overrunning the bomber as I took position on the starboard side even with the waist gunner's window, which was open at the time with several gunners looking out at me. All was great fun. They laughed; I laughed back. They waved; I waved back. They motioned me in closer, and I snuggled up to them. As I moved in slightly below, still even with the waist gunner's position, I tucked my left wing under the fuselage of the B-24 while eventually moving into a position where the arc of my propeller was probably three feet away from the skin of the B-24.

Obviously, there was a limit to this, so I waved “good-bye” after a short period and gradually increased my throttle setting until I was slowly moving forward, perhaps fifteen feet below the bomber so as to clear the propellers.

As I did so, I came into view of the cockpit crew who were by this time peering out the starboard window to see the fun. They waved, and I waved back. Still great fun.

I intended to break away by



Mahurin, here a captain, is congratulated by fellow pilots as he returns to his base in England after a combat mission during which he shot down three enemy aircraft. The date was October 4, 1943.

Col. Walker M. (Bud) Mahurin is credited with twenty-two aerial victories in World War II and 3½ in Korea, for a total of 25½. In the latter war, he was shot down by ground fire and remained a POW for sixteen months. After fourteen years in the Air Force, where he held command assignments and served as Executive to Air Force Secretaries W. Stuart Symington and Thomas E. Finletter, Colonel Mahurin joined the Northrop Corp. Subsequently, he held executive positions with several aerospace companies and is now a marketing executive with Xerox Electro-Optical Systems in Pasadena, Calif. Colonel Mahurin is Vice Commander of the 452d Troop Carrier Wing, USAF Reserve.

applying full power just to show them the speed of the P-47. In so doing, I moved to a position where the tail of my aircraft was slightly ahead of and between the propeller arcs of the B-24's inboard and outboard engines on the starboard side.

Then a peculiar thing began to happen.

When I increased forward pressure on the stick, my aircraft didn't nose down. The tail just raised higher toward the bomber's propellers.

I had encountered a phenomenon of which I had no prior knowledge or experience. Negative air pressure was created in front of each B-24 propeller as the air was sucked in and propelled through the blades. A venturi effect was created between the airflow of each individual engine, and my aircraft was being sucked up into this negative pressure area. At the same time, in order to see me, the pilot of the B-24 had allowed his right wing to drop.

In these fractions of seconds, I couldn't analyze what was happening. I didn't have time to realize that simply pulling up the flaps would drop me out of danger, so I just gingerly kept ever so slight a forward pressure on the stick.

Suddenly, I heard a metallic BRRRRIPPPP as the B-24 propellers cut into my vertical and horizontal stabilizers, and my stick and rudder pedals went limp. There was

absolutely no question in my mind what had happened. In a flash, I reached for my shoulder harness and seat-belt release lever, then for the canopy release lever, thrusting the canopy aft.

The aircraft nose had passed through the horizon headed for a terminal dive into the ground. I put both hands around the top of the windshield and simultaneously kicked and pulled my body from the cockpit.

I instantly pulled the rip cord because I was certain that I was below 500 feet, and was appalled that the chute did not open immediately. But it did open. I both saw and heard the aircraft explode when it hit the ground immediately below.

The resultant fireball whooshed up at me, and the next moment I hit the ground almost at the edge of the crater into which my aircraft had vanished.

As soon as I could collect my senses, I saw a farm house across a field some distance away. After taking off my parachute harness, I ran toward it.

The farmer, Donald Hadingham, helped me phone my base by declaring that this call was war emergency and should be placed immediately. I reached the office of the Group Commander and was told that an ambulance had already been dispatched to the scene.

After reporting in, I hurried back to the crash site. There was a hole

in the ground about twenty feet in diameter and ten feet deep. My aircraft had disappeared, but there were pieces scattered over a large radius around the scene. The ambulance had arrived, and medics were probing the ground trying to find the pilot's—that is, *my*—body.

I was put into the ambulance, taken to the base hospital at Metfield, and released after a thorough medical examination. A jeep took me back to my base, and I will never forget the embarrassment of riding through the base with my arms full of parachute on my way back to Squadron Operations.

I briefed my Squadron Commander on the episode, learned that the B-24 had landed safely, and then was told to report to the Group Commander. Since he was a colonel and I was a captain, the conversation was more or less one-sided. I was fined under the 104th Article of War, which is squadron-level punishment, and restricted from promotion for a period of one year. The punishment seemed relatively light, considering that I had destroyed an expensive aircraft, but I felt that my military career was ruined.

On August 16, 1943, during an escort mission to Schweinfurt, I managed to destroy two ME-109s and probably destroyed another. These were my first victories, and, in my view, partly evened the score for the United States. ■

R.H.I.P.

All the brass from Tenth Air Force Headquarters in New Delhi and all available officers and men of the 7th Bomb Group were assembled in proper formation on the ramp of Pandaveswar Airfield. Deplaning were Field Marshal Sir John Dill, Gen. "Hap" Arnold, and the invincible Eddie Rickenbacker, minimally recovered from his ordeal in the liferaft in the Pacific. As the Field Marshal was being greeted by the reception party, General Arnold scanned the officers' line. Ignoring protocol and without hesitation, he strode directly toward the lower ranks of officers, embraced a graying first lieutenant, and proclaimed for all to hear, "John Suggs, you old son-of-a-gun, I didn't know you were out here."

Recently commissioned—formerly master sergeant and one-time crew chief for Arnold at March Field—Lt. John Suggs stood proudly and chatted with the Chief. As Arnold departed to greet the brass, Suggs chortled to his audience of youthful officers, "I've been telling you that Hap Arnold knows every Regular Air Corps noncom by his first name."

—CONTRIBUTED BY COL. F. N. THOMPSON, USAF (RET.)

(AIR FORCE Magazine will pay \$10 for each anecdote accepted for publication.)



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AIR FORCE
MAGAZINE

The Bulletin Board

By Maj. Robert W. Hunter, USAF

CONTRIBUTING EDITOR, AIR FORCE MAGAZINE

Civilians in the Total Force

Part of the new trend in personnel management requires discarding the past tendency to manage officer, airman, and civilian elements as if they were separate services because of differences in tenure, entitlements, funding, and statutory constraints. The unique feature of the USAF Personnel Plan is the emphasis on total personnel force planning. Managers are now convinced that some bad management habits can be corrected by focusing on the complementary nature of the three elements.

There are a number of keys to achieving such a goal. The most important is the US Air Force Personnel Plan. Early in 1970, the Chief of Staff approved the plan, which contained Air Force personnel objectives representing the consensus of personnel managers about the characteristics the future personnel force should possess. The plan also incorporates a number of guidelines for attaining these characteristics. Personnel managers in all parts of the Air Force are now moving toward the same highly visible and well-identified personnel objectives.

Managing the Force

The civilian element of the total force is both large and diverse. About 138,600 are in GS classifications; about 125,200 are in wage-grade jobs. A little more than twenty-eight percent are women, while about seventeen percent are minorities. The Air Force has more than 150 employees in GS grades 16-18, but none are minorities.

These facts and figures are of more than passing interest. They are part of the growing data that help the manager tailor the force structure. As part of the Personnel Plan and the Total Force Concept,

USAF civilian and military personnel managers have already drawn a profile of the civilian force and will soon begin the work of modeling a military-civilian structure to study the best cost mix, as force levels draw down and manpower dollars tighten.

The force profile has already highlighted some problem areas. For example, personnel managers are aware of age, grade, and education imbalances between the civilian and military forces.

One basic force-structure problem is to determine which position will be military and which civilian. Traditionally, USAF military-manpower specialists have done that. Now civilian managers have a piece of the action and work with the military-manpower people. They enter into the determination based on criteria from DoD and Air Force.

A related problem is the stability of funds. Some feel that civilian pay should be a line item in the budget. Now it is part of the O&M (Organization and Maintenance) appropriation. O&M monies may be used in a variety of ways and transferred from one need to another. Some officials say there is a need to identify which positions are to be civilian and then stabilize funds so the military manager can count on having civilians.

Management of the force will be aided greatly when the CPMIS (Civilian Personnel Management Information System) comes on line this year, and still more when the APDS (Advanced Personnel Data System) cranks up in 1975.

The CPMIS will provide a continuous update of the profile of the civilian work force. The manager will know his inventory and the computer will be programmed to

predict what will happen with promotions, retirements, RIFs, etc. The manager, therefore, can do an intelligent job of recruiting by knowing how many civilians he needs and in what specialties.

The CPMIS is unique. No other government agency has such a system. In fact, the Civil Service Commission has recently asked USAF to develop the prototype for the Federal Personnel Management Information System (FPMIS). And, later, APDS will provide a truly total-force profile by including civilians, military, Guard, and Reserve in its data bank.

