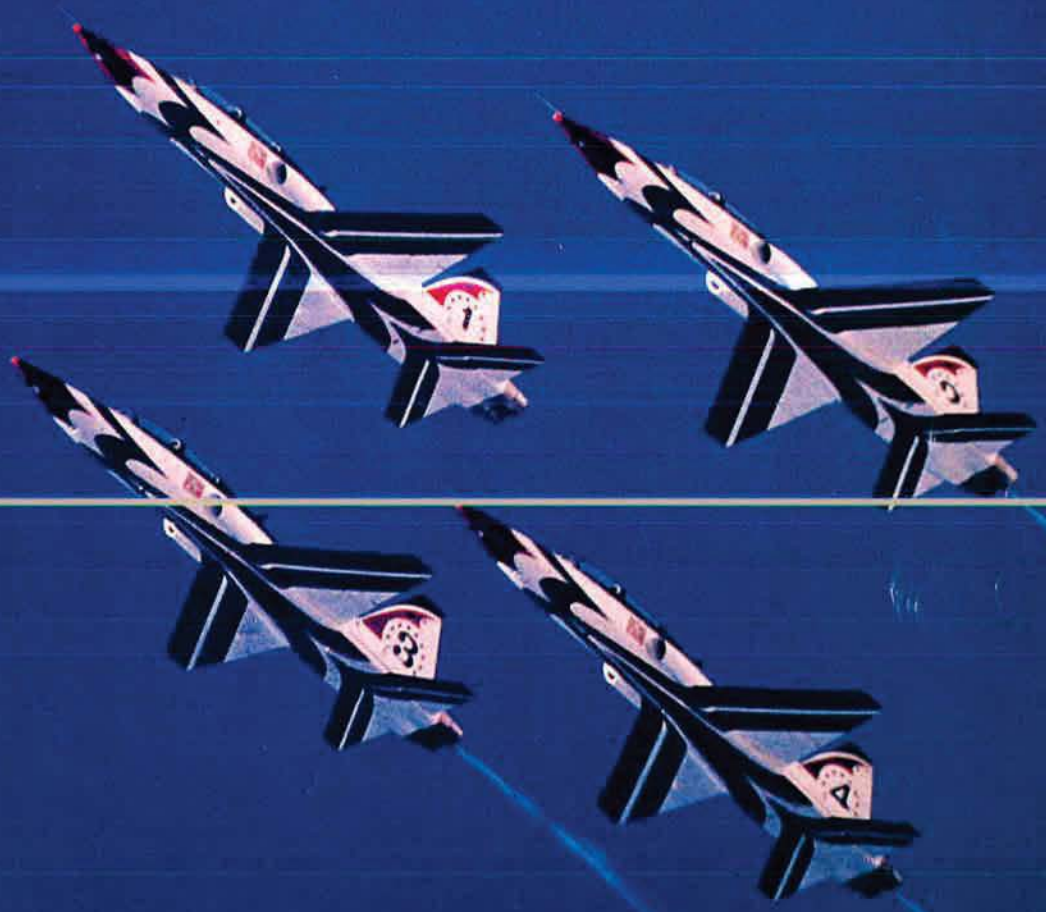
SEPTEMBER 1975 / $2

AIR FORCE

PUBLISHED BY THE AIR FORCE ASSOCIATION

MAGAZINE



USAF's THUNDERBIRDS 1975

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ACTIVE CONTROL TECHNOLOGY enabled General Dynamics to maximize F-16 performance, maneuverability and handling qualities, making it the most advanced air combat fighter in the world.

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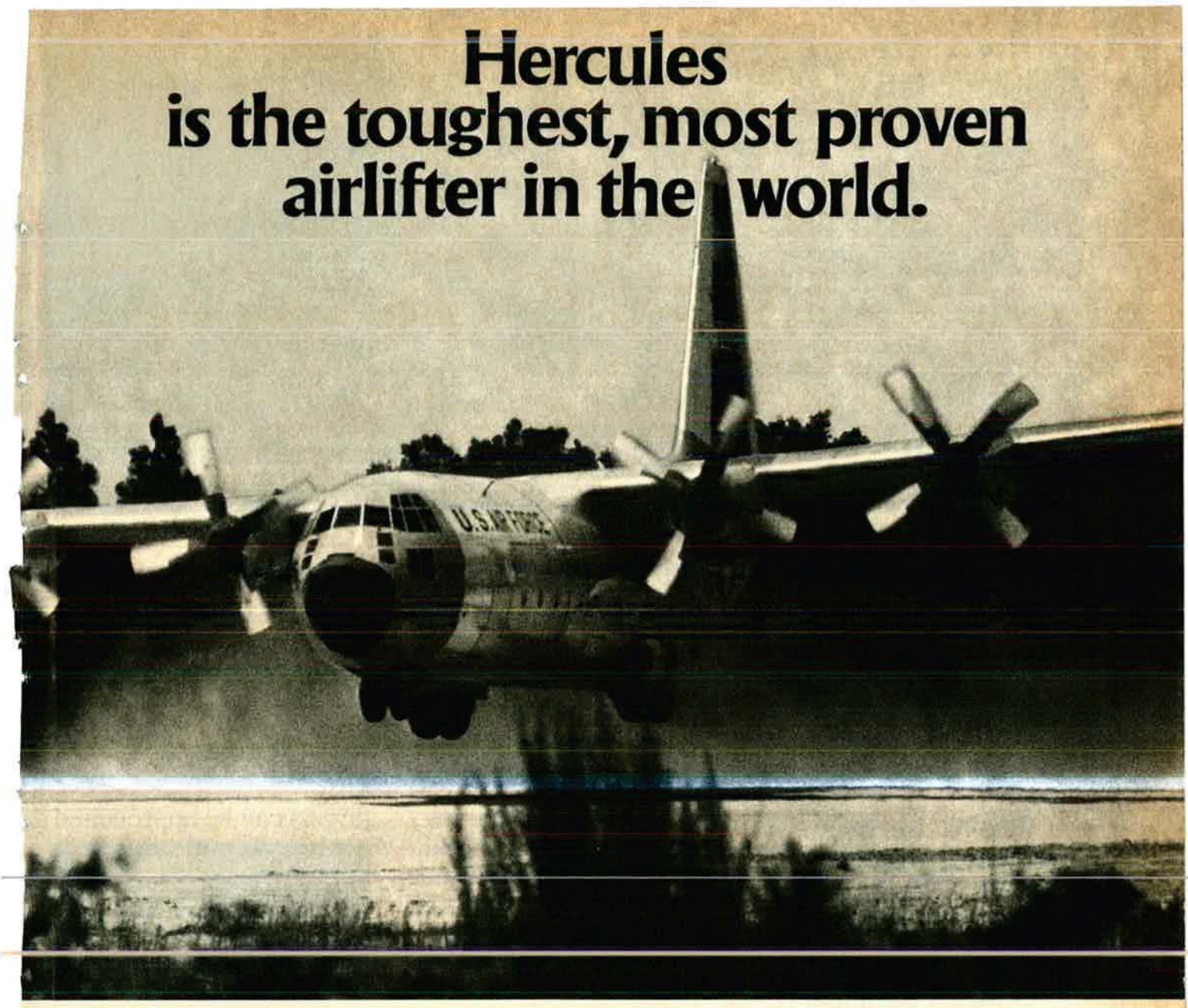
Hercules is the toughest, most proven airlifter in the world.



And we keep making it better.

For years Hercules has been making airlift history. As the plane that can land where others can't. Like on runways of dirt, gravel and even snow. As the plane that can take off from runways as short as 2,100 feet. The plane that's now serving 37 nations.

And Hercules keeps making headlines because we keep making it better.

At Lockheed, we've been working for 20 years with countries who have needed great airlifters. So when it comes to improving an airlifter, we know what improvements to make.

An inside look at the 1975 Hercules will find four completely new systems: radar, autopilot, air conditioning and auxiliary power.

The avionics systems have been improved from nose to tail. Flight controls and hydraulic systems have been updated. During its lifetime, every Hercules' system has been improved. In some cases, we've improved the improvements.

To date, there have been 47 different models of Herc, including tankers, rescue planes, ski planes, and of course, the basic Herc able to carry trucks and bulldozers completely assembled and ready to roll out its 9' X 10' rear doors and go to work.

Hercules: the timeless airlifter that keeps getting better and better.

Lockheed Hercules

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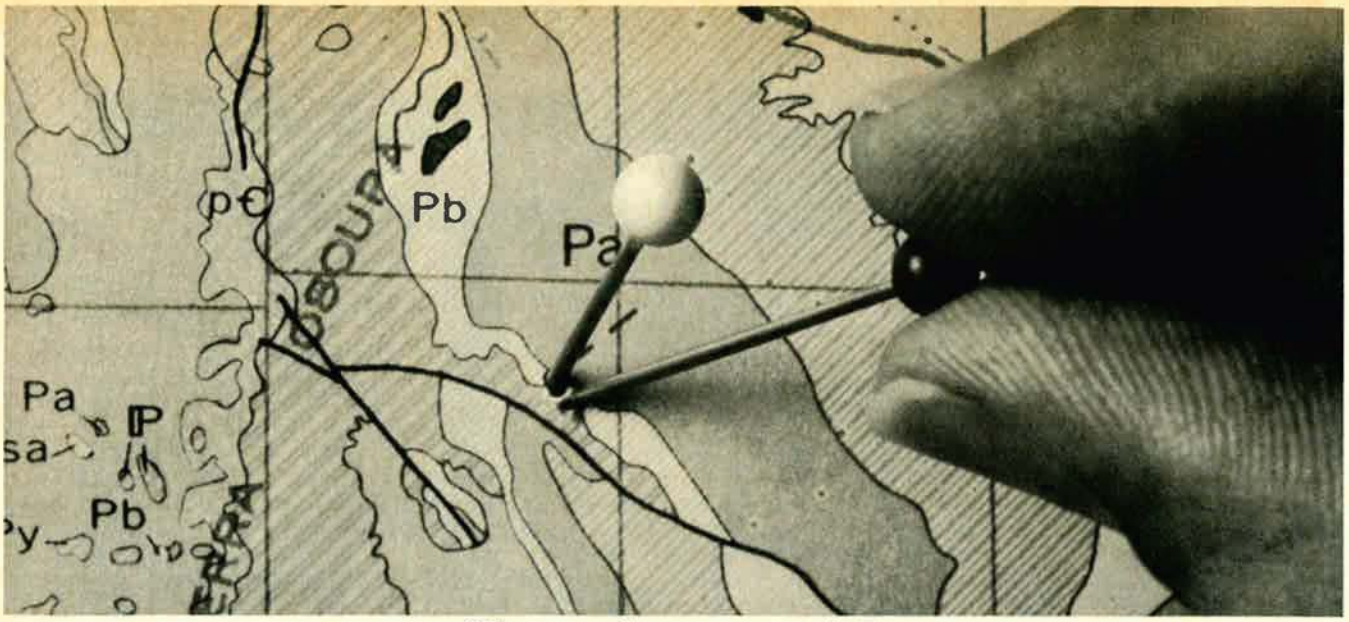


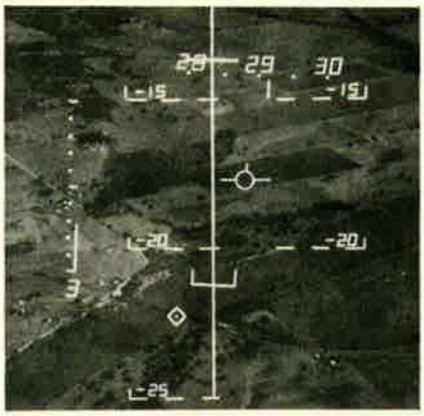
The combat-proven A-7. It provides air support that's always better than close.

The A-7 has the most accurate navigation and weapons delivery system in the world for close air support.

A digital computer is the heart of the system.

It analyzes and coordinates data from forward looking radar, Doppler radar, inertial measurement set, air data computer and pilot commands. This data supports a navigation capability that's completely self-contained and automatic, eliminating any reference to ground-based aids.

The computer-driven Head-Up Display helps insure accurate navigation. It provides a continuous representation of aircraft attitude, heading, altitude, velocity and steering cues to selected destinations. The computer also drives a projected map display



that continually shows aircraft geographical location.

For automatic weapons delivery, the computer instantly solves ballistic prediction problems—targets can be approached

from almost any attitude or airspeed.

Close air support by the A-7 depends on a navigation and weapons delivery system that's totally integrated and computerized.

Because "close" isn't good enough when you're depending on pinpoint accuracy.

LTV AEROSPACE CORPORATION
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AIR FORCE MAGAZINE
PUBLISHED BY THE AIR FORCE ASSOCIATION

SEPTEMBER 1975
VOLUME 58, NUMBER 9

This Month

ABOUT THE COVER

The Thunderbirds, USAF's Air Demonstration Squadron, now in their twenty-third year, flash across the sky in their T-38A Talon aircraft. Spectacular photos of the team in action appear in the photo feature beginning on p. 68.

Departments

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) 452-7300. 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 and "Military Balance" issue) $2 each. **Change of address** requires four weeks' notice. Please include mailing label. Publisher assumes no responsibility for unsolicited material.

BPA Circulation audited by Business Publication Audit

U.S. Tactical

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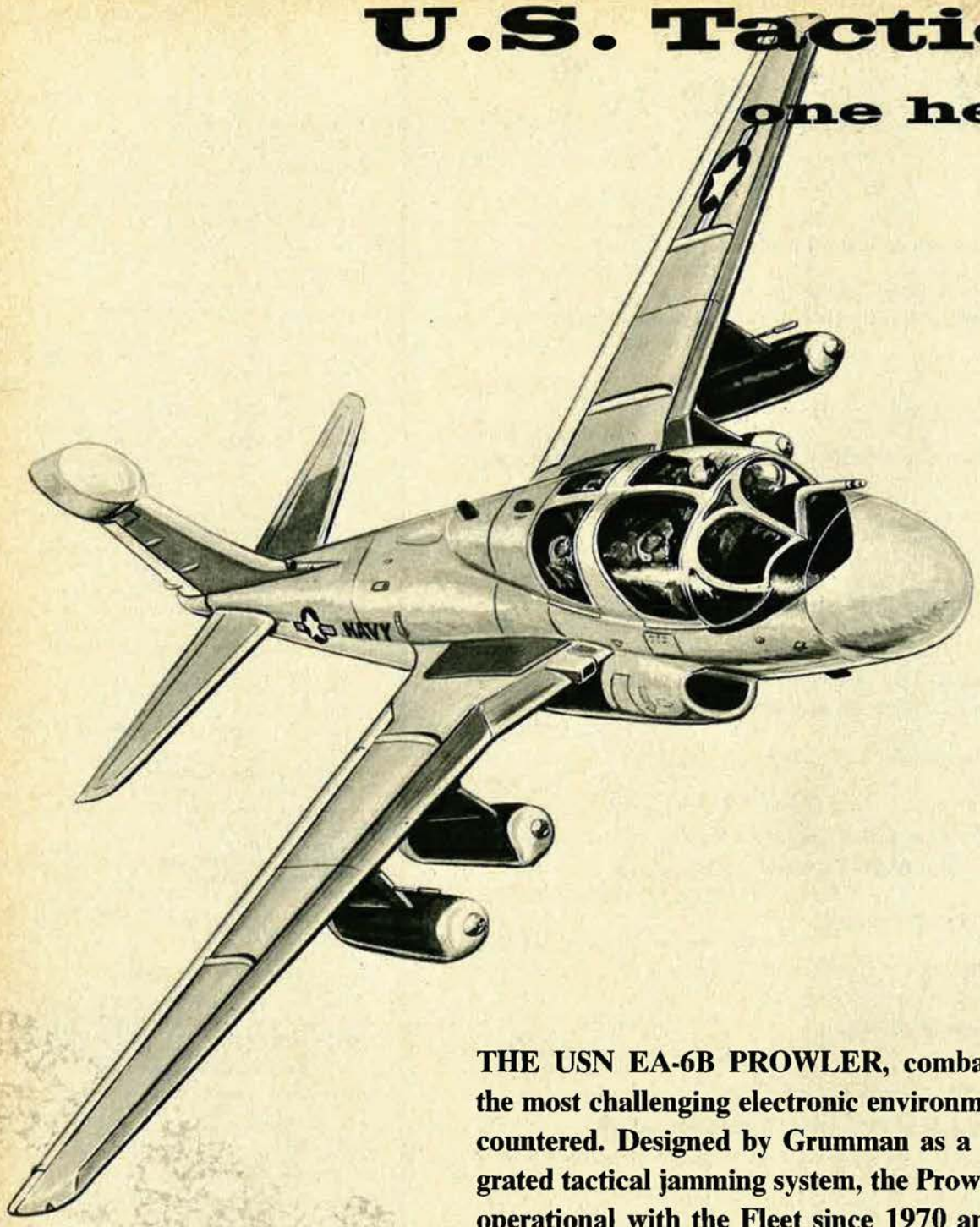

THE USN EA-6B PROWLER, combat-proven in the most challenging electronic environment ever encountered. Designed by Grumman as a totally integrated tactical jamming system, the Prowler has been operational with the Fleet since 1970 and will soon join the United States Marine Corps.

GRUMMAN AEROSPACE CORPORATION

Jamming Systems

another on the way

THE USAF EF-111A TJS, in prototype development at Grumman, will move the proven ALQ-99 system and U.S. tactical jamming into the supersonic era. Grumman is proud to team with the United States Air Force in the EF-111A effort.

The Leaders in U.S. Tactical Jamming Systems

AN EDITORIAL

Détente—One Horse, One Rabbit

By John L. Frisbee
EXECUTIVE EDITOR, AIR FORCE MAGAZINE

THERE ARE many Americans who have long held détente as close to their hearts as motherhood. This "lessening of tensions and hostilities" between the US and the USSR, they have told us repeatedly, could spell an end to the cold war, release from the specter of nuclear conflict, the passage from an era of confrontation to one of negotiation.

These are goals devoutly to be sought, but as happens more often than not in the affairs of men, realization has fallen short of expectation. The cold war has not ended—only taken new directions; the likelihood of nuclear conflict has, if anything, increased as the strategic balance shifts in favor of the USSR. As for confrontation, the character of Soviet actions would lead us to believe that they are negotiating now, in order to confront later, and on more favorable terms.

We are not alone in this assessment. In recent months, the enthusiasm with which détente was embraced, even by some of its most ardent and articulate supporters outside of government, has waned. But no one can say that two US Administrations have not tried to make it work. In fact, some of the more severe critics of détente hold that in pursuit of the elusive goal those Administrations have mortgaged at least the lower forty if they haven't given away the farm.

We wouldn't go *that* far, not yet, anyway. But we wonder if détente is the right word for the supposedly reciprocal process of tension-lowering that has become a cornerstone of US foreign policy. It's beginning to resemble the greasy-spoon recipe for "rabbit" stew: fifty-fifty horse and rabbit—one horse, one rabbit.

Look at the détente record, beginning with SALT I. That agreement, laboriously negotiated but precipitously concluded during Mr. Nixon's 1972 visit to Moscow, has proved to be full of ambiguities and loopholes that had to be patched with protocols, interpretations, and unilateral declarations which, in some cases, created their own ambiguities. The Soviets have been alert to take advantage of the situation and, allegedly, have gone beyond that to the point of cheating on the terms of the agreement itself. That record is examined in much greater detail than can be cited here by retired Adms. Elmo Zumwalt, former Chief of Naval Operations, and Worth Bagley, former Vice CNO, in a hard-hitting article released by New York *Times* Special Features early in August.

You will recall that in the SALT I Interim Agreement, we conceded the Soviets 804 more ICBMs and SLBMs than the US, a numerical superiority supposedly offset by our MIRV capability, which the Soviets did not have in 1972. Both sides were allowed to modernize their missile forces, but no existing light missile was to be replaced by a heavy missile, nor could missile silos be increased in dimension by more than fifteen percent. We have never been able to get the Soviets to agree on the definition of "light" and "heavy." As for silo dimensions, according to the Admirals, "our negotiators made it clear that this meant an increase of fifteen percent in *one* dimension. . . . [The Soviets] have argued that *all* silo dimensions can be increased by fifteen percent, which would give them silos fifty percent larger in volume than before." Thus, the USSR is now deploying the SS-19, "a missile fifty percent larger and three to four times heavier in throw weight than the SS-11 it replaces." The SS-19 carries up to six MIRVs in the one- to two-megaton range, in contrast to the SS-11 with its single one-megaton warhead.

Zumwalt and Bagley report other violations "such as the construction of silos in greater numbers than authorized under the treaty . . . [and] testing unauthorized radars in an ABM mode." The Russians have, the Admirals say, "violated the basic contracts of SALT I, the attached protocols, the agreed interpretations, and the unilateral declarations."

Against this record of duplicity, can we trust the Soviets to stick by the provisions of the November 1974 Vladivostok Agreement (the basis for on-going SALT II)? That formula will give them "a fourfold superiority in missile megatonnage . . . and a 2.7-fold superiority in warheads when the Soviets complete deployment of their huge new systems." But without foolproof verification of MIRVing (and the Soviets insist that no real verification is needed) what is to prevent them from further increasing their superiority by MIRVing more than the allowed number of missiles? Soviet integrity? Do we want détente badly enough to rely on that?

You can add to these Soviet contributions toward lessening tensions their massive materiel support of Hanoi in violation of the Vietnam cease-fire, their encouragement of the Arab states to increase oil prices, their buildup of Warsaw Pact forces reported in these pages last month. The wheat deals, though not in quite the same category, have added a pinch of wormwood to our cup of gall.

We could go on, but the clincher is Helsinki. There, on August 1, in the name of détente, the US, along with thirty-five other nations, signed the texts of the European Security Conference that sanctified Moscow's control in perpetuity of Eastern Europe. Inevitably, Munich comes to mind.

The détente-associated events of the past five years are, as a matter of fact, more than vaguely reminiscent of the European democracies' attempts to lessen tensions and hostilities between themselves and the Nazi regime prior to World War II. A great deal of *quid* and very little *quo*. But that was nearly forty years ago and historical analogies are inexact at best. Besides, that wasn't détente. It was called appeasement. ■

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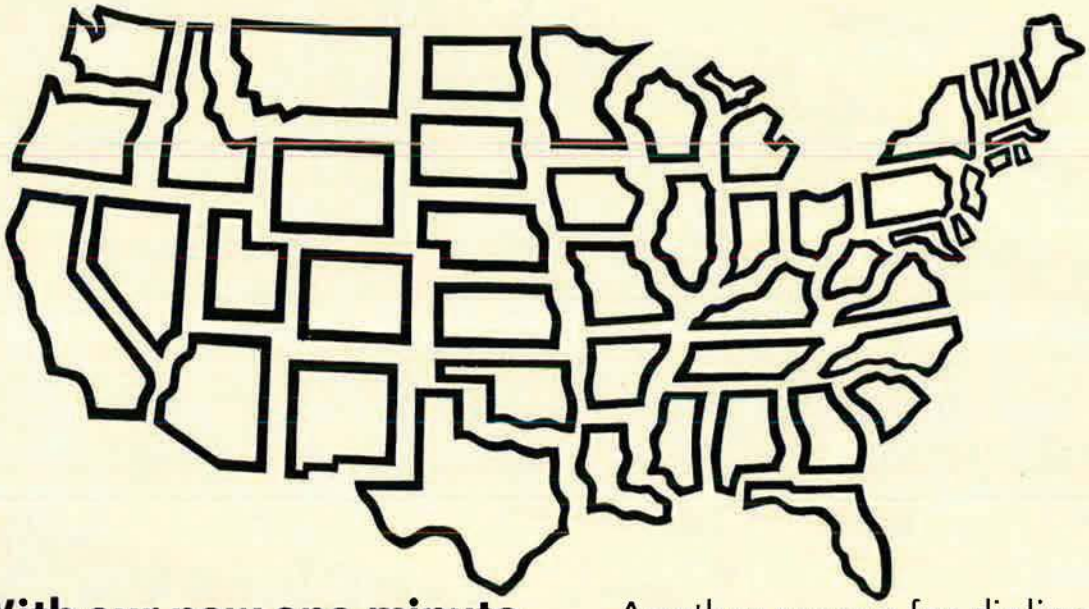

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Another reason for dialing direct is the big difference between operator-assisted and dial-direct rates. Compare the prices in the rate chart below. Tear out the chart and keep it near your phone. It will help you control your Long Distance costs.

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FULL RATE	35% DISCOUNT	60% DISCOUNT
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Monday-Friday 8 a.m.-5 p.m.	Sunday-Friday 5 p.m.-11 p.m.	Every night 11 p.m.-8 a.m. Saturday—day and night Sunday—day and night except 5 p.m. to 11 p.m.
First Minute **56¢**	First Minute **36¢**	First Minute **22¢**

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Dial-direct rates apply on all interstate calls (excluding Alaska) completed from a residence or business phone without operator assistance. They also apply on calls placed with an operator from a residence or business phone where dial-direct facilities are not available. For dial-direct rates to Hawaii, check your operator. Dial-direct rates do not apply to person-to-person, coin, hotel-guest, credit card or collect calls, or to calls charged to another number, because an operator must assist on such calls. Rates quoted do not include tax.

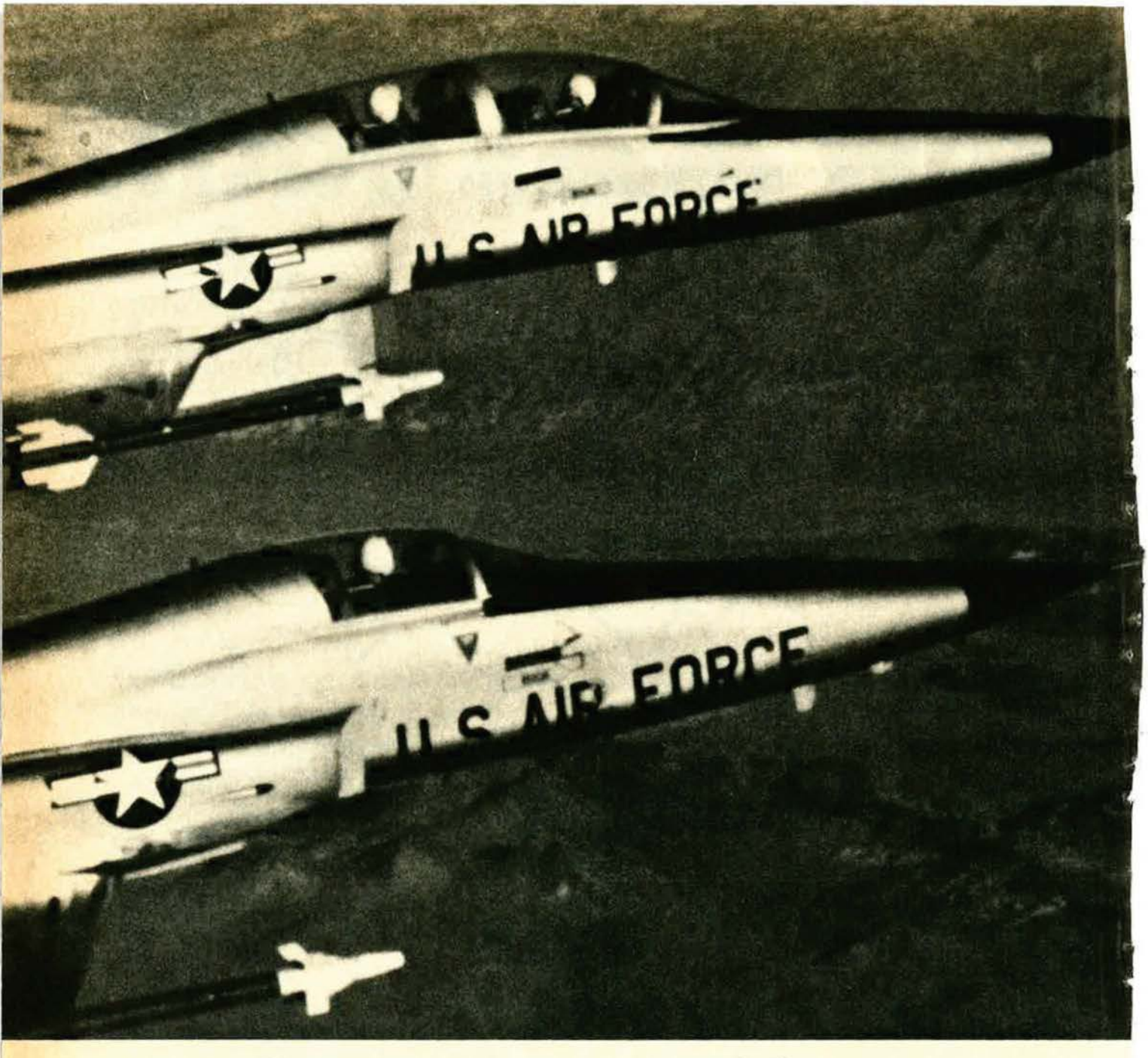
OPERATOR-ASSISTED THREE MINUTE RATES

STATION-TO-STATION
Full rates apply at all times
First 3 minutes
$1.95

PERSON-TO-PERSON
Full rates apply at all times
First 3 minutes
$3.55

Additional minutes same as dial rate. Applicable discounts apply to additional minutes during "Evening" and "Night & Weekend" periods.

Cut this chart out and put it in your phone book.



Companion Ship.

The Northrop F-5E Tiger II is in good company when its companion is the two-place F-5F.

Both are high-performance fighters with excellent combat agility and weapons delivery accuracy, air-to-air and air-to-ground.

But the versatile F-5F, with its second cockpit and dual controls, can be used for advanced pilot training, as well as combat crew training, while retaining full combat capability.

The easy maintenance, rapid turnaround, and extended endurance of the F-5E and F-5F, coupled with their proven performance and training capability, have made this pair of Tigers ideal for countries requiring flexible defense systems at affordable costs.

The F-5E and the F-5F join the F-5 on duty, or on order, with the air forces of 22 nations. We have delivered more than 2,600 aircraft in the F-5/T-38 series so far. On time. On cost. With the promised performance, or better.

These planes, together with the new McDonnell Douglas/Northrop F-18 for the U.S. Navy, make up the Northrop family of fighters—high performers at affordable costs.

Northrop Corporation, 1800 Century Park East, Los Angeles, California 90067, U.S.A.

NORTHROP

Airmail

Common Causes (Cont'd)

Gentlemen: Claude Witze's "Stop the B-1, Dishonestly" (AIR FORCE, June 1975), an editorial review of our new slide show, "The Supersonic Swing-wing Swindle: The Story of the B-1 Bomber," confuses disagreement with dishonesty. While it is clear that he disagrees with our position that the B-1 will add billions to corporate profits but nothing to our national security, he completely fails to prove the serious charge of dishonesty.

Mr. Witze directly challenges our facts in two areas: weapons profits and Rockwell International's history of involvement in the bomber business. The low profit figures he cites express profits as a percentage of sales. But the rate of return on sales varies considerably according to the characteristics of the business, and in the case of the weapons business it is particularly deceptive because of the large amount of capital provided by the government. The standard generally accepted by economists and securities analysts for comparing the profitability of corporations and industries is rate of return on investment. Therefore, the fifty-six percent rate of return on equity that we cite from a General Accounting Office report is much more to the point.

Mr. Witze says that Rockwell has not had a bomber in production since 1951; we say, "Rockwell has been in the bomber business since World War II." Both are statements of fact. Rockwell has been working on bombers since World War II even though only the B-45 reached the production phase. The company's predecessor, North American, worked on a program which culminated in the B-70 (for more than a decade, 1954–1964). By the time the surviving B-70 was retired to the Air Force Museum, North American's top management and scientific teams were already hard at work on AMSA and, later, preparing their bid for the B-1 project.

To illustrate our point that many corporations have come to depend on military contracts, we quote Willard Rockwell's reaction to his company's B-1 contract award: "We knew that as a company we had one more chance—the B-1." Mr. Witze asserts (without substantiation) that Rockwell was referring "to military aircraft contracts only," but there is nothing in the accounts published at the time (see *Fortune,* July 1970) to back him up. Since that time, North American Rockwell has been involved in a series of mergers so that the percentage of Rockwell International's sales accounted for by weapons is now lessened. But military work continues to account for a major share of the firm's business.

Mr. Witze characterizes our account of David Packard's career as a "vicious attack," yet he does not question our facts. Rather, he complains that we do not acknowledge that Packard "made a contribution to his country and did it at huge personal sacrifice." We assert nothing as to Packard's motives of sacrifice or gain, but point out that he brought a corporate point of view to his post of Deputy Secretary of Defense and helped strengthen a profit-oriented military/industrial complex. A major thrust of his "reforms" was to expand cost-plus contracts, thereby guaranteeing profits to weapons makers on DoD contracts.

The real difference between your view and ours is over who is deserving of attention and sympathy: the Deputy Secretary of Defense who had to put his $300 million into a charitable trust for three years and take a salary cut to $42,500 a year; or the eight million Americans who are actively looking for work they can't find. . . .

Despite the fact that the documentation of our slide show is based on research using government reports, congressional testimony, newspapers, and industry sources (including AIR FORCE Magazine), Mr. Witze complains, "There is no evidence of any input from recognized authorities on airpower or bombers." We strongly believe that the American people should not leave questions like whether to spend billions on a bomber to the experts alone. . . . NARMIC and the Stop the B-1 Bomber: National Peace Conversion Campaign will continue to work to convince people of our view that the B-1 is not necessary for national security and that it is being pushed by special interests to increase their own profits and prestige.

Stefan Ostrach and David Goodman
Producers of B-1 slide show for NARMIC, a project of The American Friends Service Committee
Philadelphia, Pa.

• *Rockwell International's annual report does not provide a breakdown showing its sales of military aircraft. In 1974, all government sales, as opposed to nongovernment, accounted for thirty-six percent of the business. In that same year, all aircraft sales, including the firm's substantial commercial jet business, added up to 10.7 percent of all sales. There still has been no bomber in production since 1951.*

Also, in reference to the June article, "Airmail" in August carried a refutation from Don Luce and Jamie Lewontin of Clergy and Laity Concerned (CALC), in which they took exception to what they called the "suggestion" that they may be funded in part by tax-exempt contributions. It now develops that on May 7, the day Mr. Witze's article was written, Dr. Claire Randall, General Secretary of the National Council of Churches, a tax-exempt organization, advised CALC in writing that any use of the Council's name in CALC funding efforts is unauthorized and must "cease now and in the future." On August 1, Rep. Steven D. Symms of Idaho proposed in the Congressional Record *that Congress investigate the incident.*—THE EDITORS

Gentlemen: Claude Witze's July article, "The Real Common Cause," would have fit better under "The Wayward Press."

First of all, Common Cause does not favor unilateral disarmament *per se.* It merely asks that resources applied to national security be the result of open debate. Its opposition to the B-1 (whether right or wrong) is based on the belief that the manned bomber is becoming obsolescent.

Secondly, if Mr. Witze must resort to attacking Common Cause's news conference bumbling he is indeed short of factual information. Such

Airmail

comments are hardly relevant to the national security issue.

Finally, the logic attributed to Rep. Joe Skubitz is näive. It assumes that resources committed to defense never endanger our national security. We should remember that Mr. Skubitz' logic could have been used to defend expenditures for the Maginot Line.

The greatest threat to the American way of life was in the White House from 1969 to 1974. It was organizations like Common Cause that fought that battle, which was just as important as any fought by the military. . . .

Col. Peter F. Dawson, USAF (Ret.)
La Verne, Calif.

Gentlemen: Your July article by Claude Witze, entitled "The Real Common Cause," inaccurately describes the May 7 press conference on the B-1 bomber. You fail to mention, for instance, that the National Taxpayers Union and Environmental Action were among five sponsoring organizations at the conference. Representatives of these two organizations and two cameramen were the only people present when Mr. Hébert ordered the press conference canceled. Contrary to your report, there was no unfriendly "exchange," nor did any of the anti-B-1 people storm about in anonymous rage.

Mr. Witze attempts to conceal the fact that the press conference represented a significant coming-together of disparate groups who share a view that Congress may yet endorse: that the B-1 is an extravagant, unnecessary weapon that will jeopardize world peace while its enormous cost undermines the real security of the American people.

Roger Tresolini
National Taxpayers Union
Washington, D. C.

B-1 Propaganda

Gentlemen: The article, "Stop the B-1, Dishonestly" [by Claude Witze, June '75 issue], is a masterful presentation of how the antidefense and anti-American economic system propagandists have been operating for the last fifteen years.

There seems to be much similarity in the propaganda techniques employed currently in this country and the techniques used in Nazi Germany in the 1930s—and yet we have a free press. Perhaps regular exposés such as your story on the B-1 will help bring back intellectual and factual honesty. It's a great start!

Col. Joe J. Synar, AFRES (Ret.)
Dallas, Tex.

Knowledgeable Analysis

Gentlemen: Once again Claude Witze has hit the nail on the head. His article, "The Real Common Cause," shows a keen insight and personal knowledge of what is happening to our defense on the Hill and tells it like it is.

Likewise, Claude's article on the Paris Air Show, "Ploys and Paradoxes," shows that Claude was there and knew what was going on. His personal accounts of many of the circumstances and happenings at the show indicated his keen reporter instincts, combined with tremendous background on aerospace and defense matters, make him tops in the business.

I would also like to congratulate AIR FORCE Magazine for including the guest editorial, "For an Adequate Defense," by Eugene V. Rostow. It gives one the feeling that maybe we are not yet fighting a lost cause and there is still hope for a strong America.

Ted Milton's article, "Indifference—Archenemy of Defense," summed up other vital matters that have been influencing the defense budget. Likewise, he is one who has been there and speaks with authority.

I would like to suggest that we hear more from Gen. Ira Eaker. I read his weekly articles; they are solid and come from a well-informed and knowledgeable General who, over the years, has been right most of the time.

The July issue of AIR FORCE Magazine is an excellent in-depth and knowledgeable analysis of what has been happening in Washington and around the country in aerospace and defense.

Ralph J. Watson
Dir., Legislative Liaison
North American Rockwell
Washington, D. C.

Weather Team Slighted

Gentlemen: "The Day the Eagle Streaked," by Maj. Roger J. Smith, in the July issue certainly emphasizes the criticality of weather in determining the optimum flight profile for the F-15 time-to-climb record. I am dismayed, however, by

the lack of credit given directly to the Air Weather Service. The article, while explaining the need for precise go/no-go weather information, states, "I call the room of Sgt. Jim Flaggart, our weather balloon team chief. No answer. His group is at work also."

The author failed to indicate that the Air Force Global Weather Central at Offutt AFB, Neb., and the local weather support unit had been feverishly monitoring the conditions necessary for launch—not just on D-day but weeks prior. I would think that the author would give more credit to those "invisible" USAF weathermen than he has done—for without them, the record could not have been broken.

Maj. Dell V. McDonald
Staff Weather Officer
OL-E, 16th Weather Sqdn., USAF
Fort Leavenworth, Kan.

It's a Douglas B-26!

Gentlemen: On page 61 of the June issue you have labeled a photograph of a Douglas B-26 Invader as a B-26 Marauder (the Marauder being built by Martin).

Of course, you are not alone in this commonly made error. Almost every magazine in the business has done it more than once. That mistake was the subject of an article in the McDonnell Douglas *Spirit* of March 1971, entitled "A B-26 Isn't Always a B-26 . . . Sometimes It's a B-26," authored by the undersigned.

Please do not let my nitpicking detract from the splendid job your magazine is doing. Keep up the type of articles that you are currently bringing to the reader.

H. S. Gann, Manager
Aircraft Information
Douglas Aircraft Co.
Long Beach, Calif.

• *Our thanks to Mr. Gann and all the other sharp-eyed readers who picked this one up. Reference the concluding paragraph above: We won't. We will.—THE EDITORS*

Old '477

Gentlemen: Thank you for the excellent report by Charlotte Knight, "The Air War in Korea," in the June issue. The portion regarding the F-80s brought back some warm memories—particularly the picture of the F-80 on page 62.

I hate to disappoint anyone, but the aircraft pictured is not an F-80. It is an FP-80 or RF-80, and I say this with sentimental authority. Number 58477 was assigned to me during my stint as Operations Officer in the 12th Photo Recon Squadron at March Field, Calif., in the late forties. Old '477 and I had a hell of a lot of fun (and got into our share of trouble) during those great days.

The GI ingenuity again referred to in the paragraph dealing with the "locally designed and manufactured elongated wingtip tanks" also struck a spark. My acrobatic team wingman at March Field, Lt. (now a retired colonel) "Rabbit" Johnson, was a front runner in that project, and the story of how they brought the thing off is terrific in its own right.

Col. Valin R. Woodward,
USAF (Ret.)
Albuquerque, N. M.

Demonstration Teams Memorabilia

Gentlemen: The Air Force Museum is planning a display highlighting the various USAF aerial acrobatic and demonstration teams of the past and present, such as the Thunderbirds, Skyblazers, Acrojets, and Sabre Knights, as well as the Skylarks and Three Men On a Flying Trapeze of pre-WW II vintage.

We have obtained flight gear, advertising posters, and photos of the Thunderbirds, but we would like to hear from readers who have photos or other memorabilia they would be willing to make available to us and which relate to the various other USAF aerial demonstration teams.

Charles G. Worman
Chief, Research Division
Air Force Museum
Wright-Patterson AFB, Ohio 45433

RCAF Club

Gentlemen: I wish to advise readers of the Royal Canadian Air Force Pilots Club. The club has the same aims as the RCAF Association. Membership in the RCAF Pilots Club is open to anyone who served in the Royal Flying Corps, or the RCAF, and who was presented the pilot wing of either of those services. Application forms are available from the undersigned.

Col. A. J. Bauer, Sec'y
RCAF Pilots Club
Box 1020, Station "B"
Ottawa, Canada

"Big Week" Missions

Gentlemen: I am writing a book on the "Big Week" series of missions undertaken by the US Eighth and Fifteenth Air Forces during February 1944.

I would be pleased to hear from

Airmail

anybody who was in any way involved in those missions. Personal reminiscences and photographs would be especially welcome.