Career Planning

Civilian career planning and development is receiving increased attention in total-force planning. USAF officials are now establishing career lines of progression to provide information about the opportunities for civilian employees to develop and advance in their jobs. These clearly defined lines of progression will permit the manager to assure a continued supply of experienced, trained, and proved people for middle and higher-level positions in the Air Force.

The program includes a wide dissemination of information to employees about career opportunities, what the criteria are for entering the various programs, and what performance criteria they must meet to be successful. In addition, employees are being helped in deciding whether they wish to participate in a given career program and, if they decide to do so, are then also to be helped in establishing realistic and meaningful career goals for themselves, with short- and long-range training programs as part of the package.

Employee evaluation is another of civilian-personnel management's most pressing needs and complements career development.

The Bulletin Board

An evaluation and appraisal system is out for trial now. There does not seem to be a system in government or industry now that really does away with the "halo effect" (rating everyone's performance as outstanding, thus invalidating the system) and distributes appraisals as humans probably fall, a small number at either end of the spectrum and the majority in the middle. There is no system that remains stable cycle after cycle. At the end of one cycle of rating, invariably, the system is compromised.

Now, however, USAF civilian-personnel officials are working on a system that takes a brand-new approach, rating the employee according to the kind and amount of supervision he needs to do a job. It reportedly gives the supervisor a better way of explaining faults and deficiencies than previous systems. It has been tested in three major activities so far and is reported to have effected a distribution of scores.

The question naturally arises: What do civilian-personnel management actions portend? The answer seems straightforward. They portend a personnel force—a total force—in which civilians are used in the most cost-effective way, one in which sophisticated planning will determine the size and structure of the work force. They portend a system in which highly visible, career-progression avenues will be established.

Hopefully, they portend a system in which emphasis on the differences between separate elements of the Air Force team finally vanish and a truly Total Force Concept is recognized and appreciated. Air Force civilians are part of our total force.

More Uniform Changes?

Military Personnel Center officials have been looking for comments regarding proposals for stocking caps on winter flight lines, umbrellas for men, and Wellington-type boots as potential uniform items.

Other proposals include an all-

weather coat with liner to replace the authorized raincoat and overcoat, command badges for service uniforms, sweaters for optional indoor wear by men, mandatory cloth name tags for the hospital work uniform, and mandatory wear of blue plastic name tags for service uniforms. Some knit fabrics are already under field tests to determine their comfort, appearance, and wearability for use in the service uniform.

The Air Force Uniform Board in Washington will make recommendations to the Chief of Staff, who approves all proposals.

Little-Known "Fringe Benefit"

With military members and families traveling in the state of Hawaii these days, it seems that many are not aware of Kilauea Military Camp recreation area, and, as a result, often wind up paying more for their stay than they might otherwise.

The rest and recreation area is located in the Hawaii Volcanoes National Park on the island of Hawaii, about 216 air miles southeast of Honolulu. It's open to active-duty and retired personnel.

Charges for guests include quarters, meals, guided tours, and bus transportation to and from the airport. A master sergeant would pay just \$4.75 per day, and a major or lieutenant colonel \$7.25. Adult dependents (sixteen and over) and house guests pay the sponsor's rate. Maximum stay is seven days unless space is available; reservations should be made thirty days in advance of check-in.

If interested, contact Central Reservations Office, Kilauea Military Camp, APO San Francisco 96341.

News Briefs

- Article 15 nonjudicial or "company" punishment proceedings will be open to the public if requested by the accused. It's one of the changes to the Uniform Code of Military Justice (UCMJ) as a result of the Task Force on the Administration of Military Justice in the Armed Forces (see "The Bulletin Board," February '73, p. 72). Other changes in Article 15 proceedings include the availability of legal advice to an accused prior to action by commanders, and the opportunity for full presentation of an accused's case in the presence of his or her



USAF civilians, like these shown mailing out paychecks, share a new "sense of mission" in the total force.

commander, including the right to call witnesses, present evidence, and to be accompanied by a person to speak on his or her behalf. Also, each accused is to be advised of his or her right to appeal. Imposition of Article 15 punishment is to be stayed pending completion of any appeal.

- Promotions to first lieutenant will stop on July 1 and not resume until January 1, 1974, at the twenty-four-month phase point. Officials said the DoD guidance for FY '74 requires all services to adjust the promotion phase point to first lieutenant from eighteen to twenty-four months in grade by January 1974.

- The Community College of the Air Force (CCAF) has had its security and law-enforcement program officially certified by the Texas Commission on Law Enforcement Officer Standards and Education, a state group. An airman who has completed all CCAF academic requirements will now be officially qualified to apply for a job in the Texas law-enforcement field when he or she separates or is retired from the Air Force.

- USAF wants major command comments on a proposed grade insignia and title change for the top three enlisted grades. Senior noncoms would get insignia to be worn like officers on the shoulder and collar. Members in specialized duties as senior adviser or first sergeant would also get position identifiers. A master sergeant would become a "superintendent," a senior master sergeant a "senior superintendent," and the Chief Master Sergeant of the Air Force

would become the "Chief Superintendent of the Air Force."

- By midyear, 6,600 pilots and more than 2,000 navigators will be serving "rated supplement" tours. The supplement offers rated officers career-broadening opportunities by removing them from the cockpit for about three years to serve in nonrated career fields. The long-range objective is 7,000 pilots and 3,000 navigators in the supplement.

- Women are getting equal time in the kitchen—at basic training school, that is. Female USAF basic trainees will soon be holding down KP duties during their six-week stay at the School of Military Sciences, Airmen, at Lackland AFB, Tex. Until now, only men had the kitchen chores. The change came as a result of a review board of MAJCOM representatives who recommended it as a step to further equalize male and female programs. The ladies will work in their squadron dining facility. Women still remain exempt from M-16 rifle training and from the confidence course.

- The Junior Officer Council at Langley AFB, Va., recently collected 1,500 books to help replenish the flood-ravaged library at Wilkes College, Wilkes-Barre, Pa., destroyed by Hurricane Agnes last summer.

- USAF hopes to get about \$24 million for upgrading of its family housing in FY '74. Air Force also will declare more than 6,000 units inadequate. These units have been determined to be uneconomical to upgrade. Families living in them will be given the choice of staying, moving into adequate quarters, or moving off base. If they stay, they would pay only seventy-five percent of their quarters allowance.

- Expectant mothers who wish to deliver in civilian hospitals using the natural childbirth method will not get nonavailability statements from military facilities routinely any more. CHAMPUS (for Civilian Health and Medical Program) officials say the reason is that natural childbirth is now used in some military hospitals when requested. Dependents of active-duty members living within thirty miles of a uniformed service hospital must get a nonavailability statement before receiving inpatient care under CHAMPUS. If the dependent is separated from the



USAF Capt. Hector Varona, cited by the Chief, Nicaraguan Air Force, Col. Orlando Villalta, organized relief efforts to quake-stricken Nicaragua. He is a maintenance officer, 31st FMS, Homestead AFB, Fla.

active-duty sponsor and living more than thirty miles from a facility or lives in Iowa, Minnesota, Oregon, Vermont, West Virginia, or Wisconsin, they have a choice between a military hospital and CHAMPUS care.

- Between now and the end of April, every Air Force member will be briefed on DoD's proposed nondisability retirement system, due to go to Congress this session. That's the goal of a DoD information program on the proposal (for an explanation of the controversial system, see AIR FORCE Magazine, December '72, pp. 38-41). MAJCOM project officers are now training briefing officers for each base. To assist, the Military Personnel Center will open a twenty-four-hour telephone-answering service later this month with a number to be published soon. USAF members and wives can get information on their base through a film followed by more specifics in a slide briefing and ending with a work sheet for each member to figure out how the proposal would affect him specifically. Everyone will also get a brochure, a history of retirement compensation, a listing of the inequities the proposal would correct, and the reasoning behind the proposed changes.

- Capt. Hector Varona, a maintenance officer in the 31st FMS, Homestead AFB, Fla., responded to a request from the son of the

Nicaraguan military leader Gen. Anastasio Somoza, sacrificed his Christmas leave, and plunged into relief operations in the aftermath of the Nicaraguan earthquake. The younger Somoza needed a knowledgeable Spanish-speaking man to coordinate airlift. On December 23, Captain Varona organized a flight with radio equipment, since Managua was without communications. Then he lined up crews to fly the Lanica Airlines planes that were available. But supplies stacked up at Las Mercedes Airport, six miles from Managua, so Captain Varona got some trucks from the US Army in the Canal Zone and began, along with others, to haul supplies. At the end of the year, he also went back to deliver money from the Red Cross. He was directly responsible for almost half a million pounds of supplies being delivered to the quake victims.

- Clarification has been made on some tax questions surrounding the new Survivor Benefit Plan recently enacted into law (see "The Bulletin Board," December '72, p. 121). Amounts withheld from a military member's retired pay are excluded from gross income for federal tax purposes. The value of the annuity to the surviving beneficiary is not subject to inclusion in the deceased member's estate for federal estate tax purposes. And the monthly annuities payed to the beneficiary are subject to federal income tax.

- By next month, 132 Air Reserve Forces (ARF) Consolidated Base Personnel Offices (CBPOs) and Consolidated Reserve Personnel Offices (CRPOs) will have their personnel records integrated into the active force's Base Level Military Personnel System (BLMPS). Some records have already been converted. It's all part of the continuing effort at making the Total Force Concept viable. The idea is for the new system to satellite ARF CBPOs via remote computer terminals and make all data compatible, thus enhancing mobilization readiness. Almost 140,000 records are involved in the conversion.

New Brigadier Generals

PROMOTIONS: To be Brigadier General: Benjamin R. Baker; Frank G. Barnes; Tedd L. Bishop; Charles C. Blanton; Richard C. Bowman; James L. Brown; Daniel

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L. Burkett; Lyle W. Cameron; Murphy A. Chesney; Lynwood E. Clark; Thomas E. Clifford; Richard N. Cody; Richard G. Collins; Thomas P. Conlin; Theodore P. Crichton; Bohdan Danyliw; Donald M. Davis; Richard T. Drury; David B. Easson; Cecil E. Fox; William D. Gilbert.

Georges R. Guay; Gerald K. Hendricks; Andrew P. Iosue; Irby B. Jarvis, Jr.; Kermit C. Kaericher; William J. Kelly; Thomas M. Knoles, III; John E. Kulpa, Jr.; Phillip N. Larsen; Clyde F. McClain; James E. McInerney, Jr.; Thomas H. McMullen; Richard E. Merklung; Carl S. Miller; Billy M. Minter; James P. Mullins; John J. Murphy.

William R. Nelson; William C. Norris; Earl G. Peck; Carl D. Peterson; Don D. Pittman; John E. Pitts, Jr.; Jack L. Posner; Gerald J. Post; John S. Pustay; Walter D. Reed; Thomas F. Rew; Mal-

colm E. Ryan, Jr.; Thomas M. Ryan, Jr.; Robert A. Rushworth; Evan W. Schear; Clifford Schoeffler; Charles E. Shannon; Lawrence A. Skantze; Willum H. Spillers, Jr.; Benjamin F. Starr, Jr.; Henry M. Stelling, Jr.

Michael J. Tashjian; Robert C. Taylor; Stanley M. Umstead, Jr.; Charles A. Veatch; Donald N. Vivian; Jasper A. Welch, Jr.; Wayne E. Whitlatch; Erskine Wigley; Garry A. Willard, Jr.; David O. Williams, Jr.; Charles E. Word; William R. Yost; Charles D. Youree, Jr.; Felix J. Zaniewski. ■

Senior Staff Changes

B/G Woodrow A. Abbott, from IG, Hq. SAC, Offutt AFB, Neb., to Dir., J-2, US Readiness Cmd., MacDill AFB, Fla., replacing retiring B/G Wright J. Sherrard . . . **B/G Timothy I. Ahern**, from Chief, Defense Div., Dep. Dir., Strategic Forces, DCS/R&D, Hq. USAF, to Dep. Cmdr., 22d NORAD/CONAD Region, North Bay, Ontario, Canada, replacing B/G Henry L. Warren . . . **M/G James R. Allen**, from Asst. DCS/Ops, to DCS/Ops, Hq. SAC, Offutt AFB, Neb., replacing retiring M/G Pete C. Sianis . . . **M/G Lew Allen, Jr.**, from Dir., Special Projects, SAF, with add'l duty as Dep. Cmdr., Satellite Programs, SAMSO, Los Angeles, Calif., to C/S, Hq. AFSC, Andrews AFB, Md. . . . **Col. (B/G selectee) Frank G. Barnes**, from DCS/Civil Engineering, Hq. TAC, Langley AFB, Va., to DCS/Civil Engineering, Hq. AFLC, Wright-Patterson AFB, Ohio.

B/G Richard M. Baughn, from Cmdr., 20th TFW, USAFE, RAF Upper Heyford, England, to Cmdr., 45th Air Div., SAC, Pease AFB, N. H., replacing B/G Harold E. Confer . . . **M/G Jonas L. Blank**, from Dir., Supply & Services, to Asst. DCS/S&L, Hq. USAF . . . **B/G David D. Bradburn**, from Dir., Office of Space Systems, SAF, Washington, D. C., to Dir., Special Projects, SAF, with add'l duty as Dep. Cmdr., Satellite Programs, SAMSO, Los Angeles, Calif., replacing M/G Lew Allen, Jr. . . . **B/G Arnold W. Braswell**, from Dep. Dir., Plans, DCS/P&O, Hq. USAF, to Cmdr., TUSLOG, USAFE, Ankara, Turkey, replacing M/G Bryan M. Shotts . . . **B/G Harold E. Confer**, from Cmdr., 45th Air Div., SAC, Pease AFB, N. H., to Dep. Dir., Strategic Forces, DCS/R&D, Hq. USAF, replacing retiring B/G Charles J. Adams.

B/G Harry M. Darmstandler, from Cmdr., 12th Strategic Missile Div., SAC, Davis-Monthan AFB, Ariz., to IG, Hq. SAC, Offutt AFB, Neb., replacing B/G Woodrow A. Abbott . . . **M/G Peter R. DeLonga**, from DCS/Logistics, Hq. PACAF, Hickam AFB, Hawaii, to Dir., Supply & Services, DCS/S&L, Hq. USAF, replacing M/G Jonas L. Blank . . . **B/G William H. Ginn, Jr.**, from Cmdt., Squadron Officer School, to Cmdt., ACSC, AU, Maxwell AFB, Ala., replacing M/G George G. Loving, Jr. . . . **M/G (L/G selectee) Richard M. Hoban**, from Cmdr., Ogden AMA, AFLC, Hill AFB, Utah, to V/C, Hq. AFLC, Wright-Patterson AFB, Ohio, replacing retiring L/G Francis C. Gideon . . . **B/G Ralph T. Holland**, from Dep. Cmdr., 7th AF, PACAF, Tan Son Nhut Airfield, Vietnam, to DCS/Logistics, Hq. PACAF, Hickam AFB, Hawaii, replacing M/G Peter R. DeLonga . . . **B/G John R. Kelly, Jr.**, from Cmdr., 93d Bomb Wg., SAC, Castle AFB, Calif., to Asst. DCS/Logistics, USAFE, Ramstein AB, Germany . . . **Col. (B/G selectee) John E. Kulpa, Jr.**, from Dep. for Programs, to Dir., Office

of Space Systems, SAF, Washington, D. C., replacing B/G David D. Bradburn.

M/G George G. Loving, Jr., from Cmdt., ACSC, AU, Maxwell AFB, Ala., to Dep. Dir., Plans, DCS/P&O, Hq. USAF, replacing B/G Arnold W. Braswell . . . **M/G Frank M. Madsen, Jr.**, from Cmdr., Keesler Tech. Tng. Ctr., ATC, Keesler AFB, Miss., to DCS/Tech. Tng., Hq. ATC, Randolph AFB, Tex., replacing M/G Felix M. Rogers . . . **M/G Leroy J. Manor**, from Dep. Dir., J-3 (Counterinsurgency and Special Activities), JCS, OJCS, to V/C, Hq. 13th AF, PACAF, Clark AB, Philippines, replacing retiring M/G James O. Frankosky . . . **B/G James S. Murphy**, from Military Asst., Office, Spec. Asst. to Secy. and Dep. Secy. of Defense, Washington, D. C., to Cmdr., 12th Strategic Missile Div., SAC, Davis-Monthan AFB, Ariz., replacing B/G Harry M. Darmstandler . . . **Col. (B/G selectee) Earl G. Peck**, from Dep. Cmdt., to Cmdt., Squadron Officer School, AU, Maxwell AFB, Ala., replacing B/G William H. Ginn, Jr.