A. G. Wilson
27, Fairlands Road
Worplesdon
Guildford
Surrey, England

UNIT REUNIONS

AIRSHO 75
Produced by the Confederate Air Force, AIRSHO 75 will be held October 9–12 at Harlingen, Tex., Industrial Airpark. Featuring WW II aircraft recreating historic air battles; aerobatics by US and international champions; Golden Knights; Silver Eagles; home-built and antique aircraft. For brochure and further information write

Col. Glenn Bercot, CAF
Public Information Officer
Hq. Confederate Air Force
Rebel Field
Harlingen, Tex. 78550

Air Weather Service
Northern California AWS retired officers will meet October 11 at the Officers' Club, NAS-Moffett Field, Calif., for their annual dinner meeting. All ex- and retired AWS officers welcome. Contact

Milton H. Sipple, Jr.
2589 Dumbarton Ave.
San Jose, Calif. 95124
Phone: (408) 267-2555

Slow FACs
A Slow FACs reunion will be held October 24–27 at the Tropicanna Hotel, San Antonio, Tex. For more information contact

Capt. John Archer
2167 NE Loop 410, Apt. C-21
San Antonio, Tex. 78217

A-1E/H
The annual A-1E/H reunion will be held October 17–18 at the Menger Hotel in San Antonio, Tex. Spads, Sandys, Hobos, Fireflys, Zorros, spADs, Downed or Rescued Crewmembers, and any other interested parties are encouraged to attend. Send inquiries to

A-1 Skyraider Association
Box 41
Randolph AFB, Tex. 78148

Class 47-C
The USAF's first pilot class, 47-C, will have a reunion October 9–11, at the Ramada Inn, Fort Walton Beach, Fla. Class members who wish to attend or who have knowledge of current addresses and telephone numbers of any old classmates, please write or call

Lt. Col. Frank Bailey, USAF (Ret.)
114 Troy Circle
Fort Walton Beach, Fla. 32548
Phone: (904) 244-5118 (office)
(904) 242-8946 (home)

SOS
Squadron Officer School (SOS) will celebrate its 25th anniversary Sept. 18–19. A variety of activities are planned *(see May '75 "Airmail," p. 11)* for all former faculty members and graduates of the first SOS class—the class of 1950 at Maxwell AFB. For further information contact

Capt. Allan Kettlehut
SOS/EDOT
Maxwell AFB, Ala. 36112

305th Bomb Group
The 305th Bomb Group, Chelveston, England, WW II, is planning a reunion in Miami Beach, Fla., October 10–12. A roster is being compiled. Get in touch with

Abe Millar
P. O. Box 757
Sanger, Tex. 76266

312th Bomb Group
All former members of the famous WW II 312th Bombardment Group—please send complete name, address, and squadron assignment to me for use in the history of the group which I am writing.

Dr. Russell L. Sturzebecker
503 Owen Rd.
West Chester, Pa. 19380

353d Fighter Group
The 353d Fighter Group, 8th AF, Metfield and Raydon, England, WW II, is beginning regrouping action. A group register is now established and a future reunion is being planned. Former members are asked to send donations and addresses to

John M. Balason
1410 South Main St.
Las Vegas, Nev. 89104

351st Bomb Group
The 351st Bomb Group and all other units at Polbrook, England, WW II, are holding a reunion October 10–12 in Miami Beach, Fla. For further details write

Lt. Col. Donald B. Drought
2449 University Blvd., West
Jacksonville, Fla. 32217

Ohio 433d TC Wing
The Ohio 433d Troop Carrier Wing Veterans Association is planning its 25th anniversary reunion October 10–12, at the Holiday Inn in Wickliffe, Ohio (just east of Cleveland at Interstate 90 and US 20). Please contact

John J. Primeau, Sec'ty
Ohio 433d TCW Veterans Assoc.
P. O. Box 17018
Cleveland, Ohio 44117
Phone. (216) 289-7200 (office)
(216) 531-0943 (home)

U. S. Air Force

Task Masters.

For the jobs that need to be done, the engines to do the job.

The F101-powered B-1 strategic aircraft.

The TF34-powered A-10 close support aircraft.

The F103-powered YC-14
Advanced Medium STOL Transport.

The F103-powered E-4A Advanced Airborne Command Post.

General Electric engines continue to prove they can handle the toughest Air Force assignment.

The B-1, for example, is now successfully airborne. Powered by four advanced-technology F101 augmented turbofans, the B-1 will fly from low-level penetration speeds just under Mach 1 to supersonic speeds at high altitudes. And it will cover a longer mission range with greater survivability and nearly twice the payload of America's current intercontinental bomber.

The A-10, powered by twin GE TF34 high bypass turbofans, is poised to meet its mission requirements, too. The TF34's high thrust-to-weight ratio and low fuel consumption provide the A-10 with unmatched performance capability for its close air support mission. Plus improved short-field takeoffs and landings, exceptional maneuverability and the capability for increased loiter time in the mission area.

Two advanced aircraft are powered by GE's F103 engine. Powering the YC-14 Advanced Medium STOL Transport (AMST), twin F103s will provide that aircraft with outstanding and reliable short-field capabilities plus excellent mission range and payload. Powering the E-4A Advanced Airborne Command Post, four F103 high bypass turbofans give that aircraft the power, reliability and low fuel consumption needed to meet its varied and complex mission objectives.

General Electric engines. Once again, the Task Masters for critical Air Force missions. 205-115

GENERAL ELECTRIC

The world has waited 43 years for this

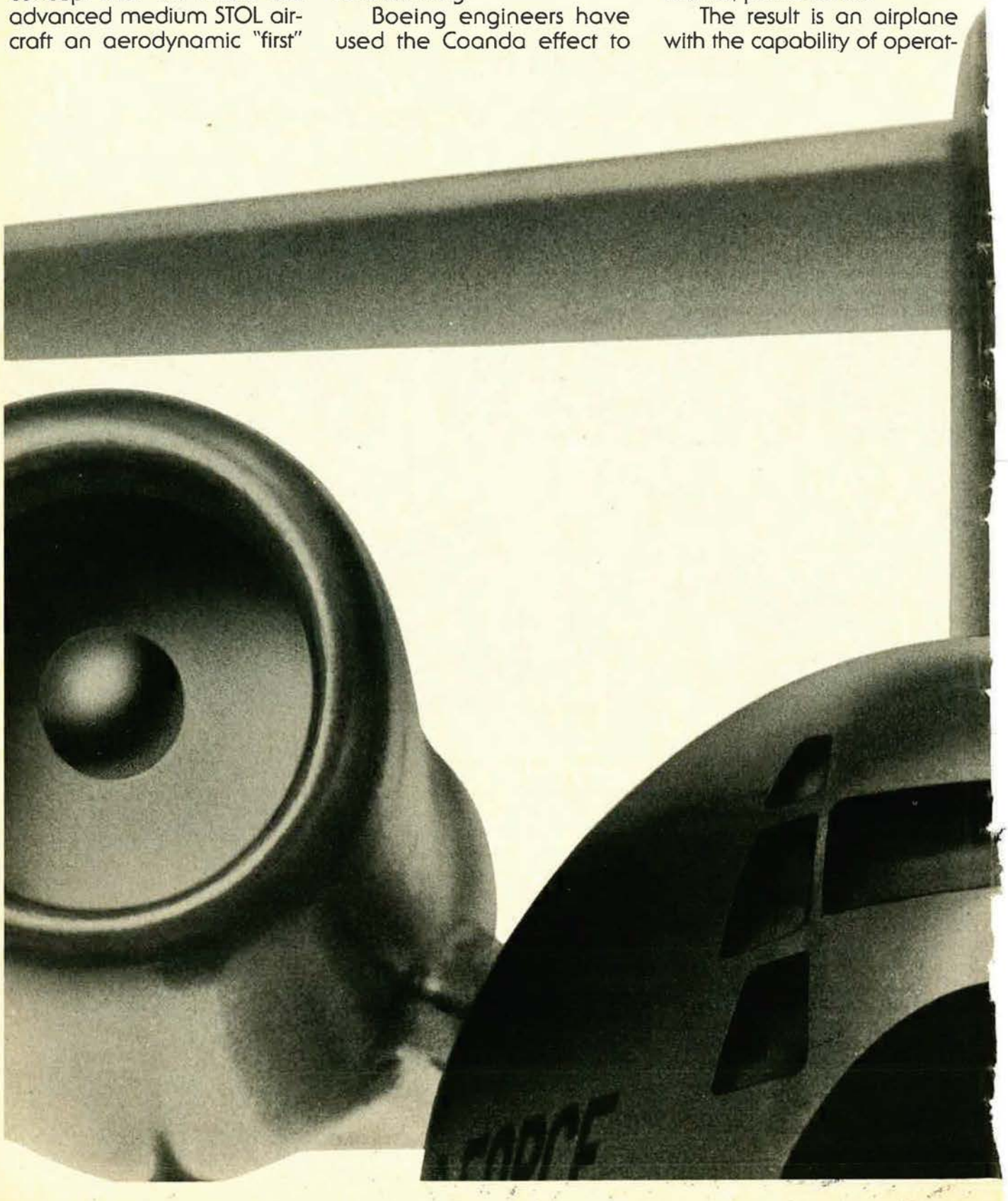
The Boeing YC-14 two-engine jet transport will fly in 1976.

The revolutionary, new concept that will make this advanced medium STOL aircraft an aerodynamic "first" was patented by Henri Coanda in 1932.

The Boeing adaptation of this idea is called upper surface blowing.

Boeing engineers have used the Coanda effect to create powered lift. Thrust from the aircraft's two engines is blown over the wing flaps and is directed downward for added, powered lift.

The result is an airplane with the capability of operat-



idea. It's worth waiting one more.

ing from an unimproved field less than half the length of those required by standard aircraft of comparable size.

The YC-14 can take off and land on a 2,000-foot field with a 27,000-pound payload. Carry 69,000 pounds to and from a 4,100-foot field. Cruise at 450 miles per hour and land at a lazy 100 miles per hour.

There's no other plane like it. And after 43 years, it's worth waiting one more.

BOEING YC-14

Airpower in the News

By Claude Witze
SENIOR EDITOR, AIR FORCE MAGAZINE

Back to the Kitchen

Washington, D. C., August 11

Newsweek magazine of August 11, this date, features a story about the new French cuisine, which, *Newsweek* says, is not as fattening as the old French cuisine. On the cover, there is a spectacular picture of chef Paul Bocuse, in white smock and high white hat, posing with a strawberry dessert and lobsters. Inside, the first and lead story is about the Helsinki conference and there is another color picture, this one of President Ford, Leonid Brezhnev, and other chiefs of state dining in splendor. *Newsweek* fails to tell us anything about the menu, but we can't escape the impression that Paul Bocuse would not approve of it. This heretical French cook runs his kitchen without flour, butter, sugar, or cream. He is trying, with notable success, to change the recipes. At Helsinki they have changed nothing, neither the menu nor the legitimacy of Russia's conquests in Poland, Romania, Finland, Estonia, Latvia, or Lithuania. This is détente; it is peaceful coexistence.

George W. Ball, a former Under Secretary of State, has posed the key question:

"Should we not, at least, insist on the evil nature of the Berlin Wall—that it is not a fortification to keep invaders out; it is a cage the Russians built to imprison peoples who would opt for freedom?"

The fact that not one brick has been disturbed in the Berlin Wall is something that real liberals, including those in the US Congress, should view with alarm. Yet, they do not. As the conference opened in Helsinki, the House of Representatives refused to act on the removal of the arms embargo to Turkey, a step approved earlier by the Senate. Even the way it was done did not reflect credit on our representatives, many of whom savor an issue that provides an opportunity to upset traditional mores in Congress. The Chairman of the Rules Committee, Rep. Ray J. Madden (D-Ind.), refused to convene his committee to consider granting a rule that would permit floor debate. This happened in the same 94th Congress that, barely six months earlier, had revolted against senior committee chairmen and established customs of the House for their exercise of precisely this kind of legislative conduct.

The general explanation is that everybody is mad at Secretary of State Kissinger, and that probably is right. The Helsinki agreement does not have to be approved by Congress, which is fortunate for the White House and State Department.

Of greater immediate importance, as Congress took off for its summer recess, was the action by the Senate on August 1, rejecting the House/Senate conference report on military procurement for Fiscal 1976. The turndown was unprecedented. The vote was 42 to 48. On July 30, the House approved the bill, 348 to 60.

One reason the Senate vote was so startling is that it followed, by only a few days, the rejection of a resolution that would have prohibited the Defense Department from building expanded naval and air support facilities at Diego Garcia, the British-owned island in the Indian Ocean. The proposed ban was fathered by Sen. Mike Mansfield, the majority leader, and the floor debate, on July 28, was longer than the one devoted to the authorization bill: six hours as contrasted with two and a half. Mr. Mansfield lost, and the Ford Administration won, 43 to 53.

In the Diego Garcia argument, the outcome also was a victory for Sen. John C. Stennis, Chairman of the Armed Services Committee. He suffered a nearly humiliating defeat on the authorization bill. Basically, the conflict was between him and Sen. Edmund Muskie and his new Senate Budget Committee. The latter contended that the bill, which asked for $25.8 billion for weapons and research and development, "will inevitably bust the budget target for defense" approved by Congress in mid-May. The target fixed at that time for all defense spending in Fiscal 1976 was $100.7 billion, and the Armed Services conferees from both houses recommended that about a quarter of that be allocated for procurement. Mr. Muskie argued that if the $25.8 billion were approved, the defense target would be exceeded by $700 million.

The Muskie victory represented a somewhat freakish merger of interests. The traditional foes of defense spending, mostly liberals, many of them in favor of unilateral disarmament, found support from the fiscal conservatives. These are members who are alarmed by the outlook, with good reason, and are determined, with Mr. Muskie, to make sure Congress succeeds in controlling outlays. Urgency is lent to their cause by the fact that the Budget Committee and its related machinery, such as the Congressional Budget Office, are new creations in the 94th Congress. Their sponsors want them to prevail; Mr. Stennis is fully as jealous of the prerogatives of the Armed Services Committee, and he has guided the defense authorization bill through the chamber since the requirement was created in 1961.

On top of this, Capitol Hill observers believe there are votes against the conference bill that can be traced to disenchantment with two projects. This opinion is supported by a substantial part of the floor debate. One item was the inclusion of $60 million to start work on a nuclear powerplant for a new Navy strike cruiser. The request was not in the original Pentagon budget proposal. It was never debated; the Senate never held hearings on the project. The Navy ship program also, in recent weeks, has sailed straight into a hurricane of criticism, the vortex of which spins around controversial Adm. Hyman Rickover. He is a man who arouses strong opinions.

A second project, critical to the Air Force, is the inclusion of $887 million for the Rockwell International B-1 bomber. This is $160.8 million more than originally voted by the Senate before the bill went to conference. It includes authorization for long-lead-time items specifically rejected in the previous Senate floor action, at a cost of $87 million. The House had granted the full request of $108 million for this purpose, but the Senate deleted the funds. The compromise was not acceptable to some members. Leader and spokesman

for the anti-B-1 faction was Sen. Thomas J. McIntyre (D-N. H.). He chairs the R&D Subcommittee of Armed Services and has disagreed with Mr. Stennis from the start on the extent of fiscal support deserved by the B-1.

At the outset of the debate, Mr. Muskie made it clear the authorization bill did not stand alone in his disfavor. There was another conference report, fathered by Sen. George McGovern, that exceeds the budget target by almost $430 million. The money was for the school lunch program. It would be wrong, Mr. Muskie said, to reject one report and not the other. "Are we prepared to say to America's families and their children that we'll break the budget to buy bullets, but we're going to cut back on the budget at the school lunch counter?"

Mr. McGovern asked for, and was given, permission to delay action on his measure.

Mr. Stennis at no point conceded his bill violated budget guidelines. He pointed out that the report under challenge was only one of four measures making up total action on defense appropriations. In addition to one on foreign military assistance and the military construction authorization, there is the major defense appropriations bill. It covers operations and maintenance as well as all the other items not included in the authorization actions.

Only the Appropriations Committee passes on all proposed expenditures. Mr. Stennis was supported on the floor by Chairman John L. McClellan (D-Ark.) of the Appropriations Committee. He argued the Senate would have another chance to cut when his bills are ready for action later this year.

They did not prevail. Four members of the Armed Services Committee did not support Mr. Stennis on the floor. In addition to Mr. McIntyre, they are John C. Culver (D-Iowa), Gary Hart (D-Colo.), and Patrick J. Leahy (D-Vt.). Sen. Barry Goldwater (R-Ariz.) was absent. Also, Sen. Henry Bellmon of Oklahoma, ranking Republican on the Budget Committee, joined Muskie in leading opposition to the bill. Mr. Bellmon, who usually supports defense measures, said "this country must be as prepared economically as it is militarily." Speaking up strongly in support of Mr. Stennis was Sen. Sam Nunn (D-Ga.).

Observers on both sides of the Hill fully understand Mr. Muskie's determination to roll up a record of success in this first year of his Budget Committee chairmanship. There are many, however, who feel his crusade was premature. This is in addition to the fact that an authorization bill is not a spending measure. And, Congress has fixed only a target figure for spending. An actual ceiling will be proposed later by the Budget Committees of both houses and there will be a new chance to vote on the issue then.

There is nothing certain about what will happen next. The House must request another conference and, presumably, the House/Senate conferees will go back to work and try to come up with a new bill. Mr. Stennis, who labored with them more than two months to perfect the rejected report, says they already have done their best. He indicated, near the end of the debate, that they should be discharged. He told the Senate:

"If the majority that votes down this bill will have a conference and select conferees among themselves who will go to conference and maintain the position

of that majority, that is a step I would welcome strongly. . . . I have done all I can. I will welcome having someone else carry the load."

Later, there were indications that the chairman is not prepared to abdicate his position, but that he wants to give the opposition a lesson in the political facts of life. He could seek representation for the dissenters in a new House/Senate effort. Here, the men who rejected his proposal would come face-to-face with their real opposition, a delegation that can point to the vote in their own chamber—348 to 60 in favor of the bill—and challenge the Senate conferees. What can they tell 348 members of the House who want $25.8 billion for military procurement?

What can the cook tell a Frenchman who insists on sauces rich with flour, butter, sugar, and cream? ■

The Wayward Press

The Wayward Press hastens to report that both the Los Angeles *Times* and the Washington *Post* have retracted their lead story of last June 8. It is the one discussed in this space last month, wherein a *Times* reporter wrote from Hong Kong that American warplanes had raided South Vietnam at the time of our evacuation late in April. Both the White House and the Pentagon told the newspapers the story was false before they printed it.

But print it they did. Then it took almost eight weeks for them to agree that their unidentified "authoritative sources" lack credibility. The story "never should have been published," said *Times* editor William F. Thomas. Then, he added in a careless choice of words: "The blame is entirely the *Times'* for publishing what appears to be a misleading story." Misleading? The copy desk should have changed that to "untrue."

Then came Ben C. Bradlee, executive editor of the *Post,* who avoided a confession of editorial irresponsibility by commending the *Times* for its "professionalism in setting the record straight." He did say he regretted having published the story. The record, of course, would have been straight from the start if the yarn had been spiked on the night of June 7. In the newspaper business, which Mr. Thomas and Mr. Bradlee call a profession, there is no penalty for malpractice.

* * *

This is a fit moment to recall that a year ago, on August 15, 1974, the *Post* printed a lengthy and fully false account, alleging that authorities at Charleston AFB, S. C., had buried "thousands of dollars worth" of valuable gear in a dump. In that case the Los Angeles *Times* went along with the *Post's* outrage. So far, there has been no indication that the executive editor of the *Post* intends to set the record straight in the interest of professionalism, or even in the interest of accuracy.

* * *

In the absence of a Watergate scandal during this humid summer in Washington, the press has its "investigative" reporters homing in on the Central Intelligence Agency. One man who has suffered as a result of this intensive and sometimes careless effort is Alexander Butterfield, a former USAF colonel who served in the White House under President Nixon and was the witness who disclosed that the White House tapes were made in the first place.

Mr. Butterfield has been looking for a job this summer, but was handicapped by a couple of major television networks and a retired Air Force colonel, one Fletcher Prouty. On July 11, Mr. Prouty appeared on both the CBS *Morning News* and the NBC *Today* show to report that Mr. Butterfield had an affiliation of some sort with CIA while he worked at the White House. It never was clear what he did for CIA, if he did anything, but the television guest made the headlines with ease. The only authority he could give was E. Howard Hunt, who was a CIA man before he was publicly discredited and started serving a term in jail.

Both networks said they tried to locate Mr. Butterfield before they permitted Colonel Prouty to air his loose accusations, but were not successful. The story was knocked around in the press and on the tube for several days. By the end of the week, the victim had been located, and he appeared on *60 Minutes,* a sort of news-vaudeville show put on by CBS on Sunday evenings. The Butterfield response: Not a shred of truth. He never was a designated CIA contact man. He never dealt with CIA in any way.

One of the interesting incidents in this sequence took place at the outset, on the ABC *Evening News* broadcast of July 9. The transcripts of that show include these paragraphs, reproduced here in the interest of accuracy:

REP. ROBERT KASTEN: There's evidence that [the staff of the House committee probing CIA] has developed . . . that there is at least a reasonable chance that a number of executive agencies, including the White House, may have been infiltrated, or may be infiltrated, by the CIA.

SAM DONALDSON: Are you just speculating, or does your staff have hard evidence?

KASTEN: The evidence is that there were or are CIA agents in certain departments of the executive branch of our government. The evidence, I believe, is hard.

DONALDSON: Meanwhile, another member of the present CIA committee, Ronald Dellums, told reporters the committee staff has evidence that the CIA infiltrated the news media. Dellums cited as a specific example the case of a former vice president of CBS. He did not give a name. It should be emphasized that what we are reporting here are public statements by members of Congress. ABC News has seen no evidence to substantiate these statements. Sam Donaldson, ABC News, Capitol Hill.

HARRY REASONER: When asked about the Dellums statement, a spokesman at CBS said, it's news to us. We know of no such vice president.

There are a couple of possibilities here. One is that ABC is setting a new ethical standard for television news broadcasting. When it has no evidence to substantiate statements by possibly irresponsible persons, it will say so, and give the accused party, in this case CBS, a chance to be heard. If CBS and NBC had used the same professional technique forty-eight hours later, Alexander Butterfield would have been spared much distress.

The other possibility, and the more likely one, is that TV newsmen, like their peers who work with the printed word, exercise a double standard. After all, a CBS vice president is a Very Important Person, unlike a former Air Force colonel, and deserves courtesies denied other citizens.

After the affair was all over, we heard it discussed by Martin Agronsky and some guests on his *Evening Edition,* on the Public Broadcasting Service. Mr. Agronsky, who probably is representative of his craft, dismissed the matter with éclat. Alexander Butterfield, he said, was the "accidental victim" of "investigative" reporting. Professionalism was not mentioned, nor was malpractice.