M/G Bryce Poe, II, from DCS/Logistics, USAFE, Lindsey AS, Germany, to Cmdr., Ogden AMA, AFLC, Hill AFB, Utah, replacing M/G (L/G selectee) Richard M. Hoban . . . **M/G Bryan M. Shotts**, from Cmdr., TUSLOG, USAFE, Ankara, Turkey, to Cmdr., Keesler Tech. Tng. Ctr., ATC, Keesler AFB, Miss., replacing M/G Frank M. Madsen, Jr. . . . **M/G (L/G selectee) William W. Snavely**, from Asst., to DCS/Systems & Logistics, Hq. USAF, replacing retiring L/G Harry E. Goldsworthy . . . **Col. (B/G selectee) Hoyt S. Vandenberg, Jr.**, from Vice Cmdt., to Cmdt. of Cadets, USAF Academy, Colo., replacing M/G Walter T. Galligan . . . **B/G Henry L. Warren**, from Dep. Cmdr., 22d NORAD/CONAD Region, North Bay, Ontario, Canada, to Vice DCS/Ops, Combat Ops, J-3, NORAD/CONAD, Ent AFB, Colo., replacing retiring B/G Morgan S. Tyler, Jr. . . . **B/G Charles E. Yeager**, from US Defense Representative, Rawalpindi, Pakistan, to Dir., Aerospace Safety, AFISC, Norton AFB, Calif.

PROMOTIONS: To be Lieutenant General: Richard M. Hoban; William W. Snavely.

RETIREMENTS: B/G Charles J. Adams; M/G Paul N. Bacalis; M/G Roland A. Campbell; M/G Gilbert L. Curtis; B/G Frank K. Everest, Jr.; M/G James O. Frankosky; L/G Francis C. Gideon; L/G Harry E. Goldsworthy; M/G Horace A. Hanes; M/G William S. Harrell; M/G Augustus M. Hendry, Jr.; M/G John H. Herring, Jr.; B/G Wright J. Sherrard; M/G Pete C. Sianis; B/G Morgan S. Tyler, Jr.; B/G Hamilton B. Webb. ■

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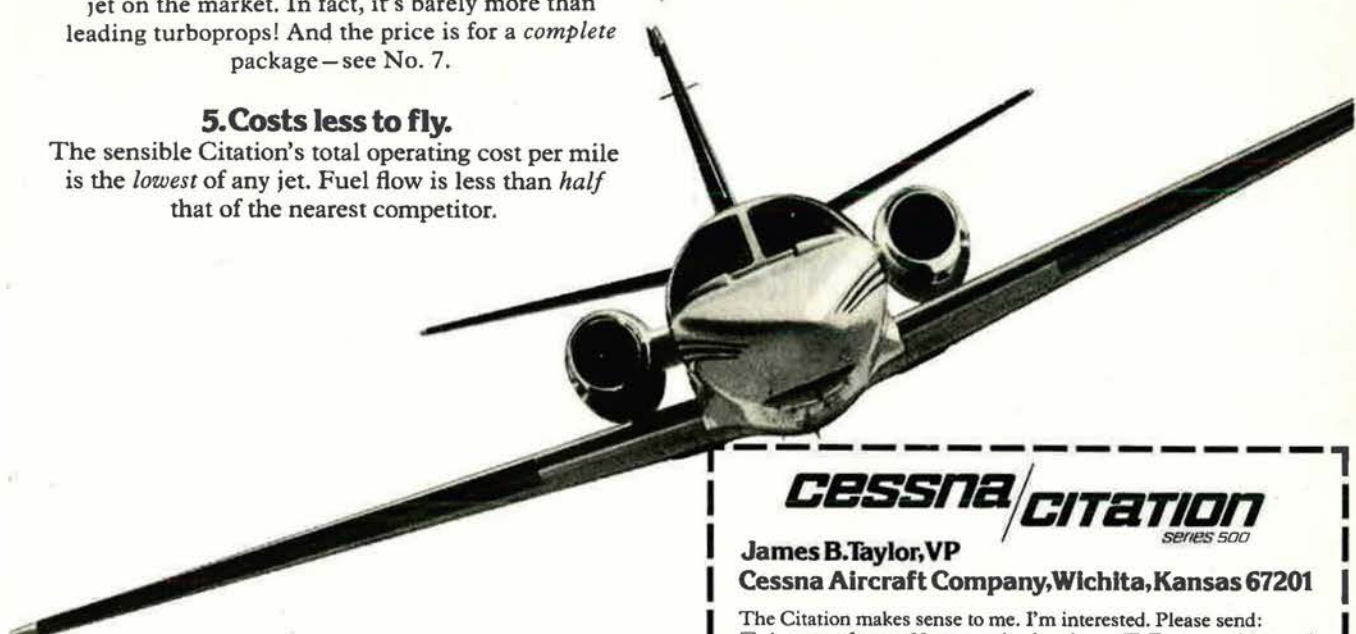
The Citation's systems are *simpler* than those of other jets, its engines easier to service. And the plane is *standardized* — nose to tail. Result: maintenance goes faster than with other jets, *so costs less*.

7. Complete package.

The Citation is no do-it-yourself plane; it comes *complete*. The low price *includes* aircraft, avionics, interior, training of pilots and mechanics, computerized maintenance, plus access to special *factory* service centers.

8. Unmatched warranty.

A single, liberal warranty covers the *whole* package. No matter what the problem, you make one call: *Cessna*, the established American manufacturer that has built more airplanes than any other company in the world.



CESSNA/CITATION
SERIES 500

James B. Taylor, VP
Cessna Aircraft Company, Wichita, Kansas 67201

The Citation makes sense to me. I'm interested. Please send:
 A copy of your 20-page color brochure. Facts on the travel analysis Cessna could run on our company to show the difference a Citation might make. Details of how we might arrange for a demonstration flight in the Citation over our *own* routes.

Name _____ Title _____

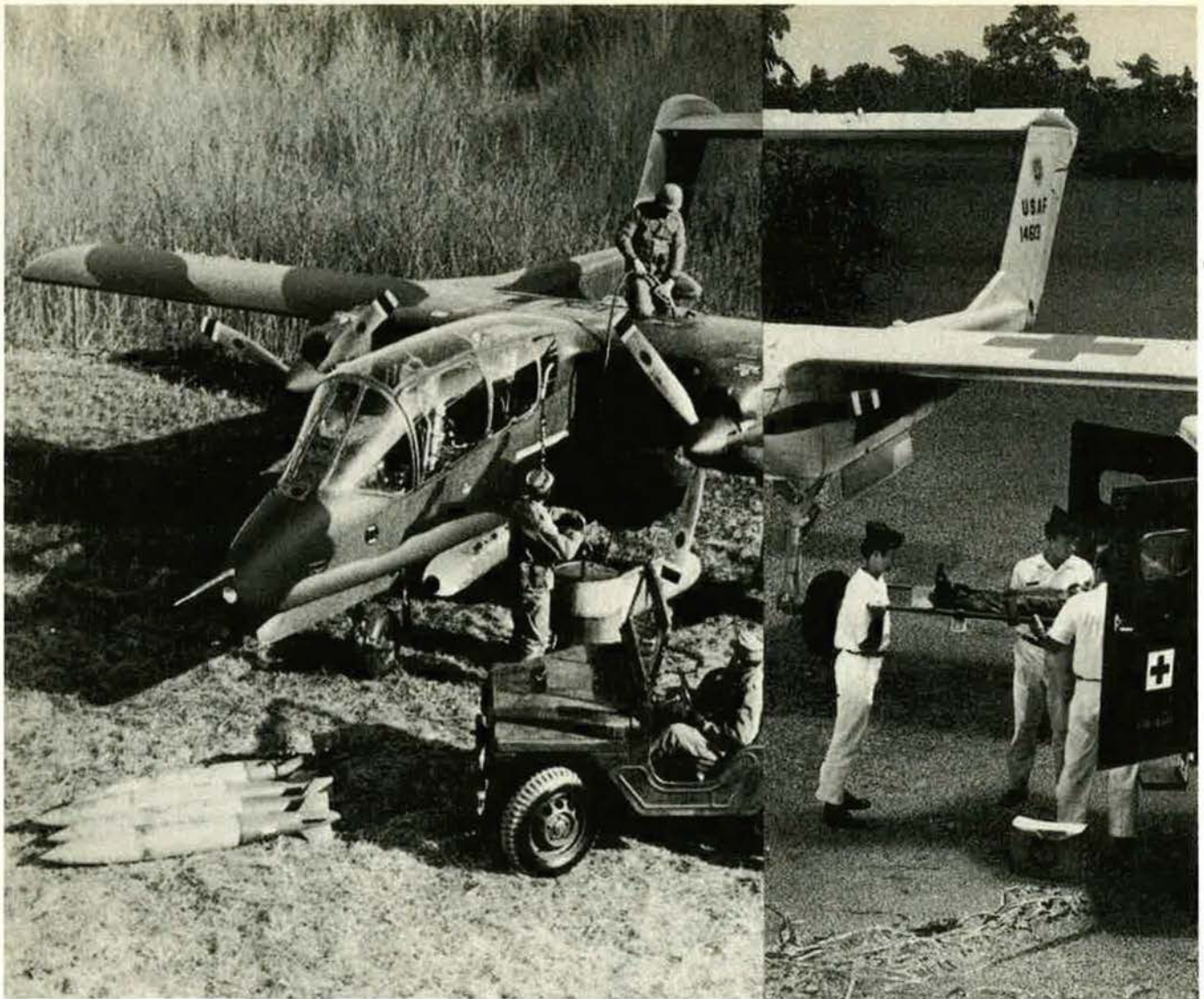
Company _____

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AF-1

Member of GAMA



Bronco takes on combat missions. Or mercy missions.