SCIENCE/SCOPE

The first U.S.-built experimental rocket launcher designed to withstand the buffeting and G forces of supersonic flight has been delivered to the U.S. Air Force by Hughes and will be ground-tested at Eglin AFB. The launcher will house 18 folding-fin, 2.75-inch-diameter aircraft rockets. It is lighter than European-designed launchers, thanks to extensive use of heat-and-pressure-cured epoxy fiberglass composites, yet will carry nearly 100 pounds more payload.

The Orbiting Solar Observatory launched in June is giving solar physicists their best opportunity yet to study the complex region between the sun's surface and its corona, where temperatures soar from 10,000 to more than 3,000,000°F. Designated OSO-8, the 2400-lb. spacecraft was built by Hughes for NASA's Goddard Space Flight Center. Its stored command processor and small experiment computer enable it to handle complex observation instructions. Its two sun-pointed telescopes, which have a pointing stability of 1/3600°, will scan the sun's surface in 450-mile swaths.

OSO-8's instruments will also search the Milky Way for celestial sources of X-rays and observe X-ray binaries, which seem to consist of a visible star and a small invisible companion -- possibly a "black hole".

The promise of electric propulsion for interplanetary travel moved a step closer with the recent completion of a record-setting endurance test on an ion engine by Hughes Research Laboratories scientists. The 30-cm mercury electron bombardment ion thruster module, built for NASA's Lewis Research Center, was operated for 10,000 hours in a space-simulation chamber to demonstrate the lifetime capability of the thruster and its critical components. Ion engines are being considered for spacecraft and for station-keeping and stabilizing functions for satellites.

Ion engine technology has already produced spinoffs including a high-voltage DC circuit breaker developed by Hughes for use in electric power transmission systems, as well as advanced ion implantation and ion sputtering techniques used in microfabrication processes.

Sensitive instruments arrive damage-free when shipped in reusable Hughes ISOPOD™ containers. An ISOPOD container is a rugged aluminum or polyethylene box with a floating inner framework separated from the box by heavy wire coils, and a breather valve to control inside pressure. Adjustable vinyl-padded shelves with slots for nylon strap assemblies are attached to the inner frame. Fragile equipment of any size or shape can be secured with a simple cinch of the strap.

ISOPOD containers protect their contents from the roughest handling and the most severe shock and vibration encountered on trucks, ships, and aircraft. They are available in a wide range of sizes and their reusability has saved at least a million dollars on two Hughes programs alone.

Think of us as the transponder supermarket.

Available now. Multimission transponders to meet an almost endless variety of critical space requirements. Basic, proven hardware you can tailor to match your exact mission requirements by using simple, functional, interchangeable modules. And no worry about cost overruns, unexpected design problems or stretched out deliveries.

It sounds too good to be true, but read on...

Design engineers took on a big job at Motorola when they set out to meet the following criteria:

1. Design and qualify for planetary and earth-orbit missions.
2. Design to cut flight-unit non-recurring cost to an absolute minimum.
3. Design to allow for maximum mission flexibility using modular options.
4. Design, and complete documentation to achieve maximum manufacturing cost-effectiveness.

The development of the M-Series multimission transponder marked the successful completion of this engineering effort.

We have already delivered an engineering model for an international broadcast satellite program. And the finishing touches are now being put on the qualification model. The diversity of other M-Series contracts presently being worked demonstrate the flexibility of the unit.

They include transponders for: (1) The International Sun Earth Explorer (ISEE) satellite which will study the magnetic field between here and the sun; (2) The Mariner Jupiter Saturn (MJS) '77 transponder for JPL's mission requiring four years successful operation in deep space; (3) The Venus Pioneer spacecraft designed for planetary orbit and atmosphere sampling.

Every one of these M-Series transponders uses the same basic hardware design with interchangeable modules to assure each spacecraft prime contractor that he has precisely what he specified for his particular mission. No reason to pay for functions you don't want or to settle for less than you need.

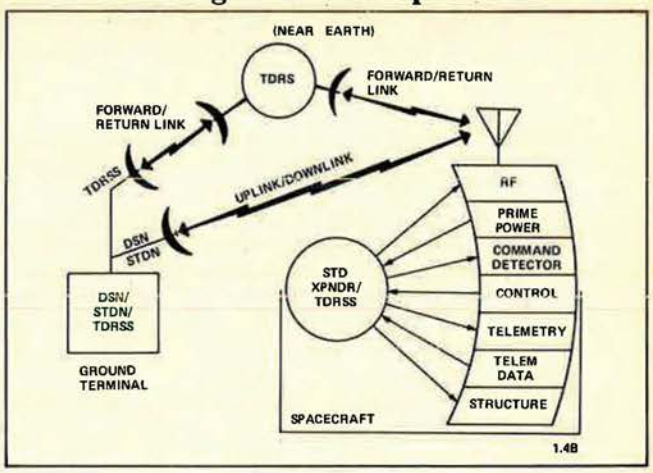
Expandable

The basic multimission transponder configuration is STDN and DSN compatible. Expanding this basic configuration to encompass frequency hopping and spread spectrum for TDRS requirements, or to adapt it for use at SGLS ratios and for receiving suppressed-carrier signals, is easy.

Advanced engineering benefits

- Highly stable ranging delay lets you make more accurate range calculations.
- Wideband command link permits a number of command data channels to be processed simultaneously, thus providing quicker update aboard the spacecraft.
- Designed to be corona-free without pressurization eliminates leakage and storage problems.
- Engineered for today and tomorrow with PRN and tone ranging already built in and carrier-coherent or non-coherent doppler tracking upon command.

Functional Interfaces with Tracking Station and Spacecraft.



Evolution not revolution.

The M-Series is the result of a steady evolutionary advancement in the state-of-the-art as applied to space transponder requirements. These new multimission transponder designs have grown from a family tree dating back to the first days of the U.S. space program. Since then Motorola has built more flight-proven space transponders than everyone else in the business. And technological leadership, know-how, and equipment reliability stem from experience.

We know that the M-Series of transponders is not going to be the ultimate in standard space transponders. As a matter of fact, we are working hard to see that it isn't. Our engineering team is presently working with advanced approaches to gain even higher reliability and reduce package size from today's small 300 cubic inches to less than 200 cubic inches.

All around the country we have listened closely to a wide range of mission requirements, budget constraints, interface problems, and a raft of other technical parameters. And you've convinced us we're on the right track. The identical concept, the same basic design, and circuitry we've carefully initiated and thoroughly tested for the M-Series, is the way to go. Now we're extending our surface acoustic wave technology used in the present M-Series. We're also applying new beam lead devices and developing advanced custom ICs that will soon define the state-of-the-art in standard space transponders. How soon is soon? Present estimates indicate flight qualification early in January of 1977.

In the meantime the closest thing to a standard transponder these days is the M-Series multimission transponder. And it's available now.

Write for our new tell-it-like-it-is publication "How to approach Transponder Standardization." It has up-to-date case histories including photographs, specifications and a host of facts for your fancy.

Motorola Government Electronics Division, Mail Drop 3240, P. O. Box 1417, Scottsdale, AZ 85252, or call (602) 949-3192.

MOTOROLA

The mind to imagine . . . the skill to do

AIR FORCE PLANE-
FOOT SOLDIERS' FRIEND

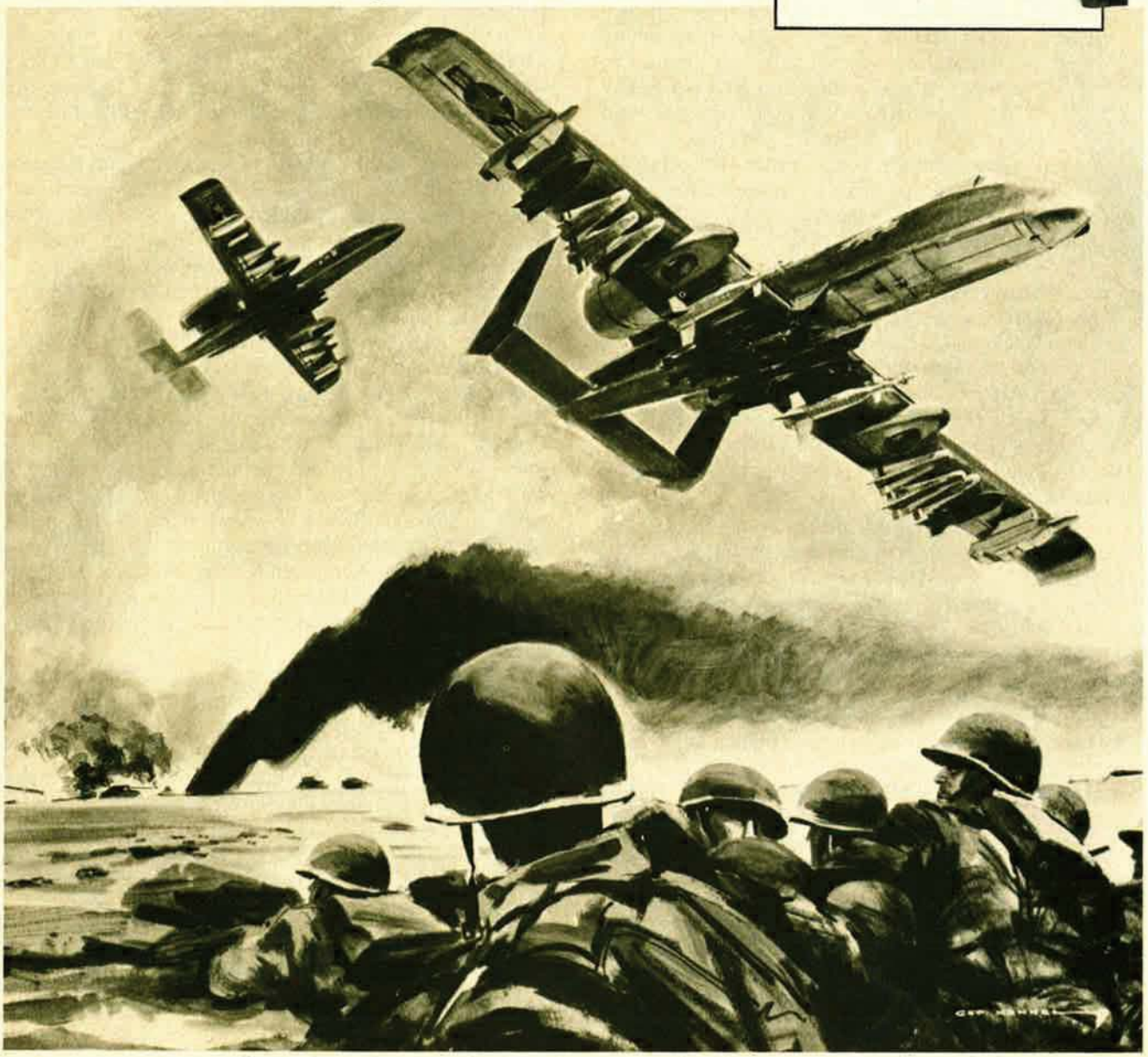
When a battalion commander calls for supporting air strikes, he wants help that will get there fast, get in close enough with weapons that are effective and stay in the area long enough to do the job.

That's what the A-10 is all about. Capable of operating from short forward airstrips, the A-10 is immediately responsive—with a wide mix of weapons to destroy enemy armor and anti-aircraft defenses from long clear-day, stand-off ranges or down in the thick of battle under enveloping cloud cover. With its inherent survivability, the A-10 can get in close enough to visually identify targets, distinguish friend from foe, and strike with pinpoint accuracy. With its unequalled staying power, the A-10 can remain near the action ready to re-attack. It can make 11 tank-killing attacks with the GAU-8 30mm cannon alone.

To the foot soldier under fire, the A-10 is a comforting sight because it's a life-saver. In fact, the closer it gets —the better it looks.

FAIRCHILD
INDUSTRIES

A-10



Aerospace World

News, Views & Comments

By William P. Schlitz
ASSISTANT MANAGING EDITOR, AIR FORCE MAGAZINE

Washington, D. C., August 11

Roll-out ceremonies for the YC-15 Advanced Medium Short Takeoff and Landing Transport, or AMST, took place at the McDonnell Douglas Corp. Douglas Aircraft Co. Division facility at Long Beach, Calif., in early August.

Air Force Secretary John L. McLucas was principal speaker at the unveiling of the US's first advanced STOL transport prototype, expected to make its first flight by early fall.

Boeing Co., competing with McDonnell Douglas in the AMST program, is currently building its entry, the YC-14, in Seattle, Wash.

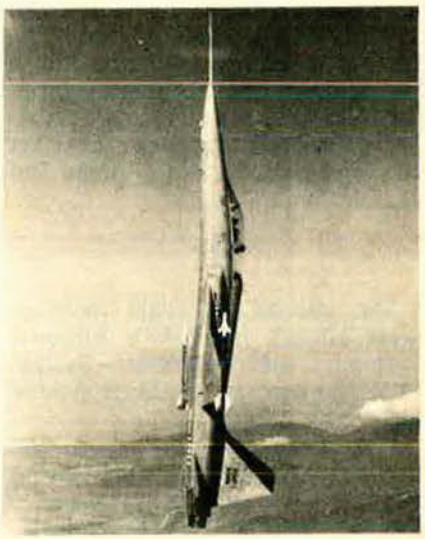
The AMST objective, according to USAF, "is to develop the technology for a transport to haul larger and heavier payloads at jet speeds and operate from shorter fields, thus expanding the combat support capabilities" of USAF's medium transport force.

The four-engine YC-15 has a high wing and T-tail and, powered by its 16,000-pound-thrust Pratt & Whitney JT8D-17 fanjets, will cruise at about 500 mph. One YC-15 feature is a system by which wing flaps are lowered directly into engine exhaust, boosting aerodynamic lift and producing powered lift.

☆

Liquid hydrogen as a substitute for petroleum-based aviation fuels? Some engineers seem to think so. They claim that aircraft using liquefied hydrogen fuel could be lighter, quieter, equipped with smaller engines, require shorter runways, cut pollution, and expend less energy.

At a recent symposium held in Tokyo to consider the question, hydrogen was termed "the outstanding candidate" to replace increasingly costly petroleum fuels, which in the future may also be in increasingly shorter supply.



Climbing straight up is Northrop's new F-5F fighter-trainer, two-place version of the F-5E Tiger II International Fighter. Two F-5Fs have been built under a USAF full-scale development contract and are in the final stages of a comprehensive flight-test program. They have logged some 400 flights between them.

Roll-out of the new prototype YC-15 Advanced Medium STOL transport took place at Long Beach, Calif., in August. A feature of the plane is that jet exhaust from its four engines is blown directly back over large flaps to provide extra lift during takeoff and landing.

Hydrogen can be produced by a variety of processes from water—a basic worldwide source. Furthermore, engineers say, hydrogen could replace fossil-based fuels in many other uses and at a minimum effect on the environment.

Allowing for a normal ten-year development cycle, hydrogen-fueled aircraft could be flying by 1986, says G. Daniel Brewer, a senior Lockheed-California R&D engineer who attended the Tokyo symposium.

Despite drawbacks, such as the current high costs of deriving the hydrogen gas from water and reducing it to a liquid state, hydrogen has "a very attractive potential," Mr. Brewer believes.

Lockheed studies, begun in 1972, indicate that powering aircraft with high-energy hydrogen instead of comparatively low-energy petroleum fuels could reduce overall weight from one-third to one-half. An additional plus is that hydrogen

Aerospace World

presents a lesser hazard than conventional jet fuels.

NASA is interested in the hydrogen fuel concept. In 1974, its Langley Research Center gave Lockheed a go-ahead to assess feasibility, identify problems, and formulate a development plan for the design of both subsonic and supersonic transports. Another research contract was awarded by NASA Ames Research Center in 1975.

☆

The second full-scale development aircraft in USAF's Airborne Warning and Control System (AWACS) program made its maiden flight late in July.

The plane flew the short hop from Renton, Wash., to Boeing Field, Seattle, where its extensive avionics gear will be installed. By October 1975, it should be ready for a test program before going into the operational inventory.

The first aircraft ticketed for an AWACS role flew in February 1975 and is currently undergoing ground testing in preparation for flight loads and airworthiness tests. Once the aerodynamic test-phase is complete, it, too, will be equipped with AWACS avionics.

The program's third aircraft is scheduled to fly early next year.

☆

With the conclusion of the Apollo-Soyuz mission in July, the US manned space program has begun a hiatus that will remain uninterrupted until the first Space Shuttle missions some five years distant. For the time being, astronaut recruitment has ceased.

Meanwhile, the Soviet manned space effort (and for that matter the entire space program) seems at flood tide. Even while Apollo and Soyuz were making headlines, the Russians had two cosmonauts aboard spacelab Salyut-4 and brought them down safely after nine weeks in orbit, a new record for the Soviets (the US still holds the world mark—the eighty-four-day span set by the Skylab-3 crew).

In July, the USSR also orbited Cosmos-750, believed to be a military monitoring mission vehicle; Cosmos-751, a reconnaissance/surveillance satellite; and a new type of Cosmos spacecraft believed to be on a special monitoring mission.

The Soviets have launched more than fifty space missions thus far in 1975, with a ratio of sixty to forty percent in favor of military missions.

Also in July, the Soviet Union initiated a new series of weather satellites with the successful launch of Meteor-2.

During negotiations last year, the USSR suggested a second Apollo-Soyuz mission, in 1976, but this was turned down because of cost and anticipated opposition from the Congress.

The Soviets are aware of the worldwide prestige emanating from their space program and hinted at advanced notice of future manned flights, a first for them with the joint Apollo-Soyuz mission.

Index to Advertisers

A PQM-102, the first full-size, supersonic drone, takes off unmanned on a recent test flight. USAF plans to convert 127 F-102s to drones. See below.

In another air defense matter, the first unmanned F-102 Delta Dagger target drone was recently turned over to ADCOM's Air Defense Weapons Center, Tyndall AFB, Fla., to operate over the Gulf of Mexico weapons range in the evaluation of air-to-air missile systems under realistic conditions, ADCOM said.

The Delta Dagger, a front-line fighter/interceptor for almost two decades, is the first full-size supersonic drone in USAF's inventory *(also see August issue, p. 48)*. AFSC's Armament Development and Test Center, Eglin AFB, Fla., is responsible for the conversion of the F-102 drone—now known as the PQM-102—during a three-year program. Current plans call for the reconfiguration of 127 F-102s as drones.

Utilizing advanced proximity scoring techniques, missiles fired at the drone need not hit it to be scored, and, if not actually destroyed by a direct hit, the PQM-102s can be recovered and reused, technicians said.

The PQM-102 earned high marks as a target vehicle during a series of flight tests and firings at Holloman AFB, N. M., during the program's developmental phase.

☆

USAF is pushing its advanced program to develop a Digital Avionics Information System (DAIS) that will revolutionize cockpit avionics and comprehensively upgrade aircraft performance (*also see July '75 issue, p. 59*).

Crux of the DAIS program is to "reduce the weight, cost, and complexity of electronics on an aircraft by developing equipment that will perform functions common to several systems, *e.g.*, communications, navigation, and flight control," USAF said.

At present, in the case of aircraft electronics systems or "black boxes," each does pretty much its own thing, such as sensing, computation, control, and display. Each system operates more or less independently. Thus, if additional sensor capability is added to an aircraft, the plane must be rewired—at a cost several times that of the installed sensor itself.

DAIS, on the other hand, "will organize aircraft electronics around common computer modules that will handle all the various sensor information, make computations, and display the appropriate information to the crew at appropriate times," technicians said.

This data will be carried by a multiplex "bus," whereby a single communications link is shared by more than one terminal, thus eliminating the need for large bundles of wire.

DAIS will also make possible quick changeovers in weapons delivery sensors; for example, the plug-in of infrared to replace TV for night operations.

USAF has picked three firms to supply DAIS equipment: Westinghouse for off-the-shelf computers requiring no R&D; IBM for experimental, developmental, and service test models of a multiplex subsystem; and Intermetrics, Inc., Cambridge, Mass., for software coding.

☆

USAF's Flight Test Center, Edwards AFB, Calif., has been the recent test site for the new stereovision aerial refueling control system.

Basically, the system is designed to remotely control refueling operations via television. Installed aboard a conventional KC-135, a 3-D TV console allows an operator seated at it to observe aircraft boom and receiver and position the boom via remote controls. (This in contrast to the standard practice of the boom operator lying face down on an inclined pallet watching the boom and receiver aircraft directly through a window.)

As in 3-D of motion-picture fame, the monitoring operator must wear special glasses. McDonnell Douglas Corp.'s Douglas Aircraft Co. Division designed the test hardware.

What makes the project of special interest to USAF is the feasibility of controlling boom operations from the cockpit as well as the potential reduction of a tanker crew slot, a significant saving. The new refueling boom control system is also part of the planning for the Air Force's Advanced Tanker/Cargo Aircraft (ATCA), under study.

☆

The Continental Air Defense Command (CONAD) was inactivated late in June, its responsibilities being assumed by the Aerospace Defense Command. (CONAD was created in 1954 to organize all US military air defense activities under one command; its deactivation is part of the streamlining effort being undertaken throughout DoD.)

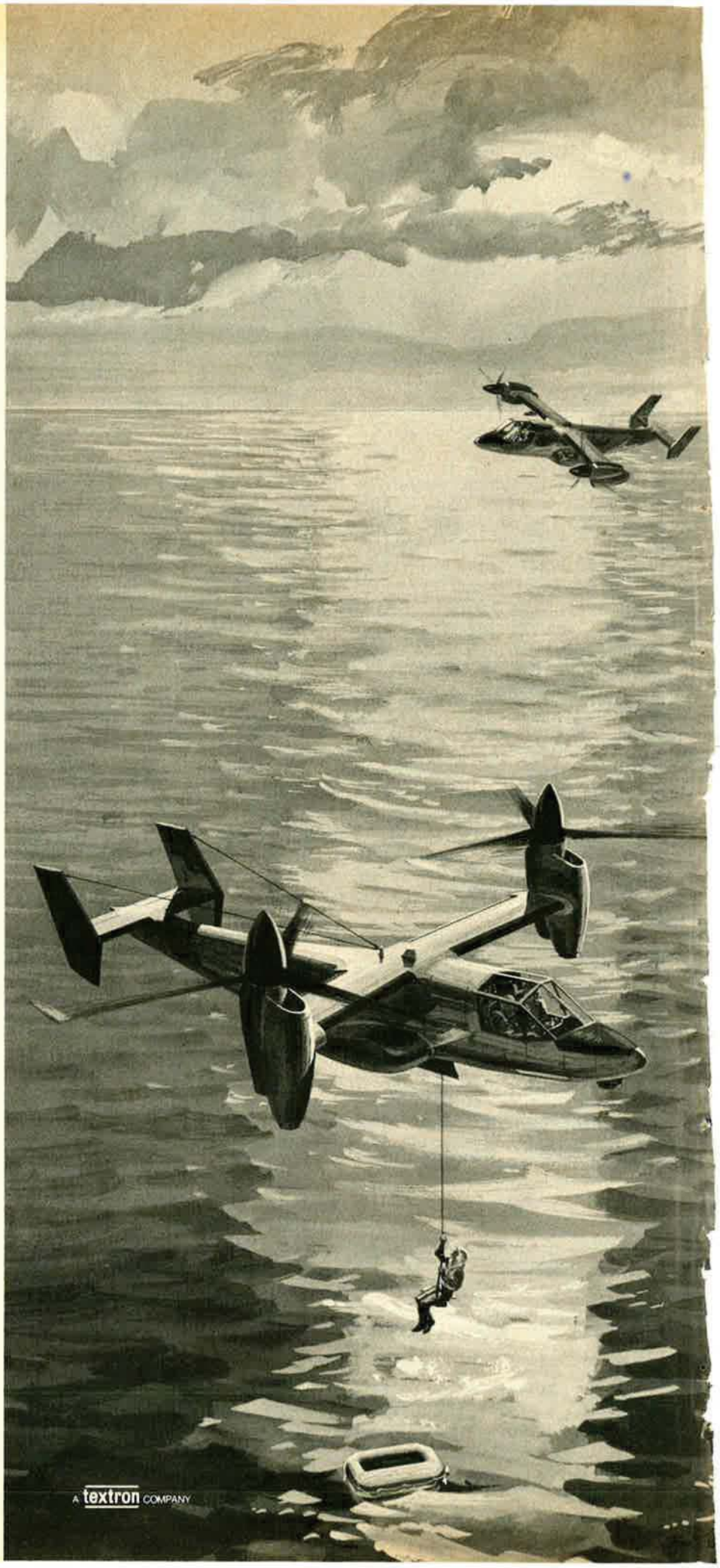
For its part, ADC has also been designated a Specified Command and as such will report to the Joint Chiefs of Staff on all operational matters, officials said. Now known as "ADCOM," it is only the second Specified Command within DoD; the other is SAC.

ADCOM's role is that of single manager of US air defenses and aerospace surveillance forces, to include warning and defense of CONUS and Alaska against aerospace attack as well as surveillance and control of CONUS airspace.

☆

By next summer, a new computer operation should give a big boost to Air Force recruiting techniques.

Designed in a joint effort by Air



Force Recruiting Service and the Air Force Military Personnel Center, the new process will match applicants' qualifications with available Air Force jobs.

The new service—officially called the Advanced Personnel Data System–Procurement Management Information System (APDS-PROMIS)—will require data links at each of the sixty-six Armed Forces Examining and Entrance Stations (AFEES) throughout the US. These terminals will be tied to the system's computer at Randolph AFB, Tex.

APDS-PROMIS will allow recruiters to feed such factors as age, education, aptitude, and skill preferences into a computer "job bank" and within seconds receive a list of Air Force jobs best matching qualifications.

Among the various enlistment categories, Recruiting Service said, an applicant who accepts a job will have it immediately reserved for him in the system, and a computer-generated job description called an "opportunity card" will be printed for him whether he chooses the delayed enlistment program or Regular Air Force. Among other things, the card will describe the work the applicant will be doing and perhaps even the technical training school to be attended and class duration time.

Recruiters will also be able to match waiting applicants to jobs as the jobs become available.

☆

As part of on-going research, NASA is taking a hard look at the efficiency of the reciprocating engines used by general aviation. Anticipated goals: reduced fuel consumption, pollutant emissions, and noise.

One newly initiated program is involved with hydrogen-injection technology that could ultimately bring a decrease in fuel consumption of "at least twenty to twenty-five percent," officials said.

In league with industry and the FAA, the space agency is also studying major and minor modification of engines now in use to decrease engine exhaust. (The special safety factors and operating environment of air-cooled piston engines rule out most of the emission-lessening techniques developed recently for automobile engines.)

Wherever this broad research leads, the basic problem is that, to be practical, the end product must

Aerospace World

meet the price and production needs of the commercial marketplace, officials stressed. No small obstacle.

☆

Underlining the nation's energy difficulties is USAF's increasing use of simulators for flight training (*see p. 38 for Air Force Chief of Staff Gen. David C. Jones's remarks on this and other matters).*

Now, a single focal point for the management of aircrew flight simulators has been set up by Air Force Systems Command. At Wright-Patterson AFB, Ohio, and under the Aeronautical Systems Division, is the recently created Aircrew Flight Simulator Division. (Also pointing up the trend to simulators is that there now is a special assistant for simulators at Hq. USAF.)

"Tasks assigned to the division include technology efforts and weapon systems of all AFSC simulator activities, existing and under development, as well as the implementation of programs for development and procurement of simulators for aircraft transferred to the Air Force Logistics Command," AFSC said.

In a related matter, AFSC is developing a mobile Radar Proficiency Simulator that will help sharpen USAF air traffic controller skills.

Plugged into an on-site radar system, the simulator can register on an Air Traffic Control Radar Indicator a scenario containing up to forty aircraft, including associated weather, ground clutter, and communications. The plane images range from heavy bombers to light trainers, at outward distances of 200 nautical miles and altitudes to 30,000 feet.

USAF has contracted Hydrosystems, Inc., of Farmingdale, N. Y., for two preproduction simulators for test and evaluation, with an option for ninety-one units later on.

☆

NEWS NOTES—The 550th—and last—of the planned **Minuteman III** force has been emplaced and checked out at **Malmstrom AFB, Mont.** With the total Minuteman force at 1,000, a subsequent Silo Upgrading Program is set to begin in 1976.

Dr. Bruce C. Murray, planetary scientist and authority on Mars, Mercury, and Venus, was named **Director of California Institute of Technology's Jet Propulsion Lab,** succeeding retiring **Dr. William H. Pickering,** the lab's head for twenty-one years.

Lt. Col. Gaylord W. Clark, Director of Command Control, ADCOM's Fourteenth Aerospace Force Hq., recently was presented the coveted **Master of Space Defense Award.** He joins an elite group.

In another in its series of programs to show the feasibility of high-power **lasers for spacecraft propulsion,** NASA has contracted **Rockwell's Rocketdyne Division** to design a laser-heated rocket thrust chamber that would convert laser energy into propulsive thrust.

Donald P. Hearth, Deputy Director of NASA's Goddard Space Flight Center, Greenbelt, Md., has been named **Director of Langley Research Center,** Hampton, Va., replacing **Dr. Edgar M. Cortright.**

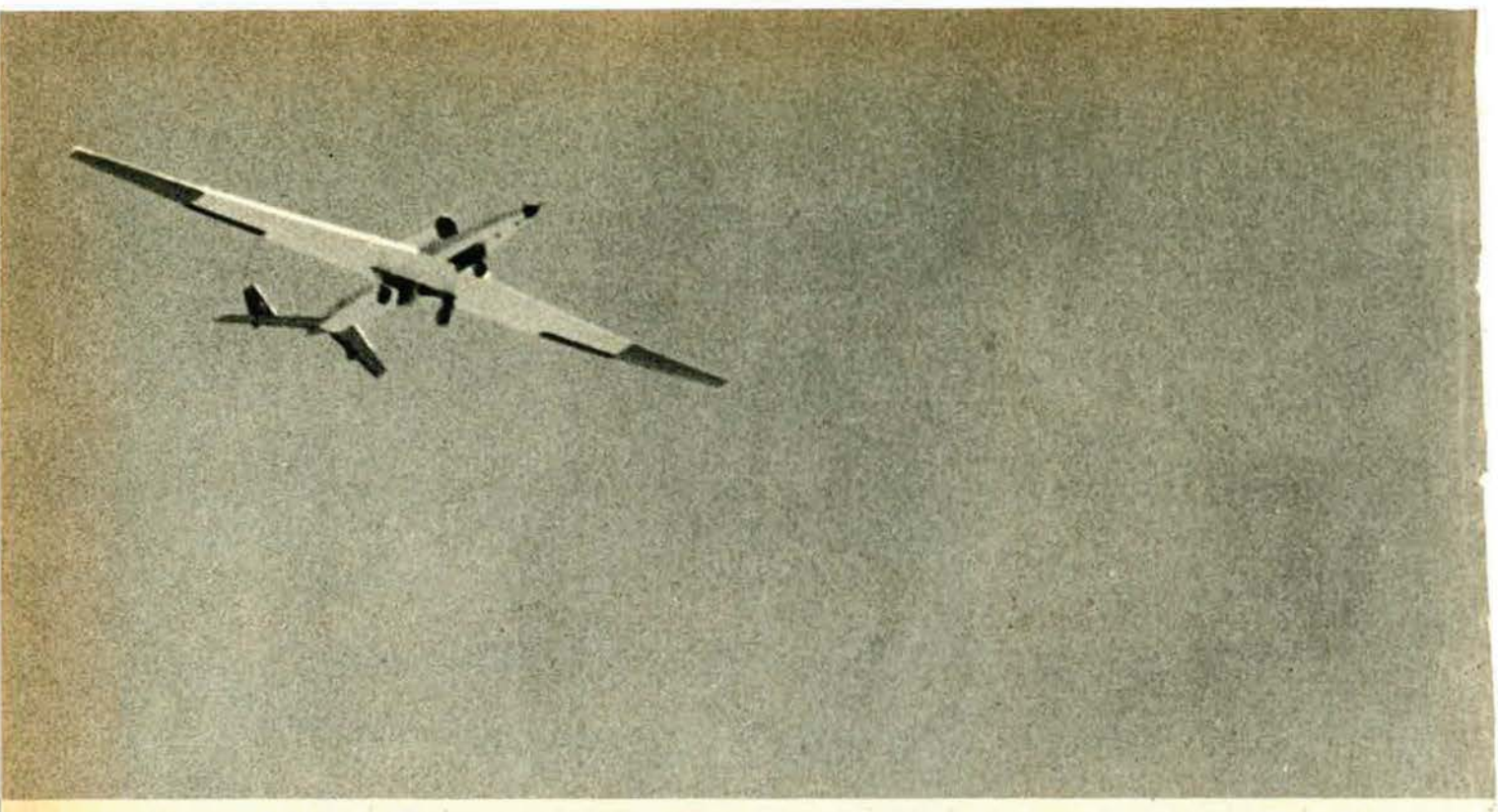
In early July, **President Ford** broke ground for the first building —a classroom/lab facility—of the new **Uniformed Services University of the Health Sciences,** near the National Naval Medical Center, Bethesda, Md. The first class enters in fall of 1976; University construction will take at least six years.

Brig. Gen. Joseph K. Bratton, USA, has been named **Director of Military Application,** Energy Research and Development Administration (ERDA). He'll be in charge of nuclear weapons R&D, and of transport, storage, and readiness of nuclear weapons. He'll also provide ERDA/DoD liaison.

Wright-Patterson's **17th Bomb Wing,** a unit that dates back to the historic **Doolittle raid** on Tokyo, will be deactivated as of September 30. The unit designation will be transferred to the **456th Bomb Wing,** Beale AFB, Calif., with the 456th designation to be retired October 1. All of the 17th's B-52s and KC-135s have been reassigned.

The **National War College** and the **Industrial College of the Armed Forces,** both at Fort McNair, Washington, D. C., have been consolidated and renamed the **University of National Defense,** with **Vice Adm. Marmaduke G. Bayne,** USN, as President.

The **Spruce Goose,** Howard Hughes's giant seaplane slated to be dismantled and sections donated to various aerospace museums, won a **reprieve** when its Long Beach, Calif., hangar lease was extended one year. ■



The flights of Compass Cope 'R'

June 1972 Contract signed for engineering design, development and fabrication of two flight test prototype Compass Cope 'R' Remotely Piloted Vehicles.

January 1974 Formal rollout and presentation to the U.S. Air Force of twin prototype YQM-98A aircraft — simultaneously, on time, on budget.

April 1974 Prototypes deployed to Edwards AFB by C-5A transport.
Preparation of Compass Cope 'R' aircraft for developmental flight testing. Teledyne Ryan ground support team to Edwards for duration of flight test program.

August 1974 Maiden flight of Compass Cope 'R,' Model Two, completing 110 minutes at medium altitudes and cruise speed.

Sept.–Oct. 1974 Second flight, spanning 5 hours, 8 minutes, exercises all on-board systems and redundancies. Followed by third and fourth flights totaling 5 hours, 31 minutes, at altitudes of more than 47,000 feet.

November 1974 Unofficial world's flight endurance record of more than 24 hours of unrefueled operations at altitudes of more than 55,000 feet during fifth flight of Compass Cope 'R.'

February 1975 Twin Compass Cope 'R' prototype RPVs loaded aboard Air Force C-5A transport and deployed to Cape Canaveral Air Force Station for resumption of flight testing.

May 1975 Sixth flight—first from Cape Canaveral—with FAA approval and coordination.
First fully automatic "hands off" TALAR landing demonstrated in seventh flight.

July 1975 Teledyne Ryan's Compass Cope 'R' twin, or Model One, makes 2-hour, 33-minute, maiden flight. Adds more than 7 hours in two subsequent flights.

August 1975 Model One flies again at altitudes above 55,000 feet and makes another fully automatic landing. Mission marks completion of 11 flights totaling 61 hours, 8 minutes, including three fully automatic landings. And they're still flying!

The successful flights of U.S. Air Force YQM-98A aircraft mark another significant milestone in America's long history of aerospace achievement. Compass Cope 'R's performance, above and beyond all previous records for endurance at altitude, demonstrates Teledyne Ryan's special "can-do" capabilities in the field of unmanned flight. And Compass Cope 'R' points up the potential for service to the nation of the Teledyne Ryan "first family of RPVs." No matter what the mission.

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AFA: HELPING THE PUBLIC UNDERSTAND DEFENSE ISSUES

BY THE HON. JOHN L. McLUCAS
SECRETARY OF THE AIR FORCE

For almost three decades, the Air Force Association has played an important part in helping our citizens visualize and understand major defense and airpower issues. That role is even more important today.

As the United States begins its Bicentennial celebrations, it is a time both to reflect on our great heritage and to look forward to what will be required to maintain and strengthen that heritage as we begin America's third century.

During this Bicentennial period, we also are witnessing a number of momentous political, technological, and strategic events. The awesome pace and scope of these events highlight the need for the American people to come to a greater understanding of the forces at work in the world today.

We have entered a period of relaxed tensions with the Soviet Union, which we call détente. This period is characterized by the 1972 Strategic Arms Limitations Agreements, the Vladivostok understandings, and the on-going SALT negotiations that seek to achieve more permanent agreements. Détente also is accompanied by the fact that the Soviets have under way the most massive strategic armaments program the world has yet seen: four new ICBMs, new SLBMs, and the Backfire bomber—all in various stages of deployment or development.

Concerned citizens want to understand how these weapons programs relate to the SALT agreements and the relative balance of power. Are these Soviet initiatives adequately offset by the Minuteman III improvements and the B-1? What about the future of the manned bomber? How can we assure ourselves that the strategic balance necessary for stability in the world is maintained? What should be the relationship between important strategic development programs and the need for modernization of our tactical forces?

Broad strategic issues such as these cannot be isolated from the events unfolding now in NATO and in other parts of the world, such as Korea and the Middle East. Many Americans still seek to unravel and understand events in Southeast Asia and to understand better our proper role in the defense and support of other nations.

What should our military posture be to carry out our objectives? What kind of equipment is required? What new strategies and tactics will advances in technology permit? For example, developments in avionics, remotely piloted vehicles, and electronic countermeasures could change vastly our ideas about air warfare. The full implications of technological advances in satellite systems, including the AFSATCOM system and the NAVSTAR global positioning system, need to be explored.

Overshadowing much of this is the basic concern about how to pay for our military capabilities in an era of higher costs and limited dollars. Terms such as "Design to Cost" and "Life-Cycle Costing" are heard more and more within the Air Force. Even though we have led the way within DoD in acquisition management innovation and progress, we must renew our efforts. We are exploring other approaches to getting the right military capabilities at a reasonable price.

The F-16 is being "designed to cost," will be produced both here and in Europe, and will enter both our own and our European allies' forces. This multinational approach will help to keep unit costs down as well as provide the added benefit of enhancing "standardization" within NATO.

Keeping abreast of the important strategic, political, and technological issues that impact on national defense is becoming increasingly difficult for Air Force people, and even more so for the general public.

Through AIR FORCE Magazine, programs such as symposia and reports of many kinds, and the dedicated grass-roots efforts of local Chapters around the country, the Air Force Association has made significant contributions to the understanding of Air Force achievements and critical defense issues. As the volume and complexity of those issues grow, I am confident that the Air Force Association will continue to meet the challenge of helping the American people reach the decisions necessary for national security. ■

AFA: ANOTHER YEAR OF DEDICATED SERVICE

BY GEN. DAVID C. JONES, USAF
CHIEF OF STAFF, UNITED STATES AIR FORCE

With preparations for the Bicentennial focusing increasing attention on our heritage and accomplishments as a people, I am reminded of an insightful comment by Baron von Steuben at Valley Forge in the winter of 1778. Writing to a colleague in Prussia about his responsibility for training the Revolutionary Army, he observed, "In the first place, the genius of this nation is not in the least to be compared with that of the Prussians, Austrians, or French. You say to your men, 'Do this,' and they doeth it; but I am obliged to say, 'This is the reason why you ought to do that,' and then they doeth it."

Based on his experience with the improvised American militia, von Steuben's observation was not of a professional military force (which the militia was not) but rather of an enduring and fundamental characteristic of the American people. Today, the need to inform the public—to articulate accurately and responsibly not only "what" but "why"—remains an enduring thread of the American system, woven inextricably into our national fiber for nearly two centuries.

For years this critical need has been served exceedingly well by the responsible and concerned efforts of the Air Force Association and AIR FORCE Magazine. Last year, I welcomed the opportunity this issue provided to recognize such a vital contribution; and I am pleased to recognize them again for another year of dedicated service to both the Air Force and the nation.

This contribution to the development of a more informed and enlightened public is particularly critical during periods of stress and divisive pressures, which our nation has experienced in recent years. I think it is a mark of the resilience and strength of the American people and their institutions that the United States has stood these tests exceptionally well, and I believe that we are emerging from our trials with a renewed sense of purpose and a greater degree of consensus and cooperation. Certainly we have all of the ingredients—the know-how, the resources, and the technology—to deal with the challenges that face us. All we need is the vision and a renewed sense of common purpose—qualities that have characterized our national heritage.

Although the past year has been one of difficulties and testing, it has also been one of significant progress in many areas. I believe the nation is on the upswing, and my travels throughout the country have provided reassuring confirmation. While we pursue and hope for continued progress in our relations with the Soviet Union, I sense both a rising concern over increasing Soviet military strength and a greater resolve that the United States must maintain an effective balance to that strength. Congressional support for the major elements of the 1976 defense budget has so far reflected a reassuring appreciation of these issues, and certainly stands in contrast with the dire predictions made by many as recently as six months ago.

Within the Air Force, we have continued to improve the quality and capability of the force while tightening our belts wherever possible. Our major weapons systems are progressing well, and the capability of our equipment will improve significantly as the Air Force gradually modernizes with these new systems. The quality and professionalism of our people also continue to improve, and I am greatly reassured by the caliber of the young men and women entering today's Air Force. They not only test well, but, more importantly, are highly motivated, eager to work, and looking for challenge. I believe that the United States Air Force remains the best in the world, and we are determined to make it even better.