The Bronco OV-10 is just one airplane. But it can do so much, it's more like a small fleet.

Faster and more tactically versatile than helicopters, more maneuverable than jets, the OV-10 can perform missions not possible with either of these types of aircraft.

Since 1968, Bronco has accumulated more than 400,000 flight hours with the U.S. Marines, Navy and Air Force . . . 75% of that time in combat. It can be used day or night as a lightweight gunship with a 110-cubic-foot cargo bay that carries abundant ammunition. It can also be used for observation and reconnaissance; helicopter escort; target marking; gunfire spotting; and liaison, utility and training operations.

Bronco can be easily adapted for peacetime uses, too. Such things as security patrol,

disaster relief, medical missions, civil disorders, aerial mapping, agricultural spraying and chemical fire-fighting.

Bronco is even more, though. Inexpensive for one thing. Simple to operate and maintain for another. And rugged. So rugged it can be operated from rough clearings and primitive roads, as well as prepared airfields and aircraft carriers. While sacrificing none of the capabilities for weapon delivery, reconnaissance and light transport.

One more important extra: Bronco OV-10 is designed, built and backed by Rockwell International, builder of more military airplanes than anyone else in the world.



Columbus Aircraft Division
Rockwell International

By Don Steele

AFA AFFAIRS EDITOR

THE MOUNT CLEMENS CHAPTER, MICHIGAN . . .

cited for consistent and effective programming in support of the mission of the Air Force Association.

Among the many excellent activities of the **Mount Clemens, Mich., Chapter** during the past few months, three excellent programs stand out as particularly good examples of AFA unit activity. First, the Chapter's annual Air Force Academy Night program featured a presentation by **Capt. Micki King**, the Air Force's Gold Medal winner at last summer's Olympics in Germany. More than 100 high school students, their parents, Academy Liaison Officers, and other senior military personnel attended the program.

Captain King spoke of some of her experiences at the Olympics and then answered questions from the audience.

Special guests included **Brig. Gen. George H. Wilson**, Commander, 403d Tactical Airlift Wing (Res.); and **Maj. Leonard W. Isabelle**, senior Academy Liaison Officer in the Mount Clemens area. Chapter Secretary **C. K. Vogt** was Chairman of the Program.

The next program—an **Air Force Anniversary and Awards Banquet**—was cosponsored with the Greater Mount Clemens Chamber of Commerce and was held in conjunction with the **Air Force Reserve Tactical Airlift and Tactical Gunnery Competition**, "Comfort Silver," held at Selfridge Air National Guard Base.

The guest speaker, former astronaut **Michael Collins**, now Director of the National Air and Space Museum, was introduced by **Maj. Gen. Homer I. Lewis**, Chief of Air Force Reserve. Mount Clemens Mayor Pro-Tem **Terrence P. Monaghan** was master of ceremonies. Chapter President **Marjorie O. Hunt** made the welcoming remarks, and the Colors were posted by a Color Guard from the AFJROTC Units at **Clintondale and Carl Brablec High Schools**.

The more than 500 guests included **Lt. Gen. Dale S. Sweat**,

Deputy Commander, Tactical Air Command; **Maj. Gen. John H. Herring, Jr.**, Commander, 839th Air Division (TAC); **Maj. Gens. Earl O. Anderson and John Hoff**, Commanders of Eastern and Central Air Force Reserve Regions, re-

the Commander of the Tactical Air Command, a former AFA National President and Board Chairman, now a permanent AFA National Director; **Mount Clemens Mayor Abraham Levine**; and **Ralph A. Leach**, President, Greater Mount



Mount Clemens, Mich., Chapter President Marjorie O. Hunt, left, presents a Chapter Citation to Capt. Micki King, the Air Force's Olympic Gold Medal winner. Captain King was the guest speaker at the Chapter's annual Air Force Academy Night program.

spectively; **Brig. Gen. Alfred Verhulst**, Vice Commander, Air Force Reserve; **Brig. Gen. John J. Johnston**, Assistant Adjutant General (Air) for the state of Michigan; **Brig. Gen. Howard T. Markey**, USAFR, Mobilization Assistant to

Clemens Chamber of Commerce.

The third program was a dinner honoring **Maj. Gen. Roy M. Terry**, Chief of Air Force Chaplains.

Some seventy members and

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At the Albuquerque, N. M., Chapter's recent dinner meeting, Lt. Gen. Robert J. Dixon, left, USAF's Deputy Chief of Staff for Personnel and the guest speaker, visits with Chapter President John J. Dishuck, center, and Brig. Gen. Thomas W. Morgan, Commander, Air Force Special Weapons Center, Kirtland, AFB.



Participants in the Louisiana AFA's 1972 Convention included, from left, Alabama AFA President John H. Haire; Louisiana AFA President Ralph F. Chaffee; Lt. Gen. James M. Keck, Commander, Second Air Force and guest speaker; Alexander E. Harris, Vice President for AFA's South Central Region; and James C. Lewis, President, Ark-La-Tex Chapter.



Among the more than 200 leaders of Congress, the aerospace industry, and the Air Force attending the H. H. Arnold, N. Y., Chapter's Annual Ball were, from left, Rep. Lester L. Wolff (D-N. Y.), Thomas H. O'Brien, and Rep. Angelo Roncallo (R-N. Y.)—all members of the Chapter's Executive Council—Chapter President Walter Petersen, and New York AFA President Gerald V. Hasler.



Brig. Gen. Alfred L. Esposito, center, Director of Procurement Policy, Office of the Assistant Secretary of Defense (I&L), guest speaker at the Northern Connecticut Chapter's recent dinner meeting, is shown with Chapter President F. J. Fennessy, left, and Gen. James Ferguson, USAF (Ret.), Vice President, United Aircraft Corp. More than 200 members and guests attended.



Lt. Gen. Kenneth W. Schultz, Commander, SAMSO, receives an enthusiastic welcome from California AFA Organizational Director Ed Stearn, left, AFA National Director William R. Berkeley, center, and San Bernardino Chapter President Ken Jacobs, right. General Schultz was guest speaker at an Air Force Anniversary Luncheon cosponsored by AFA's San Bernardino Chapter and the Chambers of Commerce of the Inland Empire. More than 450 attended.



Rep. G. William Whitehurst (R-Va.), center, guest speaker at the Tidewater Chapter's banquet observing the Twenty-fifth Anniversary of the USAF, chats with Air Force Maj. Gen. James F. Kirkendall, left, Commandant of the Armed Forces Staff College; and Chapter President David L. Freeman.



Participants in a recent Connecticut Chapter tour of the facilities of United Aircraft Corporation's Sikorsky Aircraft Div. included, from left, Lewis R. Berlepsch, Melvin Rice, and Margaret McEnerney, Chapter Vice President, Secretary, and President, respectively; Lt. Col. Ronald L. Haglund, Air Force recruiter; and Thurston Sumner of Sikorsky.



Panama City, Fla., Chapter President William H. Truxal, left, presents a special plaque of appreciation to CMSgt. Richard D. Kisling, Chief Master Sergeant of the Air Force. Sergeant Kisling was the guest speaker at a recent Chapter meeting.



Among the more than 200 AFA members, civic leaders, and guests who attended the Air Force Silver Anniversary Ball cosponsored by AFA's H. H. Arnold Memorial Chapter and the Arnold Engineering Development Center were, from left, Past Chapter President Peter Trenchi, Jr.; Chapter President Leonard T. Glaser; Col. Ward E. Protsman, AEDC Commander; Chapter Secretary Lillie Harrell; and Tennessee AFA President Brig. Gen. James W. Carter. Tennessee ANG. The USAF's "Airmen of Note" played for dancing.



Distinguished guests at the 14th annual banquet honoring the Air Force Academy football team included, from left, Gen. Jack J. Catton, AFLC Commander; Cadet Eugene Ogilvie, team defensive captain; AFA Chapter President James W. Lancaster; Cadet Orderia Mitchell, team offensive captain; and Gen. George S. Brown, AFSC Commander. The event was cosponsored by AFA's Colorado Springs Chapter and Airpower Council, and the Falcon Flight of the Order of Daedalians.

During a recent dinner meeting of AFA's Fort Smith, Ark., Chapter, Earl W. Moreland, left, Chapter President, presents citations for "dynamic leadership and participation in civilian aviation programs in the community, state, and nation" to, from left, Velma Hite, Charlene Poe, Ramonia Sloat, and Marge Nielsen. Another recipient, Louise Mitchell, now residing in El Paso, Tex., was unable to attend the ceremonies.



AFA News

guests attended the dinner, which was held in the Selfridge ANG Base Officers Open Mess. Special guests included the Rt. Rev. Bishop Richard S. Emrich, Bishop of the Episcopal Diocese of Michigan; Brig. Gen. Joseph Cardy, Chaplain General (Protestant) of the Canadian Forces; Brig. Gen. George H. Wilson, Commander, 403d Tactical Airlift Wing (Res.); Col. Rudolph Bartholomew, Selfridge ANG Base Commander; Cols. L. E. C. Schmidlin and Leonard Baldock, Canadian Forces; and Mark McKee, Publisher, *Macomb Daily*.

In recognition of the Chapter's consistently effective programming, most recently exemplified in these three programs, we are pleased to name the Mount Clemens Chapter as AFA's "Unit of the Month" for March.

IN SYMPATHY . . . AFA extends its deepest sympathy to the family and friends of . . .

• **Louis F. Musco**, a Past President of the Boston Chapter, who died on October 10, 1972, after an extended illness.

• **Paul A. Robinson**, a Past President of the Boston Chapter and member of the Massachusetts AFA Executive Committee, who was killed in an automobile accident on October 22, 1972.

• **Charles Davidson**, Chairman of the New Jersey AFA's Aerospace Education Committee, who died on December 11, 1972. The State AFA has established a continuing Aerospace Education Award in his memory, to be presented annually to a high school senior.

CONGRATULATIONS and best wishes to . . . Maj. Gen. John A. Lang, Jr., a former Special Assistant to the Secretary of the Air Force and an enthusiastic supporter of AFA and participant in AFA activities, who retired from the Air Force Reserve in ceremonies at the Air Force Academy on November 30, 1972.

And to Air Force Reserve Brig. Gen. O. Donald Olson, a former

member of AFA's Board of Directors and current Chairman of AFA's Colorado Springs Airpower Council, who replaces General Lang as mobilization assistant to Lt. Gen. A. P. Clark, USAF Academy Superintendent.

CROSS COUNTRY . . . The Ark-La-Tex Chapter of Shreveport, La., and the Shreveport *Times* cosponsored the USAF Band's recent concert in Shreveport. Toulmin H. Brown, a Past President of the Chapter and of the Louisiana AFA, was chairman for the arrangements.

• The Steel Valley, Pa., Chapter's Air Force Anniversary Dinner featured an address by Lt. Col. Merlyn H. Dethlefsen, Medal of Honor winner. Judge John G. Brosky, an AFA National Director, was the toastmaster, and Chapter President Patrick J. Logan made welcoming remarks. Special guests included Judge James Clark, Common Pleas Court; Homestead Mayor James Armstrong; Munhall Mayor William Knight; Whitaker Mayor Ed Gretz; Don Abraham, President, Munhall Council; William Tindall, Executive Secretary, Steel Valley Chamber of Commerce; Margaret Kuzma, President, Steel Valley School Board; Lawrence Griffin, Superintendent, Steel Valley Schools, Leonard Staisey, Chairman of the Board of County Commissioners; Earle Whittpenn, Managing Editor, *Daily Messenger*; and Pennsylvania

AFA President Thomas W. Fry.

COMING EVENTS . . . Tucson Chapter's Thirteenth Annual Air Force Appreciation Luncheon, Tucson, Ariz., March 16 . . . Iron Gate Chapter's Tenth National Air Force Salute, Americana Hotel, New York City, March 23 . . . Alaska AFA Convention, Anchorage, March 31 . . . California AFA Convention, Palm Springs, April 6-8 . . . Massachusetts AFA Convention, Hanscom Field, April 27-28 . . . AFA Missile Symposium in cooperation with the Strategic Air Command during SAC's annual Missile Competition at Vandenberg AFB, Calif., May 2-3 . . . Colorado AFA Convention, Pueblo, May 12 . . . New Hampshire AFA Convention, Pease AFB, May 19 . . . South Carolina AFA Convention, Charleston AFB, May 26 . . . AFA's Annual Dinner honoring the Outstanding Squadron at the Air Force Academy, The Broadmoor, Colorado Springs, Colo., June 2 . . . New York AFA Convention, The Treadway Inn, Niagara Falls, June 8-9 . . . Virginia AFA Convention, June 16 . . . Pennsylvania AFA Convention, The Viking Motor Inn, Pittsburgh, June 22-23 . . . Texas AFA Convention, San Antonio, June 29-30 . . . AFA's Twenty-seventh National Convention and Aerospace Development Briefings, Sheraton-Park Hotel, Washington, D. C., September 16-20. ■



Just prior to his recent retirement, Col. William R. Edgar, former 4500th Air Base Wing Commander at Langley AFB, Va., received a plaque from AFA's Langley Chapter for his outstanding support of AFA and the Chapter. Participating in the ceremony are, from left, Chapter President C. W. Scott, Virginia AFA Vice President Les Rose, Colonel Edgar, and A. A. "Bud" West, Vice President for AFA's Central East Region.

AFA STATE CONTACTS

Following each state name, in parentheses, are the names of the localities in which AFA Chapters are located. Information regarding these Chapters, or any place of AFA's activities within the state, may be obtained from the state contact.

ALABAMA (Auburn, Birmingham, Huntsville, Mobile, Montgomery, Selma, Tuscaloosa): **John H. Haire**, 2604 Bonita Circle, Huntsville, Ala. 35801 (phone 453-5499).

ALASKA (Anchorage, Fairbanks, Kenai): **V. R. Davis**, 2317 Turnagain Parkway, Anchorage, Alaska 99503 (phone 277-6801).

ARIZONA (Phoenix, Tucson): **William P. Chandler**, One S. Norton Ave., Tucson, Ariz. 85719 (phone 624-8385).

ARKANSAS (Blytheville, Fort Smith, Little Rock): **Frank A. Bailey**, 605 Ivory Dr., Little Rock, Ark. 72205 (phone 988-3432).

CALIFORNIA (Apple Valley, Burbank, Edwards, Fairfield, Fresno, Harbor City, Hawthorne, Long Beach, Los Angeles, Merced, Monterey, Novato, Orange County, Palo Alto, Pasadena, Riverside, Sacramento, San Bernardino, San Diego, San Francisco, Santa Barbara, Santa Clara County, Santa Monica, Tahoe City, Vandenberg AFB, Van Nuys, Ventura): **Stanley Hryn**, 10 Shady Lane, Monterey, Calif. 93940 (phone 372-7111, ext. 310).

COLORADO (Boulder, Colorado Springs, Denver, Pueblo): **Roy A. Haug**, Mt. Bell 1st Nat'l Bank Bldg., Rm. 402, Pikes Peak at Tejon, Colorado Springs, Colo. 80903 (phone 636-4296).

CONNECTICUT (East Hartford, Torrington): **John McCaffery**, 117 Bridge St., Groton, Conn. 06340 (phone 739-7922).

DELAWARE (Dover, Wilmington): **Franklin R. Welch**, Greater Wilmington Airport, Bldg. 1504, Wilmington, Del. 19720.

DISTRICT OF COLUMBIA (Washington, D. C.): **Tom Turner**, c/o Fairchild Industries, Germantown, Md. 20767 (phone 948-9600).

FLORIDA (Bartow, Broward, Daytona Beach, Ft. Walton Beach, Gainesville, Homestead, Jacksonville,

Key West, Miami, Orlando, Panama City, Patrick AFB, Redington Beach, Sarasota, Tallahassee, Tampa, West Palm Beach): **Troy H. Jones, Jr.**, P. O. Box 4487, Patrick AFB, Fla. 23925 (phone 783-5411).