Our future success, of course, will rely upon the continuing contributions of the total Air Force—military and civilian, Guard and Reserve, active and retired, friends and supporters. With a membership and readership that includes the entire spectrum of the Air Force "family," the Air Force Association and AIR FORCE Magazine provide unique and vital forums for participation and communication. I salute them for another year of dedicated and responsible service. ■

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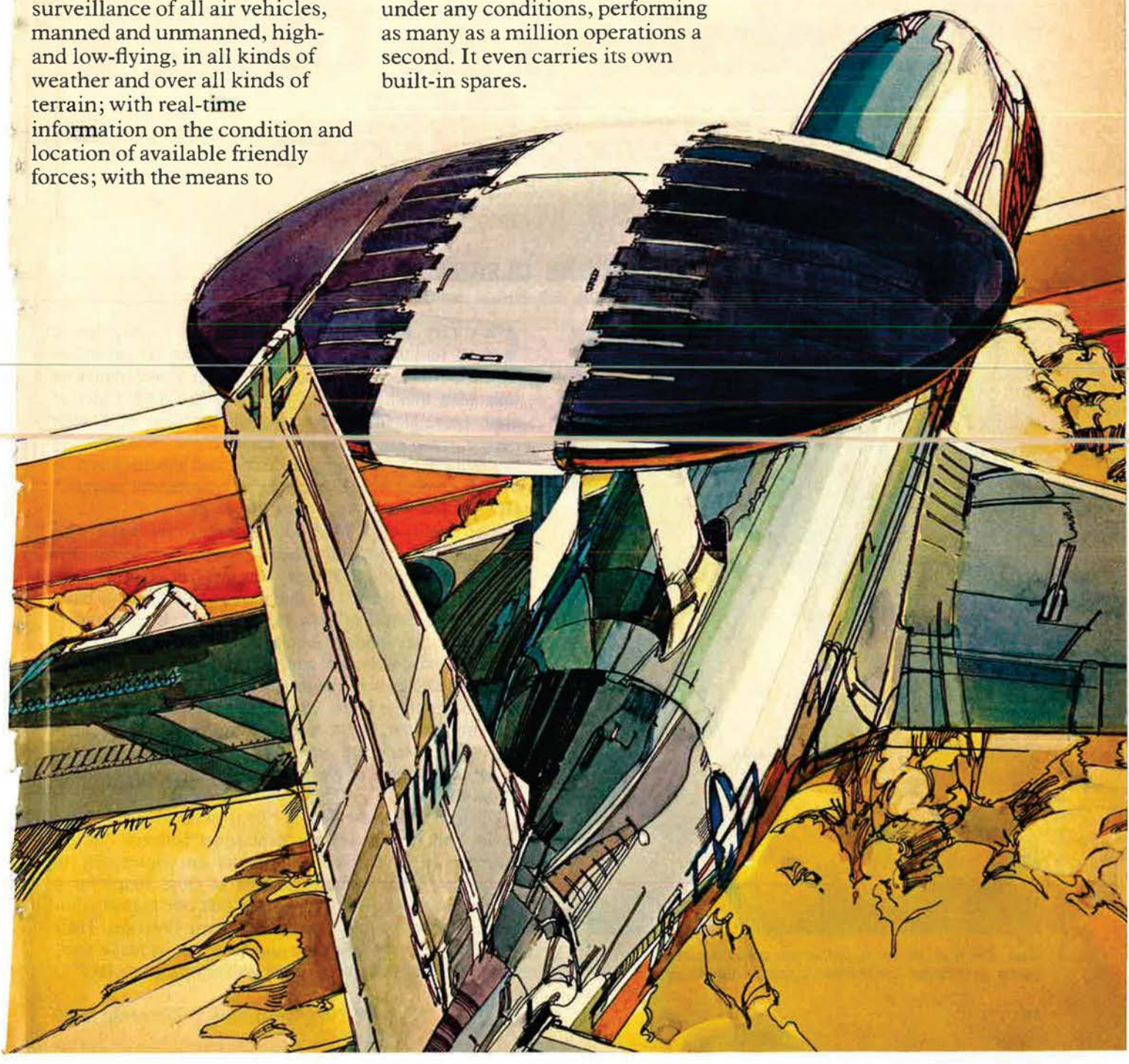

AIR FORCE
SEPTEMBER 1975 MAGAZINE

An Exclusive Interview With General Jones

When he talks about plans for shaping the Air Force of the future, the recurring theme is quality—quality of people, of leadership, of doctrine, and of hardware. And the central, inescapable conclusion is that USAF's Chief of Staff is totally dedicated to making today's "first-rate" Air Force even better, in all aspects that relate to the defense posture of the nation and to the quality of life for those who serve in the United States Air Force . . .

The Quiet Revolution in USAF's Capabilities

BY EDGAR ULSAMER
SENIOR EDITOR, AIR FORCE MAGAZINE

—Official United States Air Force Photograph by Mr. Ron Hall

Gen. David C. Jones is optimistic about America's will to honor its defense commitments and to remain strong.

CAUGHT between the shrinking purchasing power of its budget and the need to offset the expansion of the Soviet aerospace forces, the Air Force stands or falls with quality. This is the view of USAF Chief of Staff Gen. David C. Jones. Only because of "better people, weapons, leadership, and doctrine," USAF leads the numerically stronger Soviet air and missile forces in overall combat effectiveness by a "substantial margin," General Jones told AIR FORCE Magazine.

The quality of USAF's equipment is "far better than that of the Soviet and other Warsaw Pact forces. We have a clear-cut advantage over the USSR—and over the rest of the world, for that matter—because we build the world's best airplanes, military as well as commercial." This advantage, General Jones said, extends from aerodynamics, avionics, and propulsion to the effectiveness and efficiency of the total weapon system.

Manning these better weapons are USAF's people, "of first-rate caliber, battle-tested, experienced, and inquiring." The latter trait, especially pronounced among the younger members of the Air Force, "keeps management on its toes."

US military leadership is "light-years ahead" of the Soviet and Pact forces, General Jones believes: "While stationed in West Germany, I had an opportunity to watch the Soviet military system at close range for a number of years. I am convinced that our system is infinitely more flexible than the Eastern doctrine. Their leadership is very inflexible and reluctant to make decisions, especially if things don't go according to plan."

Left: The A-10's enormous firepower and weapons delivery capability "put us way ahead in close air support." Below: "The F-15 is primarily meant for the air-to-air mission."

The Quiet Revolution

USAF's advantage over the Soviet aerospace forces is essential to offset the tremendous imbalance in ground forces, especially armor, in Europe. "I think we can compensate for the Soviet lead on the ground. I admit that I am more optimistic on this score than most people. There are some misunderstandings about our role in Europe. It's being said that the Air Force is out to win the air battle and then plans to go for deep interdiction. After that, the claim goes, we finally get around to close air support of NATO's ground troops. I know of no commander in the Air Force, or in the US Army, who believes that these are our objectives.

"Our first job in the tac air is to help blunt and stop the armored thrust. This doesn't mean that the total air effort would go to close air support and battlefield interdiction. We would have to maintain localized air superiority to keep the enemy off our backs so we could operate. The interdiction targets I'm talking about aren't deep in enemy territory. They are the ones that threaten us in the battle area, and are related to our job of defending NATO territory. This job, I'm confident, we would be able to do."

In part, General Jones's high confidence in USAF's ability to support NATO rests on what he terms a "quiet revolution in our tac air where new aircraft and subsystems give us a quantum jump in capability." These advances, USAF's Chief of Staff stresses, are pervasive, "providing us with better ways of finding targets, greater accuracy for attacking them, much improved air-to-air capabilities, greater maneuverability and range, better sensors, vastly better munitions . . . in short, our overall effectiveness is going up sharply."

Among the new weapon systems that revolutionize USAF's tactical capabilities are the F-15, F-16, AWACS, EF-111, A-10, RPVs, and an array of standoff weapons, General Jones explained. In the case of the A-10, he cited enormous improvement in firepower—because of the large cannon and the boost in payload—along with marked advances in survivability and weapons delivery capability to "put us way ahead in close air support."

The Chief of Staff predicted broad and important gains from the so-called high/low mix of F-15 and F-16 Air Combat Fighters, particularly in a European scenario. Pointing out that the term "low" in regard to the F-16 refers "only to its relatively low cost in terms of ownership and not its capability, which is quite high," General Jones envisions a "swing force" role for the Air Combat Fighter in Europe: "The F-15 is primarily meant for the air-to-air mission. The F-111 generally will give us all-weather air-to-ground capability. The A-10 is ideal for close air support. The F-16 furnishes us with both great air-to-air and air-to-ground capabilities—and we have deliberately developed it for these dual missions—either of which we can capitalize on as op-

erational needs shift. Hence the term 'swing force.' To some extent, the F-4 gives us this multiple capability today, and of course we will continue to use these aircraft both in the active force and the Reserves for some time to come."

Mini-RPVs and All-Weather Standoff

Extending USAF's tactical air capabilities further are several weapon systems still in a formative state. Among them, according to General Jones, are standoff systems that "enable us to determine the location of targets remotely and attack them without having to expose manned aircraft to terminal defense." A case in point is PLSS, the Precision Location Strike System, currently under development and test, that "pinpoints targets remotely and directs weapons against them with high precision. I foresee a day when we will be able to deal with most fixed targets—and there always are a lot of them—remotely. That is, we won't have to fly over a target and eyeball it, or ping it directly with radar. Instead, it should become possible to screen targets remotely by television or other sensors, located either on an RPV or on the weapon itself. The trend clearly is toward greater standoff capability."

Predicting increasing reliance on remotely piloted vehicles, the Chief of Staff said "we are particularly attracted to mini-RPVs that can be bought in large quantities and at low cost, and operated in a variety of missions." (*See July '75 issue, p. 48.*)

The status and qualifications of personnel required to operate RPVs are being examined, but no final decisions are likely until the systems themselves are more clearly defined, General Jones said. In the case of RPVs "that look pretty much like an aircraft, it may well be necessary to use both rated and nonrated personnel. But I see no reason why we would need rated people to operate mini-RPVs, highly-automated drones, or expendable RPVs."

Although he did not rule out the possibility of using RPVs for air-superiority missions, the Air Force Chief of Staff thought this would not happen in the near future: "Air superiority is predicated on flexible operation and poses a formidable challenge to command and control. It isn't at all like the air-to-ground mission—much of which could be handled by RPVs. We might use RPVs as decoys in the air-superiority role, but it is hard to envision how unmanned interceptor aircraft could be effective."

The Air Force's current five-year plan includes no provisions for a follow-on to the Mach 3-plus SR-71 that General Jones said "will be around for some time. The SR-71 has fantastic capabilities and is highly survivable." He added that it is too early to decide on when a successor system should be developed and what its characteristics might be. General Jones called attention to the B-70 program that was terminated about a decade ago on grounds that a bomber flying "at Mach 3 at the SR-71's altitude would be terribly vulnerable . . . all would get shot down. The SR-71's experience since then proved that the postulated defense capabilities were overstated."

Reduced Flight Training

The proficiency of USAF's flight crews requires continuous training, a requirement not easily met in this era of sharply curtailed flying time. General Jones is "concerned" that the cuts in flying hours may go too deep. The Air Force, he said, is trying to "come up with a happy medium" involving a mix of simulator training, flight training on a low-cost trainer, and limited operation of the actual combat aircraft. In this three-pronged approach, General Jones explained, the Air Force recognizes "the increasing importance of simulators that are becoming much more realistic. I flew in the new C-5 simulator a little while back. It is totally different from most simulators used by the Air Force in the past, and far more realistic."

The second element of flight training continues to be the operational aircraft to which flight crews are assigned. "We simply can't afford to drop below a certain minimum of flying time on the mission aircraft—not only for the sake of crew proficiency but in order to exercise the whole system, including maintenance and so on. It isn't possible to stay totally in an idling mode and expect to shift to full speed all at once. Our goal—and we are still working on our new training procedures—is to produce well-trained crews at minimum cost."

The combination of simulator training and limited flying aboard the mission aircraft "could give us people who are reasonably well trained, but they would be short on experience, especially experience under stress. We are looking, therefore, for a trainer that is at once quite inexpensive yet has reasonable performance. It won't necessarily be supersonic but it *must* be inexpensive to own and operate, and nonpolluting."

Above: The E-3 AWACS offers potentials for boosting US general-purpose force capabilities that are "almost mind-boggling." Right: Minuteman III could evolve into Minuteman IV.

If such a trainer can be operated at a fraction of the cost of standard aircraft, "we should be able to fly a lot more hours and give our pilots the kind of stress experience and confidence they need. I am especially concerned with the psychological effects of night and weather flying. You know that you always walk away from a simulator 'crash' in one piece. That is why an economical trainer is so essential. In my first three years of active duty, I got more than 3,000 hours of flying time. If we don't watch out, it will take a whole career to get in that amount of time."

Total Force Emphasis

Air Force Reserve Forces now provide fifty-six percent of USAF's total airlift capability and more than half of the Aerospace Defense Command's peacetime alert force. For the first time in history, the reserve components have been given a strategic role through the transfer of KC-135 tankers to the Air National Guard and Air Force Reserve. "Our support of the total force concept is much more than lip service. Many years ago, I was an instructor in the Reserve program. That's when I first recognized the great contributions of our Guard and Air Reserve forces to the Air Force, and my experience with activated units in Vietnam and Europe has reinforced that conviction," General Jones told AIR FORCE Magazine.

Pointing out that the relative size and slot allocation between the active-duty force and the reserve components have stabilized—with the latter slightly increased and the former somewhat reduced this year—General Jones said, "We now seem to have the right balance between them, particularly in light of the emphasis on modernizing the reserve components' equipment. Over a four-year period, we are modernizing more than half of the Reserve flying units and assigning them a greater role in peace as well as under conflict conditions. There will be more annual training away from home bases, preferably in overseas areas where the units might have to operate in case of war. It won't be possible to do this for every unit every year, but the trends will be in that direction."

Close Cooperation With Other Services

Mutual support and close cooperation among the military services is essential to achieve the highest possible productivity of each. "In my years in the service, I have never seen better relations among the services than we have today. There is good cooperation and mutual respect in the JCS. We do have different perspectives, of course, but there is no parochialism, and there is strong mutual support across the board, from training to actual mission areas. The Navy, for instance, supports the Aerospace Defense Command [through the allocation

of fighter forces under certain contingencies], and we in the Air Force are hard at work assisting the Navy in maritime missions," General Jones said. This ancillary USAF mission goes well beyond deployment of B-52 bombers equipped with antishipping weapons and includes the F-15, SR-71, and F-111 as well as a "lot of joint exercises." AWACS, General Jones told this reporter, "offers a potential for enhancing the effectiveness of our [tactical] land, sea, and air forces that is almost mind-boggling. I foresee a brilliant future for that system."

Merits of Prototyping

The present healthy state of USAF's tac air is in part due to the prototype concept in effect over the past few years, according to General Jones. "Prototyping has paid off in the case of the A-10 and the F-16. As a matter of fact, it makes all the difference in the world. Competition is what has made this country great. Prototyping brings industry's imagination into the forefront through competition. We advocate prototyping and expect to see increased reliance on this approach in the years ahead. The challenge, as I see it, is to be able to engage in prototyping without having to go into production, the idea being simply to advance the state of the art. Industry, understandably, is not as interested in prototyping as in production." Reconciling the divergent interests of government and industry presupposes compromises by both parties, with the Air Force position being that "we don't propose to completely disassociate prototyping from production, but the latter should not become a requisite for starting a prototype program," General Jones said.

The FY '77 USAF budget request can be expected to provide "the lead points" of a number of long-term prototype programs. Among them may well be an aircraft of "even more advanced aerodynamic features than those of the F-16 and, we hope, of equal benefit." Other new Air Force initiatives are likely to include a new digital radar system, a lightweight radar missile, and a low-cost trainer. The fertility of US defense technology, General Jones pointed out, enables the Air Force "to sort out our priorities and to ensure that we buy just the right things. But we have so much on the drawing boards right now that we must be very careful to avoid what could be termed a 'bow wave' of funding in the future that is larger than we can handle."

Doubling Strategic Mobility

The Air Force is taking a number of steps to increase the strategic mobility of US general-purpose forces. The long-term goal, General Jones told AIR FORCE Magazine, is to cut the time required for aerial deployment "at least in half, particularly in getting the lead elements to Europe in support of NATO commitments. As Secretary Schlesinger points out, it doesn't do any good to have a Marine division at Camp Pendleton or an Army division at Fort Carson if we can't airlift the people and their equipment into the conflict area in time."

USAF's airlift enhancement program involves aerial refueling of the C-5 and the C-141, stretching the latter, developing the Advanced Medium STOL airlifter (AMST) and an Advanced Tanker/Cargo Aircraft (ATCA), and expanding CRAF, the Civil Reserve Air Fleet, General Jones said. "We are covering airlift enhancement in a broad sense, with particular emphasis on deployment of Army forces. We have good airlift capabilities for USAF's own forces, but there is a great need to improve our ability for handling the other services."

Although the C-5 is "not without troubles, particularly in wing structure, it can do things that no other aircraft in the world can. For instance, we were able to take eight F-5Es to the Middle East nonstop in one C-5, using aerial refueling," General Jones said.

The Strategic Balance

General Jones's high confidence in USAF's strength

Setting the Record Straight on the *Mayaguez* Rescue

In May of this year, Air Force Chief of Staff Gen. David C. Jones served as the Acting Chairman of the Joint Chiefs of Staff during the seizure and subsequent rescue of the US merchant ship *Mayaguez* and her crew from Cambodian forces in the Gulf of Siam. He described some of his impressions for AIR FORCE Magazine:

"I had the honor and responsibility to serve [then] as the Acting Chairman and to participate in all the deliberations of the National Security Council and the President's meeting with the congressional leadership. The determination to succeed was clear from the start. Napoleon said that 'in war the moral is to the material as three to one.' Key to moral strength is the confidence that one is going to succeed.

"There never was any question in our minds about getting the ship's crew back. That attitude of confidence permeated all our actions. I believe that a major reason for our success was the President's straightforward determination and the calm and collected manner in which the decisions were made. It was gratifying to see that the nation can act effectively in its own interest. I don't want to overblow the meaning of getting the ship back, but our action did have profound impact on our allies.

"There were claims of inadequate intelligence in connection with the rescue operation. I would have to say that I have never been involved in any military operations where we had all the intelligence we wanted. This didn't mean that the intelligence system failed us. The first question, of course, was, 'Where is the ship?' It took us a little while to find it in the middle of the night, but the reconnaissance forces did a fine job.

"The next question was, 'Where are the crew members?' We were uncertain. We acted on the best information available. I don't call it a failure of intelligence that we couldn't track thirty-nine people immediately in that very difficult area of the world. In general, intelligence gave us all the information we could reasonably expect. And the forces of three services acted gallantly in the rescue of the crew."

in the general-purpose arena extends also to strategic deterrence, but is tempered with caveats: "We have today what undoubtedly is perceived as a state of strategic balance. But we must also recognize that the world is a far less stable place today—under a condition of strategic parity—than in the 1950s and the early 1960s when the US had clear-cut strategic superiority. It is hard to predict what would happen if the Soviets were to gain strategic superiority, but obviously there would be considerably less stability than today. What we are trying to do in our FY '76 budget and our longer range planning is to maintain the strategic balance with the USSR. We don't seek to regain superiority. We support the Strategic Arms Limitations Talks. As a matter of fact, we hope they will lead to further reductions of strategic weapons by both sides. Our goal is not a large Air Force. Our only objective is protecting the security and interests of the United States and the free world. If we could do that with fewer systems and a smaller military establishment, I am all for it."

The shift in national policy toward flexible deterrence requires "no major changes" in USAF's force structure, according to General Jones. What is required are modifications in "how we deploy the force and in our

Important Emphases in USAF's Personnel Policies

General Jones's broad goal of quality people for the Air Force hinges on "good discipline and high standards. I want people all the way in or all the way out of the Air Force. We have no room for those who want to be part in and part out," he told AIR FORCE Magazine.

A cardinal requirement to attract and retain "quality people" in an all-volunteer force environment is a system of adequate incentives, consisting of "a good promotion system for enlisted and officer personnel, good remuneration, and good indirect benefits, from medical care to retirement."

Stability is a crucial factor in retaining high-quality personnel, General Jones believes. With an impending decline to 590,000 military—down from 815,000 six years ago—and 270,000 civilian positions, USAF's force strength is "either at rockbottom or very, very close to it," General Jones said. "There is an obvious need to provide some form of stability. This we are trying to do." Program changes and phase-outs produce unavoidable turbulence in the personnel area, including RIFs, but the Air Force will seek to minimize those.

But there will be "major changes," implemented gradually to avoid turmoil. One involves an increase in the ratio between enlisted and officer personnel, "which will be accomplished over a period of time to avoid additional RIFs. As a result, more of our senior NCOs will do jobs that presently are being performed by officers."

There will be concerted efforts, Air Force-wide, to "give our people more meaningful jobs and to challenge their talents more fully." At the same time, the percentage of people assigned to combat functions will be increased and support jobs decreased. "We are working with Congress to fully equip twenty-six tactical fighter wings as part of our plan to improve the Air Force's teeth-to-tail ratio."

Major changes within the enlisted force are pending, General Jones told AIR FORCE Magazine: "I requested a group [of experts in Hq. USAF] to look for ways to improve the Air Force. We are coming up with lots of ideas, but I am not sure what will be put into effect. We may break the enlisted force more clearly into threes, the top three, the middle three, and the lower three. There must be greater differentiation as people move from one group to the next higher one. I believe that we should match increased rank with greater responsibility and authority. The new system will try to achieve that.

"This doesn't mean that we will take anything away from what our more junior enlisted people have today; rather, we plan to recognize their additional responsibility and authority as they move up through the ranks and through these three groups. Some of the details have yet to be worked out, such as whether we will change the titles of the groups—we might not want to call six out of the nine sergeants, for instance—or whether we will change the insignia. We do know that we don't want to go to a technician system where one group holds rank and the other technical titles."

Because the military services operate differently, the Air Force's restructuring of its enlisted hierarchy may turn out to be unique. "I don't know of plans for similar changes elsewhere," General Jones said.

The so-called retired "pay inversion," at this writing seemingly headed toward correction by Congress, is a "definite thorn" to Air Force personnel policies, General Jones acknowledged: "This is affecting thousands of people, officers and enlisted alike. In many cases it is more than just a matter of money. Our people just don't understand the inequity of penalizing military personnel for staying on active duty."

Commenting on recurring speculation about unionization of USAF personnel, the Chief of Staff told AIR FORCE Magazine:

"The Air Force expends a great deal of time, talent, and resources in developing personnel policies which protect the interests of the individual and yet are consistent with the demands of our mission. Each Air Force member is assigned duties that support that mission—to safeguard the security of the United States.

"The effective accomplishment of that mission depends upon the clear authority of Air Force commanders and requires a discipline fully responsive to that authority. That requirement is both a matter of military tradition and custom, as well as law.

"In that light, an Air Force member's rights of expression are jealously preserved, consistent with good order, discipline, and national security. With regard to unionization of service members, the Department of Defense has clearly spelled out the policy on collective bargaining for servicemen in Department of Defense Directive 1325.6, which says that commanders are not authorized to recognize or to bargain with a so-called serviceman's union."

planning doctrines and training, coupled with some hardware changes." These include installing the Command Data Buffer to improve the retargeting capabilities of the Minuteman III force, increased accuracy, and advanced warheads with greater yield, and greater flexibility of the strategic bomber force through introducing the B-1. "I am not suggesting that we developed the B-1 to implement strategy of flexible options, but the aircraft happens to have these capabilities."

Commenting on recent changes of the B-1 program, General Jones said Air Force specialists probed cost, performance, and reliability factors associated with the aircraft's variable engine inlets and crew module. The findings in both instances were that deletion would simplify the aircraft, enhance its reliability and maintainability, and reduce costs. The escape module, now replaced by ejection seats, "required almost as much additional maintenance as a fighter aircraft.

"It has been suggested that we make the B-1 a subsonic airplane. Such a recommendation ignores the fact that the aircraft requires variable-sweep wings in order to penetrate at high subsonic speeds on the deck as well as to provide it with acceptable takeoff, range, and ride qualities. Once you have variable sweep and nuclear hardening, you already have paid for most of the supersonic features."

Changed B-52 Posture

The Air Force has adjusted the alert rate of the B-52 strategic bomber force from forty to thirty percent and, at the same time, changed crew training to "broaden the versatility of our bombers."

An intrinsic advantage of the strategic bomber force, General Jones said, "is the ability to vary its alert rate, thereby adjusting its capability, and signaling the seriousness of our concern. That is one of the reasons for changing our alert posture somewhat. The changes in crew training are only partially tied to the emphasis on limited nuclear options. We are expanding some aspects of training to gain greater versatility for the strategic bomber force, involving conventional as well as nuclear weapons." While he abstained from describing the nature of the expanded B-52 flight training, he stressed that, as a result, "we can pick and choose more as to how we use the force, with or without nuclear weapons."

Strategic Missiles

Two fundamental options are available in assuring the long-term viability and credibility of the ICBM force: "The choice essentially is between upgrading the missile force in an evolutionary way or in a substantial, radical way." Two factors will influence the decision—changes in Soviet capabilities and the need to replace existing systems because of aging, according to General Jones. In the absence of significant change in the Soviet threat, only normal aging and obsolescence would have to be allowed for. This could lead to the evolutionary development of what General Jones called Minuteman IV, an upgraded version of the present family of silo-based ICBMs. But such a gradual upgrading requires an alternative in the form of a measured R&D program involving MX, a new-generation missile that can be deployed in mobile form as well as in fixed silos.

"We are working on advanced development programs of the MX missile, which contain a series of milestones providing for timely decisions on such matters as specific basing modes and actual deployment. For the moment, we are not foreclosing either an air-launched or a ground-mobile approach, in addition to fixed-site deployment. We are starting work on the underlying concepts in terms of the missile itself, its guidance and its propulsion. Sometime downstream, as we examine the advantages and disadvantages of the various design options, we will make final decisions about basing mode and deployment. What the Soviets do in the interim will have direct impact on how we proceed, but it doesn't necessarily follow that if they take a certain step we will do the same," General Jones said. Future MX prototypes are to be considerably larger than Minuteman, weighing in at around 150,000 pounds to provide a throw weight close to that of Titan, or that of the new Soviet SS-19 missile.

The Air-Launched Cruise Missile (ALCM), another advanced development program in the strategic weapons area, is in a similarly tentative state. "We have provisions in the budget to work on such a system that could go on the B-52 and the B-1 to augment SRAM. We don't have to decide right now when and how many of these missiles we will need, but I would expect that such a determination will be made within the next five years." While the Air Force would prefer to have a supersonic ALCM, "if we didn't have to pay too much for it, our cost-effectiveness tradeoff studies to date indicate" that starting out subsonically and maybe later shifting over to supersonic performance makes more sense, according to General Jones.

A recently completed Air Force study called "New Horizons," which examined areas of potential breakthroughs in aerospace technology, produced no evidence "that exotic space weapons can be expected to revolutionize the nature of warfare in the near future. We do expect space to give us continuing improvements in our surveillance, command control and communications, and other capabilities that are not directly force-related. But we don't think that space will yield any dramatic change over the near term," General Jones told AIR FORCE Magazine.

Although USAF supports NASA's development of the Space Shuttle because "obviously there will come a time when it becomes necessary to shuttle back and forth to space, it is very difficult to establish the system's cost-effectiveness at this time. It isn't clear yet how much we will use the Shuttle in our space program or whether continued use of our present family of launch vehicles will be more economical. We do believe that such a system is inevitable, and the only question is when, not if," he said.

But more important to US defense capabilities than weapon systems and the internal structure of the Air Force is "our country's will to maintain its defense commitments and to remain strong. When I talk to Air Force people and civilians alike, I detect a deep concern about the future. The overriding question seems to be 'are our best days behind us or is there a bright future ahead?' I believe that we have good reason to be optimistic." The Chief of Staff says this with conviction. ■

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An AIR FORCE Magazine Photochart
(As of September 1, 1975)
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Lt. Gen. Walter T. Galligan
Hq. Fuchu AS, Japan

13th Air Force
Maj. Gen. Leroy J. Manor
Hq. Clark AB, Luzon, P. I.

Air Force Contract Management Division
Maj. Gen. Maurice R. Reilly
Kirtland AFB, N. M.

Foreign Technology Division
Col. John B. Marks
Wright-Patterson AFB, Ohio

Armament Development and Test Center
Maj. Gen. Howard M. Lane
Eglin AFB, Fla.

Air Force Space and Missile Test Center
Maj. Gen. Warner E. Newby
Vandenberg AFB, Calif.

Air Force Flight Test Center
Maj. Gen. Robert A. Rushworth
Edwards AFB, Calif.

Arnold Engineering Development Center
Col. Oliver H. Tallman
Arnold AFS, Tenn.

Air Force Civil Engineering Center
Col. Robert M. Iten
Tyndall AFB, Fla.

Air Force Eastern Test Range
Brig. Gen. Don M. Hartung
Patrick AFB, Fla.

Strategic Air Command
Gen. Russell E. Dougherty
Hq. Offutt AFB, Neb.

8th Air Force
Lt. Gen. Richard M. Hoban
Hq. Barksdale AFB, La.

15th Air Force
Lt. Gen. Bryan M. Shotts
Hq. March AFB, Calif.

1st Strategic Aerospace Division
Brig. Gen. Stuart H. Sherman
Hq. Vandenberg AFB, Calif.

3d Air Division
Brig. Gen. Thomas F. Rew
Hq. Andersen AFB, Guam

Technical Training Center
Maj. Gen. Cecil E. Fox
Sheppard AFB, Tex.

USAF Recruiting Service
Brig. Gen. Andrew P. Iosue
Randolph AFB, Tex.

United States Air Force Security Service
Brig. Gen. Kenneth D. Burns
Hq. Kelly AFB, Tex.

CONTINUED ON NEXT PAGE . . .

THE MAJOR COMMANDS (Continued)

Air Force Communications Service
Brig. Gen. Rupert H. Burris
Hq. Richards-Gebaur AFB, Mo.

European Communications Area
Col. John T. Randerson
Hq. Ramstein AB, Germany

Pacific Communications Area
Brig. Gen. William G. MacLaren, Jr.
Hq. Wheeler AFB, Hawaii

Tactical Communications Area
Col. Robert F. McCarthy
Hq. Langley AFB, Va.

Northern Communications Area
Brig. Gen. William R. Yost
Hq. Griffiss AFB, N. Y.

Air University
Lt. Gen. Raymond B. Furlong
Hq. Maxwell AFB, Ala.

Air War College
Brig. Gen. Stanley M. Umstead, Jr.
Maxwell AFB, Ala.

Air Command and Staff College
Brig. Gen. Robert F. C. Winger
Maxwell AFB, Ala.

Squadron Officer School
Col. Thomas H. Normile
Maxwell AFB, Ala.

Air Force ROTC
Brig. Gen. James R. Brickel
Maxwell AFB, Ala.

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Lt. Gen. James R. Allen
Hq. Colorado Springs, Colo.

Air Force Reserve
Maj. Gen. William Lyon
Hq. Robins AFB, Ga.

Air Force Data Automation Agency
Col. Frederick L. Maloy
Hq. Gunter AFS, Ala.

Air Force Inspection and Safety Center
Maj. Gen. Ranald T. Adams, Jr.
Hq. Norton AFB, Calif.

Air Force Military Personnel Center
Maj. Gen. Walter D. Druen, Jr.
Hq. Randolph AFB, Tex.

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Washington, D. C.

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Deputy Commander in Chief, U S European Command, Valhingen, Germany

Gen. Louis T. Seith
Chief of Staff, SHAPE, Belgium

Lt. Gen. Lew Allen, Jr.
Director, National Security Agency
Ft. Meade, Md.

Lt. Gen. Devol Brett
U S Representative to the Permanent Military Deputies Group, CENTO

Lt. Gen. John J. Burns
Deputy Commander in Chief, U S Forces, Korea, Deputy Commander in Chief, UN Command, Korea

Lt. Gen. Maurice F. Casey
Director, J-4, Joint Chiefs of Staff

Lt. Gen. Martin G. Colladay
Deputy Chairman, NATO Military Committee, Belgium

Lt. Gen. Howard M. Fish
Director, Defense Security Assistance Agency, OSD
Washington, D. C.

Lt. Gen. Warren D. Johnson
Director, Defense Nuclear Agency
Washington, D. C.

Lt. Gen. George G. Loving, Jr.
Commander, Sixth Allied Tactical Air Force, Izmir, Turkey

Lt. Gen. Winton W. Marshall
Deputy Commander in Chief, U S Readiness Command, MacDill AFB, Fla.

Lt. Gen. William C. Moore, Jr.
Chief of Staff, Pacific Command
Camp H. M. Smith, Hawaii

Lt. Gen. Lee M. Paschall
Director, Defense Communications Agency
Arlington, Va.

Lt. Gen. Brent Scowcroft
Deputy Assistant to the President for National Security Affairs
Washington, D. C.

Lt. Gen. Ray B. Sitton
Director, J-3, Joint Chiefs of Staff, Washington, D. C.

Lt. Gen. William Y. Smith
Assistant to the Chairman, Joint Chiefs of Staff
Washington, D. C.

Lt. Gen. Eugene F. Tighe, Jr.
Deputy Director, Defense Intelligence Agency
Washington, D. C.

Maj. Gen. John G. Albert
Commandant, Defense Systems Management School
Office of the Secretary of Defense
Washington, D. C.

Maj. Gen. Richard C. Bowman
Director, European Region
Office of the Assistant Secretary of Defense (ISA)
Washington, D. C.

Maj. Gen. Arnold W. Braswell
Assistant Chief of Staff, Operations, SHAPE, Belgium

Maj. Gen. Lincoln D. Faurer
Deputy Director for Intelligence, DIA
Washington, D. C.

Maj. Gen. John G. Giraudo
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MacDill AFB, Fla.

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Headquarters Command, USAF
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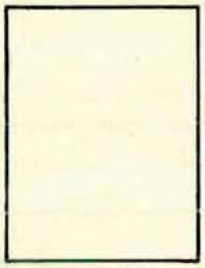
Civil Air Patrol
Brig. Gen. Carl S. Miller
Maxwell AFB, Ala.

AF Institute of Technology
Maj. Gen. Frank J. Simokaitis
Wright-Patterson AFB, Ohio

United States Air Forces Southern Command
Maj. Gen. James M. Breedlove
Hq. Albrook AFB, Canal Zone



Air Force Test and Evaluation Center
(Temporarily Vacant)
Hq. Kirtland AFB, N. M.

Air Force Accounting and Finance Center
Maj. Gen. Lucius Theus
Hq. Denver, Colo.

Air Force Office of Special Investigations
Col. Roy C. Tucker, Jr.
Hq. Washington, D. C.

Air Force Audit Agency
Brig. Gen. Thomas G. Bee
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Air Reserve Personnel Center
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Hq. Denver, Colo.

Air Force Intelligence Service
Maj. Gen. George E. Keegan, Jr.
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USAF

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Oslo, Norway

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Vice Director, J-5
Joint Chiefs of Staff
Washington, D. C.

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Deputy Assistant Director, Plans and Analysis Bureau
United States Arms Control and Disarmament Agency, Department of State
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Vaihingen, Germany

Maj. Gen. Thomas P. Stafford
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National Aeronautics and Space Administration
Washington, D. C.

Maj. Gen. Eugene B. Sterling
Assistant Director, Plans, Programs and Systems, Defense Supply Agency
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Maj. Gen. Robert M. White
Chief of Staff, 4th Allied Tactical Air Force
Ramstein AB, Germany

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Assistant Director
(Tactical Systems, Test and Evaluation)
Defense Research and Engineering, Office of the Secretary of Defense
Washington, D. C.

Maj. Gen. Charles L. Wilson
Special Projects Office
Static War Headquarters
Allied Command Europe
Mons, Belgium

Maj. Gen. Hoyt S. Vandenberg, Jr.
Chief, Military Assistance Advisory Group, Teheran, Iran

Maj. Gen. William B. Yancey, Jr.
Director, J-5, U S European Command
Vaihingen, Germany

AUTHORITIES at the USAF Military Personnel Center recently asked hundreds of officers what they think of the new Officer Effectiveness Report system the service launched last November.

"It is more equitable and presents a more accurate picture of performance and potential than the previous system" was the consensus of responses. A guarded evaluation at best.

USAF leaders are cautiously optimistic, though they're not prejudging the new rating program that is being watched so closely by the 100,000-member officer corps. Frustrated for years by an overinflated rating program that long ago lost most of its credibility, the membership has its collective fingers crossed over the acceptability of the new system. It may take a couple of years to tell.

The new system, taking direct aim at slashing rating inflation, drastically curbs the number of officers who can receive high marks on their OERs. Under it, exactly half the officers now receive "lower-half" ratings, which many of them regard as damaging to their promotion chances, even their careers. Anguish prevails in some quarters.

Why ratings in the first place, if they are a continual source of irritation? With so many members, some formal officer record-keeping plan is necessary to pinpoint what each one is doing, and how well or poorly he's doing it. Lt. Gen. John W. Roberts, former Deputy Chief of Staff for Personnel, Hq. USAF, now Commander of Air Training Command, put it this way:

"Even though many of us dislike rating others, and being rated ourselves, we have to recognize that evaluations are necessary . . . to document achievements, assist in assigning the right officers to the right jobs, and to provide a written picture of performance. Because of its importance to the Air Force and the officer, the new system was developed to restore the OER's effectiveness in selecting the best officers for increased rank and responsibility."

The Inflation Spiral

Performance ratings plagued the service way back in the early 1940s. As World War II dragged on, most officers came to understand that the carloads of "outstandings" and "superiors" being handed out translated more nearly to "satisfactory." And satisfactory, in turn, really meant "unsatisfactory."

The first truly USAF rating form surfaced in 1949, but it was replaced in 1952 following extended studies of rating systems used by other government agencies, US industrial firms, and foreign governments. It was periodically altered and patched up until its demise late last year.

By the early 1960s, inflation had set in again with a vengeance; greater numbers of officers were being marked as near superhumans. This, in turn, spelled trouble for promotion boards. Did they, because of multiple high ratings many officers received, always choose the best people for advancement? Were some deserving persons passed over, maybe for a second time (and elimination)?

Uncertainties spread throughout the officer corps, causing jitters and touching off unkind remarks about the "system." The leadership at the same time was kept off balance, on the defensive. And the OER program became more difficult to defend.

Not that Air Force didn't try to shore it up. Headquarters frequently pressed field and lower-echelon leaders to resist inflation by spreading ratings—by handing out poor, medium, and good marks as well as excellent ones.

Last November, USAF inaugurated a new system for rating the effectiveness of its officers. In a determined effort to overcome the OER inflation that has made it difficult for boards to determine which officers merit promotion, the system's designers have devised controls that, for the first time, have real teeth. Here AIR FORCE Magazine takes a look at how the new approach is working out . . .

RATING THE EFFECTIVENESS OF EFFECTIVENESS RATING

BY ED GATES, CONTRIBUTING EDITOR, AIR FORCE MAGAZINE

But these messages, like the OER system, lacked teeth. There were no specific controls from the head shed to effect a spread-out, and most rating officers couldn't bring themselves to rate "tough." The few who did were accused of jeopardizing the careers of persons they rated.

The service's past rating systems featured rating classifications headed by lofty, unrealistic labels. For many years, it used a ten-point alignment topped by "absolutely superior," "outstanding officer almost never equaled," "excellent officer seldom equaled," and "effectiveness well above most officers."

This meant that the fifth highest rating, "an effective competent officer in his grade," which to the uninitiated sounds indeed praiseworthy, was, in reality, the kiss of death.

By 1971, it was so customary to think in superlatives when rendering OERs, that the mean score for the then 70,000 company graders topped a figure of eight (nine was perfect). The mean OER for the 45,000 field-grade officers had reached an astounding 8.5, and, by last year, nearly ninety percent of all USAF officers were rated in the highest block. Seventy-five percent had received five consecutive "nines"!

The Army has a similar history with its OERs and is currently looking for something better. Perhaps Army's difficulty is that the last time it changed its system, it merely reworked the rating form without adopting "rating controls."

The New "Controls"

That word—"controls"—is the key to Air Force's new program. Hopes are pinned on the requirement that no more than twenty-two percent of the officers being evaluated by each reviewer receive a 1, the new top box rating, and no more than fifty percent get top box and second box (2) markings. In practical terms, it means twenty-two percent of the officers in

each grade receive top and twenty-eight percent second box ratings.

The remainder—half the entire force—must be rated in the remaining four boxes. As a practical matter, virtually all of them—50,000 persons—are receiving third box, or 3, ratings. This, not surprisingly, is the trouble spot; despite official assurances to the contrary, officers regard third boxes with trepidation, two in a row with dismay.

Personnel officials, however, insist that "the sheer mathematics of opportunity make the third block a competitive rating for due course advancement. Promotion opportunity exceeds the fifty percent maximum (except to full colonel) which may be rated on the top two blocks."

Some seven years of study, testing, and workshops preceded adoption of the new OER program last November. One major change followed early this year. While Headquarters now considers the new plan fully implemented, at least two years will probably pass before the verdict—is it working or isn't it?—is in.

The new plan features a thoroughly revised, simplified rating for colonels and below. And for lieutenant colonels it introduces a "closed fitness form." With minor variations, it operates the same for Air Force Reserve and Air National Guard officers as for active-duty members.

Captains through colonels normally will be rated once a year on the new AF Form 707, lieutenants twice annually. For example, all captains with the required 120 days of supervision on October 31—the "cycle" close-out date for that grade—will receive a new report (*see accompanying chart for control periods and cycle close-out dates for each grade*).

In the important Section III, "Performance Factors," officers are rated against specific standards, *e.g.*, "job knowledge," and "adaptability to stress," rather than against their contemporaries. If raters agree that their subjects "meet standards," narrative comments will be omitted. In any event, the flowery encomiums often used by raters in the past will end, Headquarters has vowed.

The "Reviewer"—Key to Control

On the reverse side of Form 707 is Section V, "Evaluation of Potential," reproduced on p. 59. Here are the teeth, the controls. It contains six blocks each for the rater, additional rater, and reviewer; the arrow indicates the highest down to the lowest. Top box is reserved for a maximum of twenty-two percent of those being rated, second box for the next twenty-eight percent, and third (and lower) boxes for the remaining fifty percent of the force. USAF calls this a 22-50-100 percent distribution formula.

The "rater"—the ratee's immediate supervisor—makes the initial judgment, followed by the "additional rater," who is normally the next higher officer in the chain of command. He must decide whether the rater's findings are documented and justified, and assist the reviewer in spreading the ratings in accordance with the overall formula. However, the rater and the additional rater are not held to the percentage formula.

The "reviewer" is the key figure in the process. He's probably a wing commander and is the last man in the rating chain. His ratings in Section V are the ones that are formally controlled. He must meet the distribution formula with all the ratings—usually dozens—that flow into him.