GEORGIA (Athens, Atlanta, Savannah, St. Simons Island, Valdosta, Warner Robins): **H. L. Everett**, 822 Capt. Kell Dr., Macon, Ga. 31204 (phone 926-3035).

HAWAII (Honolulu): **Hunter Harris, Jr.**, Hilton Lagoon, Apt. 3-G, Honolulu, Hawaii 96815 (phone 949-5941).

IDAHO (Boise, Burley, Pocatello, Twin Falls): **Clarence E. Hall**, 3531 Windsor Dr., Boise, Idaho 83705.

ILLINOIS (Bellefonte, Champaign, Chicago, Deerfield, Elmhurst, O'Hare Field): **M. Lee Cordell**, 1909 Kenilworth Ave., Berwyn, Ill. 60402 (phone 956-2000, ext. 2129).

INDIANA (Indianapolis, Lafayette): **Oliver K. Loer**, 268 S. 800 W., Swayzee, Ind. 46986 (phone 922-7136).

IOWA (Des Moines): **Ric Jorgensen**, 4005 Kingsmen, Des Moines, Iowa 50311 (phone 255-7656).

KANSAS (Topeka, Wichita): **Earl Clark**, 4512 Speaker Rd., Kansas City, Kan. 66106 (phone 342-7030).

LOUISIANA (Alexandria, Baton Rouge, Bossier City, Monroe, New Orleans, Ruston, Shreveport): **Ralph F. Chaffee**, 4431 Fern Ave., Shreveport, La. 71104 (phone 865-0086).

MARYLAND (Baltimore): **James W. Poulitney**, P. O. Box 31, Garrison, Md. 21055 (phone 363-0795).

MASSACHUSETTS (Boston, Falmouth, Florence, Lexington, L. G. Hanscom Fld., Taunton, Worcester): **James Fiske**, 514 Lowell St., Lynnfield Ctr., Mass. 01740 (phone 536-2800).

MICHIGAN (Dearborn, Detroit, Kalamazoo, Lansing, Marquette, Mount Clemens, Sault Ste. Marie): **Stewart Greer**, 18690 Marlowe Ave., Detroit, Mich. 48235 (phone 273-5115).

MINNESOTA (Duluth, Minneapolis, St. Paul): **Victor Vacanti**, 8941 10th Ave., Minneapolis, Minn. 55420 (phone 854-3456).

MISSISSIPPI (Biloxi, Columbus, Jackson): **Delos H. Burks**, 1107 Stemwood Dr., Picayune, Miss. 39466

(phone 798-1224).
MISSOURI (Kansas City, Springfield, St. Louis): **Dean H. Anholt**, 2110 Lakewood, Springfield, Mo. 65804 (phone 883-1612).

MONTANA (Great Falls): **George Page**, P. O. Box 3005, Great Falls, Mont. 59401 (phone 453-7689).

NEBRASKA (Lincoln, Omaha): **Lyle O. Remde**, 4911 S. 25th St., Omaha, Neb. 68107 (phone 731-4747).

NEVADA (Las Vegas, Reno): **James K. Johnson**, 880 E. Sahara Ave., Suite 202, Las Vegas, Nev. 89105 (phone 734-9756).

NEW HAMPSHIRE (Manchester, Pease AFB): **R. L. Devoucoux**, 270 McKinley Rd., Portsmouth, N. H. 03801 (phone 669-7500).

NEW JERSEY (Andover, Atlantic City, Belleville, Chatham, E. Rutherford, Fort Monmouth, Jersey City, McGuire AFB, Newark, Trenton, Wallington, West Orange): **Amos L. Chalif**, 162 Lafayette, Chatham, N. J. 07928 (phone 635-8082).

NEW MEXICO (Alamogordo, Albuquerque, Clovis): **James E. Briggs**, 1213 Quincy, N. E., Albuquerque, N. M. 87110 (phone 255-8084).

NEW YORK (Albany, Bethpage, Binghamton, Buffalo, Chautauqua, Elmira, Griffiss AFB, Hartsdale, Ithaca, Long Island, New York City, Patchogue, Plattsburgh, Riverdale, Rochester, Staten Island, Syracuse): **Gerald V. Hasler**, P. O. Box 11, Johnson City, N. Y. 13760 (phone 754-3435).

NORTH CAROLINA (Charlotte, Fayetteville, Goldsboro, Greensboro, Raleigh): **Wade T. Fox**, 615 Sandridge Road, Charlotte, N. C. 28210 (phone 523-1638).

NORTH DAKOTA (Grand Forks, Minot): **A. R. Weinhandl**, 1123 Valley View Dr., Minot, N. D. 58701 (phone 838-5531).

OHIO (Akron, Cincinnati, Cleveland, Columbus, Dayton, Newark, Toledo, Youngstown): **Robert H. Maltby**, 1112 Wenbrook Dr., Dayton, Ohio 45429 (phone 255-2107 or 2726).

OKLAHOMA (Altus, Enid, Oklahoma City, Tulsa): **Edward McFarland**, Suite 1100, Shell Bldg., Tulsa, Okla. 74119 (phone 583-1877).

OREGON (Corvallis, Eu-

gene, Portland): **John R. Nall**, 517 S. W. Stark, Portland, Ore. 97201 (phone 648-4204).

PENNSYLVANIA (Allentown, Beaver Falls, Chester, Erie, Homestead, Horsham, Lewistown, New Cumberland, Philadelphia, Pittsburgh, Washington, Willow Grove, York): **Thomas W. Fry**, 119 Chippewa Dr., Beaver Falls, Pa. 15010 (phone 846-0100, ext. 644).

RHODE ISLAND (Warwick): **Matthew Puchalski**, Box 102, Charleston, R. I. 02813 (phone 737-2100).

SOUTH CAROLINA (Charleston, Columbia, Greenville, Myrtle Beach, Sumter): **Grady L. Patterson, Jr.**, P. O. Box 11568, Columbia, S. C. 29211 (phone 758-2118).

SOUTH DAKOTA (Rapid City): **William Baron**, Box 1826, Rapid City, S. D. 57101 (phone 342-0887).

TENNESSEE (Chattanooga, Knoxville, Memphis, Nashville, Tullahoma): **James W. Carter**, Williamsburg Rd., Rt. 3, Brentwood, Tenn. 37027 (phone 834-2008).

TEXAS (Abilene, Austin, Big Spring, Corpus Christi, Dallas, Del Rio, El Paso, Fort Worth, Houston, Laredo, Lubbock, San Angelo, San Antonio, Sherman, Waco, Wichita Falls): **Stanley L. Campbell**, 119 Bluehill, San Antonio, Tex. 78229 (phone 342-0006).

UTAH (Brigham City, Clearfield, Ogden, Provo, Salt Lake City): **Lynn Summers**, P. O. Box 486, Clearfield, Utah 84015.

VERMONT (Burlington): **R. F. Wissinger**, P. O. Box 2182, S. Burlington, Vt. 05401 (phone 863-4494).

VIRGINIA (Arlington, Danville, Harrisonburg, Langley AFB, Lynchburg, Norfolk, Petersburg, Richmond, Roanoke): **Orland J. Wages**, 210 W. Bank St., Bridgewater, Va. 22812 (phone 828-2501, ext. 91).

WASHINGTON (Bellevue, Port Angeles, Seattle, Spokane, Tacoma): **John H. Gayton**, 407 South 13th, Tacoma, Wash. 98402 (phone 272-3176).

WISCONSIN (Madison, Milwaukee): **Gene Grob-schmidt**, 4840 S. Howell Ave., Milwaukee, Wis. 53207 (phone 483-6424).

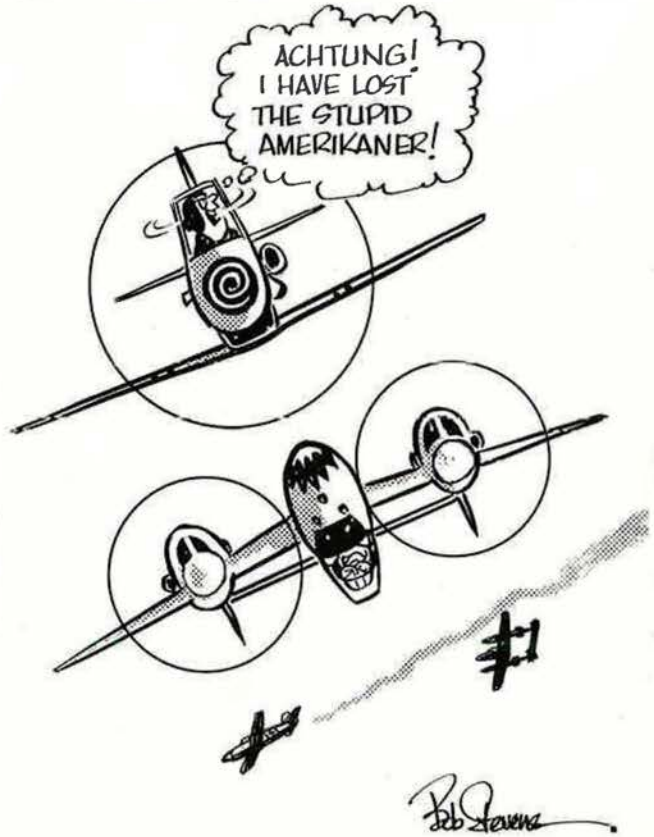
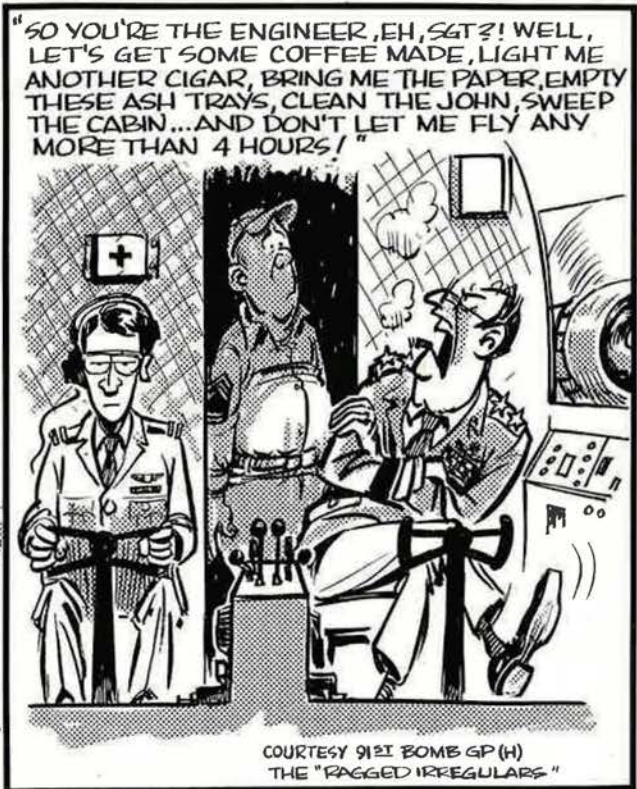
WYOMING (Cheyenne): **George Kaufman**, 217 W. 16th St., Cheyenne, Wyo. 82001 (phone 638-8981).



Bob Stevens'

"There I Was..."

Here, barracks wisdom we distill—
If things can go amiss, they will . . .
A foe misjudged will get the kill . . .
Rank had its dues, and has 'em still . . .
And you, my son, need never fear
If you neglect to volunteer!



Hello, World.



Goddag
Denmark \$6.75)



Wei Wei
(Hong Kong \$8.00)



Hello
(Australia \$9.00)



Bonjour
France \$6.75)



Goeden Dag
(The Netherlands \$6.75)



Pronto
(Italy \$6.75)



Bonjour
Belgium \$6.75)



Hello
(New Zealand \$8.00)



Moshi Moshi
(Japan \$9.00)

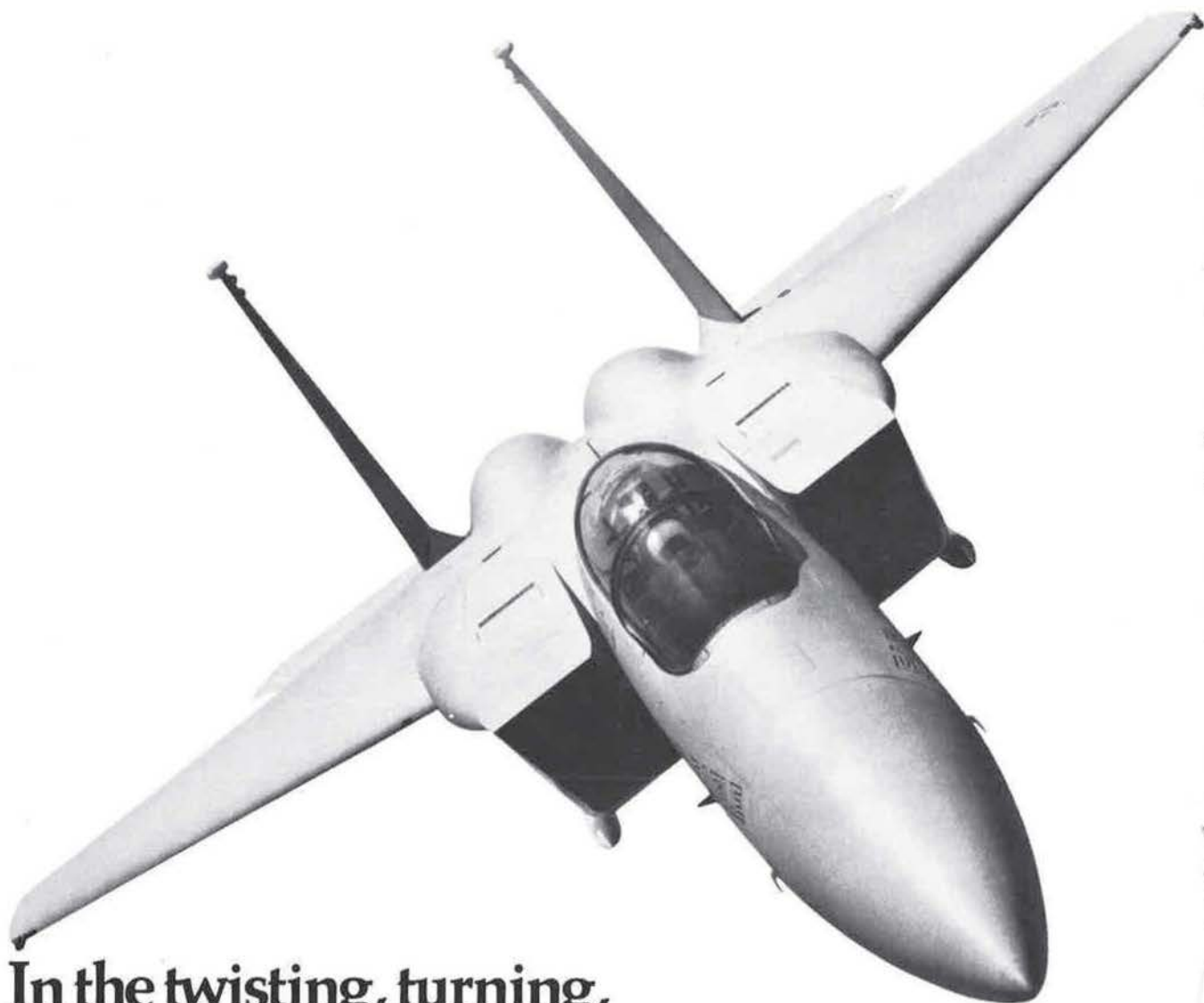
How in the world can you say "Hello" in so many places for so little? Just pick up the phone.

Because you can call for much less than you may think. Even during the business day when rates are sometimes a little higher. The rates above (excluding tax) are for three-minute station-to-station calls placed from the U.S. during normal business hours.

At other times, rates to some of these countries are even lower—check the international operator for night and Sunday rates, rates to other countries, and rates from Hawaii and Alaska.

So, if you have something for the world to hear, make it your business, or pleasure, to spread the word by phone. It's the next best thing to being there.





In the twisting, turning, gut-pulling world of air superiority, the USAF F-15 Eagle is designed to out-fly, out-fight and out-fox the rest.

Jet-to-jet combat demands agility, blazing dash speeds, and the sting of weapons delivered from miles away or at close-in ranges. This is the world of the air superiority fighter – where the new F-15 will excel.

The McDonnell Douglas F-15 will give U.S. Air Force pilots the capability to acquire, identify, engage and defeat any type of hostile aircraft in any weather.

A carefully balanced design, the F-15 combines high speed with unprecedented turn and climb rates. It will carry advanced AIM-7F Sparrow and AIM-9L Sidewinder missiles, an internal rapid-fire cannon, and the most advanced avionics available for navigation and for clutter-free, look-down target acquisition, fire control and defensive warning.

Its weight-saving airframe is designed to withstand the G-pulling rigors of air combat maneuvers, and with its F-100 Pratt & Whitney fanjet engines it has a thrust-to-weight ratio greater than one-to-one.

The F-15 – it's a fighter pilot's fighter.

MCDONNELL DOUGLAS