To designate the reviewers, Hq. USAF has established "control points" throughout the service. These are major commands, Air Staff deputy chiefs, and other lofty elements. Their

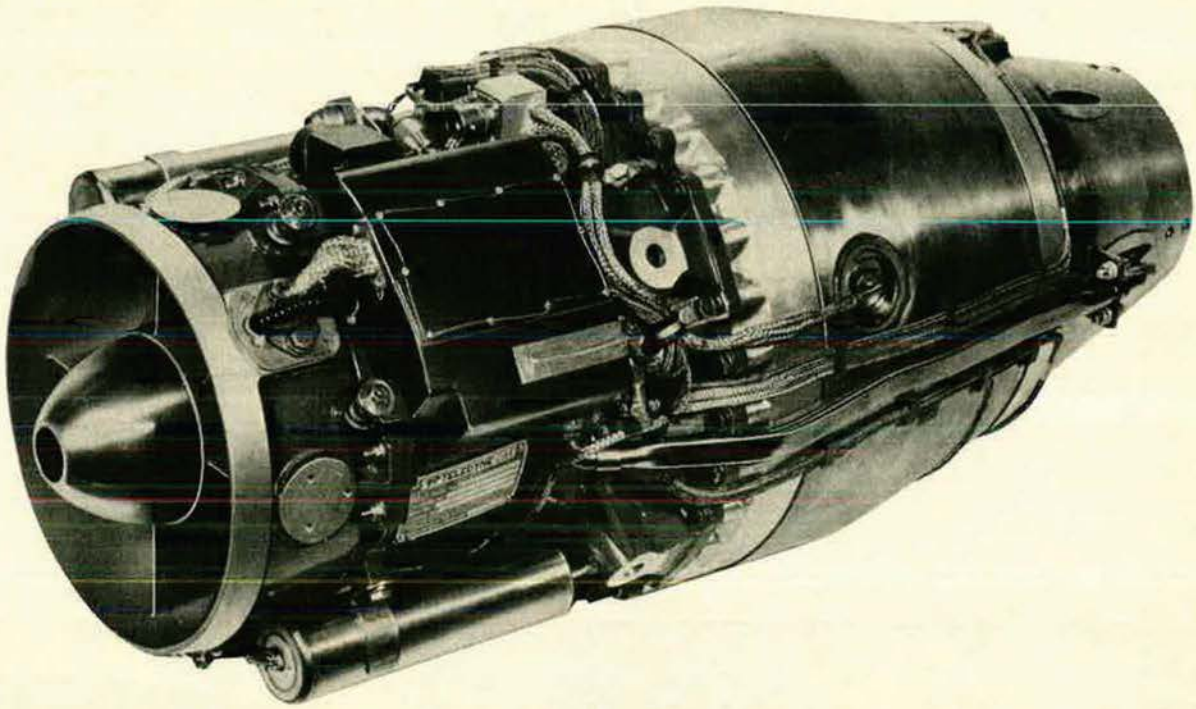
NEW OFFICER EFFECTIVENESS REPORT SCHEDULE

Grade	Beginning of Control Period	Cycle Close-Out Date
Colonel*	April 1	July 31
Lt. Colonel*	December 1	March 31
Major	September 1	December 31
Captain	July 1	October 31
Lieutenant	May 1 (first cycle)	August 31
	Nov. 1 (second cycle)	February 28 (29)

Lieutenants, who recently received their first new OER, will be rated every six months instead of eight as heretofore. All other grades receive one report annually.

**Effective in 1976, the cycle dates for colonel will be March 1–June 30 and for lieutenant colonel January 1–April 30. Others will be the same as shown above.*

The J402 Turbojet:



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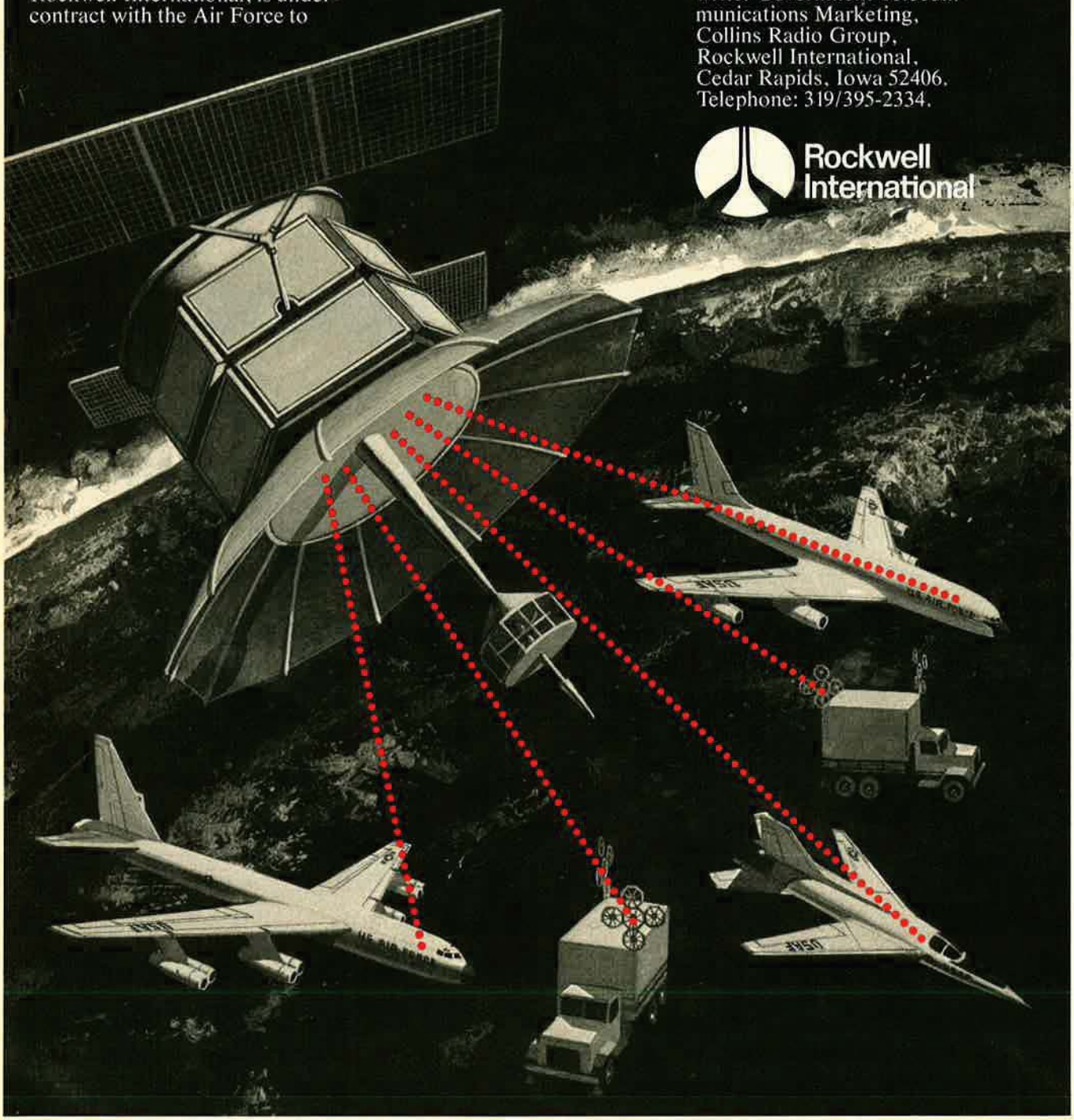


job: ensure Air Force-wide standardization in the new evaluation process.

Each control point—Major Command X, for instance—translates the distribution formula into actual numbers for each reviewer. Let's say that the command has 2,000 majors. The first rating period for majors is actually starting now (September 1) and will close out December 31.

Command X may determine that a particular reviewer has 150 majors' ratings to examine. That means he must ensure that no more than thirty-three receive top boxes and no more than seventy-five top or second boxes. This leaves exactly seventy-five who must receive box three (or lower). This same procedure is followed Air Force-wide.

For raters and reviewers who regard the bulk of their officers as top box, the process is most distasteful. But there's nothing they can do about it, and if the ratings flowing to the reviewer exceed the prescribed formula, some must be lowered.

Reviewers, under the new rules, cannot return OERs to raters and force them to downgrade or upgrade specific persons, but they can require them to make "priority" listings of all ratees. In addition, review boards can be created to help reviewers regrade OERs to fit the formula.

Also part of the new system is the "closed" AF Form 705, used only on lieutenant colonels—they never see it—and sent directly to full-colonel selection boards. Providing added information for such panels, it is modeled after the AF Form 706, which has been used—successfully, USAF reports—for several years by boards picking colonels for star rank.

The "Specially Assigned" Groups

Before settling for the 22-50-100 percent control formula for all officers, Air Force strongly considered a major alteration. It would have provided that the "normal range of officer quality" (involving about ninety-one percent of the corps) would be covered by a 20-52-100 percentage configuration, allowing fewer top boxes.

The other nine percent of the officers were to enjoy a more favorable spread. Air Staff assignees, for example, were to be allowed thirty-eight percent top boxes, forty-five percent second boxes, and only seventeen third (or lower) boxes, for the 38-83-100 formula.

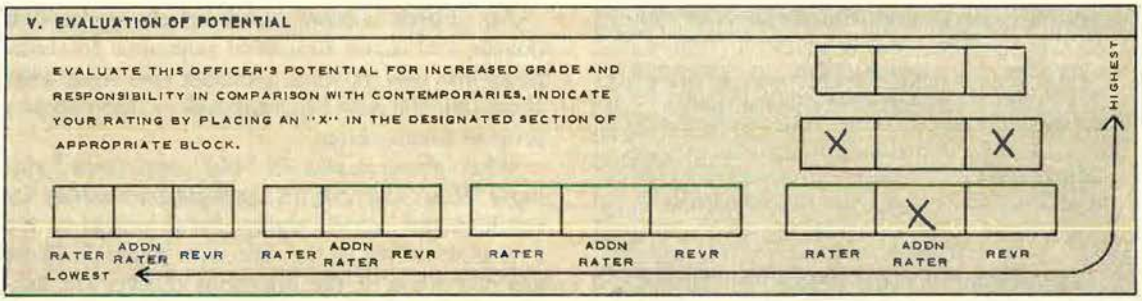
The rationale was that since the Air Staff (and a few other small groups) have consistently received "top priority in manning considerations," they should receive a more generous helping of the two top boxes and fewer third boxes. Commands protested, however, and pursuaded Headquarters to adopt a standard, Air Force-wide formula, namely the 22-50-100 lineup now in operation.

How then, officers might ask, will air staffers and other elite groups receive their fair share of promotions? And, of course, there's the related but broader question of how the new system will impact on promotions generally.

Air Force, in response, first noted that the new system will not affect the number of promotions. "The new OER simply assists in determining who should be promoted. . . . Fewer will get the top rating . . . [and thus] a top block will no longer be a must for advancement."

In fact, USAF insists, a "third block rating is a good rating and will continue to be competitive for all promotions through lieutenant colonel."

Conversely, it "will not be tantamount to promotion," authorities said. They reiterated that the "OER or its final evaluation of potential cannot ever be the sole determinant of a promotion selection." And they underscored that "other factors," such as jobs held while getting ratings, coupled with education and



Here is the critical Section V, Evaluation of Potential, of the new OER with its six sets of boxes. It's here the controls apply. Top box is in the upper right, boxes two and three immediately below. The sample ratings inked in show that the rater marked the second box, the additional rater disagreed, but the reviewer—the final authority—sided with the rater. The ratee, therefore, missed the group containing the top twenty-two percent of those being rated, but landed among the next twenty-eight percent. The remaining fifty percent of officers being rated had to settle for third box (or, in rare cases, a lower one).

breadth of experience, "will continue to play a major role in promotions."

The Air Force "needs, and will continue to need, officers with the breadth of experience that can only be gained in a higher headquarters assignment. The only way we can keep these officers is to promote them," General Roberts said recently.

Yet there are conflicting views on whether promotion boards will tilt toward air staffers and other specially assigned groups. "Many field commanders regard their officers just as highly as Headquarters views theirs," one knowledgeable source said.

RATING AIRMEN

Like the OERs, Air Force's enlisted rating system—the Airman Performance Rating Program—has endured inflation woes. An overhaul is possible, though not right away. APRs, as OERs used to be, are set up on a 1 to 9 scale, the latter being the highest possible rating. The pattern has been for inflation to rise as rank increases. In a search for alternatives, authorities are considering something akin to the new OER program, featuring specific controls. But authorities say they plan to withhold action until they have had a chance to evaluate the outcome of the new officer project.

Hopes and Fears

The first inkling of how the new OER program actually affects promotions is due following the upcoming full-colonel's selection panel, slated to convene October 20. Lieutenant colonels received their first rating under the new program during the four-month cycle ending last March.

Numerous officers, of course, disagree with USAF's stand that a third box is competitive. One rater told AIR FORCE Magazine that the people he "reluctantly" gave third boxes to recently "feel their careers will be in jeopardy if they get another and are trying to transfer."

At least a few nonrated officers fear that in operational units rated officers will drag down all the top and second boxes. And some lieutenant colonels not yet eligible for full colonel claim that the top boxes are going primarily to those who will face the October 20 eagles board.

So far, no officer has received more than one rating under the new program, and some not yet their first. Authorities feel that eventually members will wind up with a variety of ratings such as 2-1-3, 1-3-2, over a three-year period. The truly outstanding person, who will undoubtedly receive straight "ones," should stand out like a beacon, something that seldom happened before.

Air Force earlier used mock promotion boards and made simulated selections to shake down the new process. Officials said these tests show that the new program makes "the decision process much easier."

What about a mix of "old" and "new" ratings? Won't that confuse promotion boards? Or result in the boards giving undue weight to the first new rating in the selection folders? These are just some of the questions officers are asking. Their doubts are understandable considering the disenchantment that surrounded former OER programs for so many years.

Hq. USAF, meantime, will monitor promotion board results intently, just as it is doing now with the actual rating process. These are ultrahigh priority projects for the next two years, Lt. Gen. Kenneth L. Tallman told AIR FORCE Magazine. He is the new Hq. USAF Deputy Chief of Staff for Personnel.

General Tallman and his associates are involved in a major effort to salvage a badly battered but vital personnel program affecting 100,000 persons. They know they're not going to win any popularity contests, for no new OER plan can attain broad acclaim; there are too few promotions to permit that.

But if the new venture can restore a fair measure of respect to the rating system, that's got to be a victory. ■

HALF EMPTY IS HALF FULL

The planes chosen to transport ROTC cadets on base visitations are often, I suspect, selected specifically according to their vintage or state of disrepair. Cadets, of course, are expected not to notice this. On one long flight, however, I could not help noticing that a heavy stream of oil kept flowing out of the engine, spreading across the wing, and dripping off into space. After fifteen minutes of watching the flow and becoming increasingly worried, I called the flight engineer and pointed to the oil-striped wing. My faith in aircraft maintenance then fell our full altitude when he smiled and said,

"Oh, good! That means we still *have* some!"

—Contributed by Cadet Lt. Col. Carol Willett, Det. 135, AFROTC, The Catholic University of America

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

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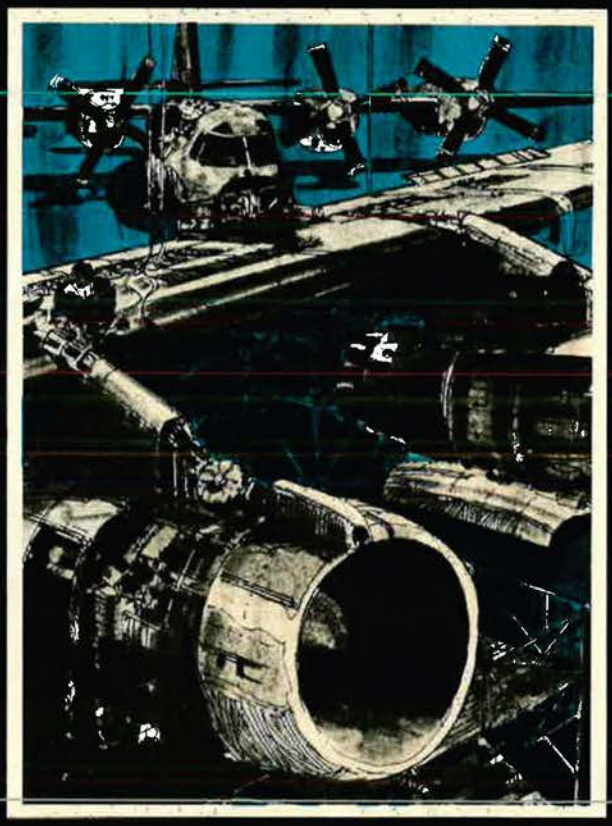

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With 14 divisions, subsidiaries and plants, experienced management, advanced technology and unlimited capability, we place our know-how at your service daily. ISRAEL AIRCRAFT INDUSTRIES, LTD., Ben Gurion International Airport, Israel. Also: New York ☐ London ☐ Paris.

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F-16: on target.

With Mach 2 speeds, plus outstanding acceleration and turn rates, it's vital for the U.S. Air Force F-16 to have a highly accurate and reliable inertial system.

Now General Dynamics has awarded a $1.5 million contract to Singer's Kearfott Division to develop the inertial navigation system for this maneuverable, lightweight fighter.

The precision system provides continuous knowledge of the aircraft's geographic position, velocity and heading. It contains a computer, miniaturized gimballed platform, control panel and display, and incorporates the latest state-of-the-art in integrated digital technology.

In keeping with the F-16 design to minimize life cycle cost, it is designed for high reliability and low operational cost.

Singer's Kearfott Division designs and produces advanced avionics systems and components for the aerospace industry and high-technology products for the commercial market. Major products range from inertial navigation equipment, Doppler radars and airborne computer/converter systems to microwave landing systems. For information, contact The Singer Company, Kearfott Division, 1150 McBride Avenue, Little Falls, N. J. 07424.

SINGER

AEROSPACE & MARINE SYSTEMS

In this excerpt from an address to the Retired Officers Association at Colorado Springs on July 3, the then Commander in Chief of NORAD made a point of prime importance to a combat-effective Air Force . . .

Management Is Not Command

BY GEN. LUCIUS D. CLAY, USAF

A MYTH has been conceived and is growing that management and command are synonymous.

They are not.

Devotees of the myth see management as a replacement for command. There is great danger in that concept.

Management has a proper place in the operation of a military service, but management must be recognized for what it is—a system of bookkeeping that is primarily associated with statistics.

Statistics are static. They can do nothing except provide a means of measuring monies expended against results gained.

Command is the relationship between people. People do things.

Therefore, very careful consideration must be given to the functions of *management* and of *command,* and the former must never be mistaken for the latter.

In my career, I have witnessed the growth of a system of panels, councils, review groups, and boards designed to give great visibility to management, and it is my personal observation that we are thwarting the true meaning of command.

Several years ago, while serving as the Air Force Deputy for Operations, I received an order from the Chief of Staff to direct the move of a tactical fighter squadron from its ZI base to Southeast Asia.

I consulted my operations management book, called TAC, and directed the move in accordance with the time frame stipulated for such a move.

Later in the day, the Chief asked if I had taken the action he directed.

I assured him that I had.

His comment was:

"Good—you're doing a great job."

I accepted the compliment, but the truth was that I hadn't done anything.

The men who had to exercise command were the ones with the problems.

The commanders of the TAC wing and squadron involved had to issue the orders, determine the variables bearing on human beings involved in the move, and ensure that the efforts of all elements of logistical support were coordinated.

Their experience, professional skill, and judgment would determine whether or not the move would be executed in an orderly and timely fashion.

The principles of management should be applied within certain constraints.

When God handed down the law to Moses, he placed great emphasis on what the people should not do. It would be difficult to improve on that pattern.

I can think of two "*thou-shalt-nots*" that are applicable.

1. Thou shalt not tell commanders how to do their jobs except in training situations.

2. Thou shalt not violate the organizational structure.

If you tell a commander what to do, he usually will get the job done, but if you tell him what to do and how to do it, you invariably confuse the issue.

We should give our commanders the sense of dignity that comes with an expression of confidence shown by the top echelon's ability to let them perform.

The story of the football coach, whose quarterback was not performing the way the coach thought he should, emphasizes this point.

During a losing game, the coach called the quarterback to the sidelines and said:

"It's now second down, and we're on our own ten-yard line. I want you to do exactly as I tell you for the next three plays.

"Run the ball on the next play, throw a pass on the third down, and punt on the fourth down."

The quarterback then followed his coach's instructions to the letter.

On the next play he carried the ball for a forty-yard gain.

On the second play he threw a pass, which was caught by the tight end who was tackled on the one-yard line.

The quarterback then punted the ball.

The coach ran on to the field screaming.

"What in hell were you thinking about?"

The quarterback replied:

"I was thinking I had a pretty stupid coach."

In the interest of a combat-effective Air Force—and defense establishment—let us not usurp the traditional functions of the commander under the banner of management.

There is work enough for both elements in our armed forces. ■

Gen. Lucius D. Clay, a graduate of the US Military Academy and, since October 1973, CINC of NORAD and Commander of ADCOM, retired on September 1, after more than thirty-three years of service, including assignments in SAC, TAC, Air University, the Air Staff, the Joint Staff, and as Commander of Seventh Air Force and PACAF.

September 1975. B-1 test program: Success, when America really needs it.

The B-1 is a U.S. Air Force manned strategic aircraft of significant importance to the future defense posture of this country. Currently, the B-1 is successfully undergoing one of the most comprehensive flight test programs ever designed for a military aircraft.

All of the tests in this unique Air Force/Contractor team flight test program are designed to prove that the B-1 can meet its operational requirements. The B-1 has already demonstrated: compatibility with the KC-135 aerial tanker; sustained supersonic flight at high altitudes; and heavy-weight takeoffs.

On the ground, Strategic Air Command crews are already learning to maintain the B-1. The second B-1 recently completed, ahead of schedule, a five month series of structural tests which verified engineering predictions on the strength of the airframe. The third B-1, which will be equipped with a full offensive avionics package, is nearing completion. Both will join the number one B-1 in the flight test program within a year.

The strong team of major contractors developing the B-1 with Rockwell International, under the direction of the U.S. Air Force, includes Boeing, General Electric and AIL Division of Cutler-Hammer.

The strategic deterrent ability of the B-1 is well recognized. It will have a life span of at least 25 years. It will excel in all other critical factors as well — quick reaction, high flyaway speed, supersonic flight, hardness to nuclear effects, near invisibility to enemy radar, increased payload and ability to penetrate. It will serve, without an attack commitment, as visible evidence of our national resolve.

Some 13 years of effort have gone into developing these capabilities. Since its inception in 1962, the aircraft has evolved through thousands of hours of study, design, development, review and testing. Wind tunnel testing alone has amounted to 20,000 hours.

This is just the start of a great history for the B-1.

This message is brought to you in behalf of more than 69,000 people and 5,000 suppliers who have taken part in the B-1 Program.

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Listed below are the Industrial Associates of the Air Force Association. Through this affiliation, these companies have tangibly indicated their readiness to participate as "Partners in Aerospace Power," in the interest of national security.

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While it is human nature to look nostalgically at "the good old days," there is no denying that the Air Force is now better geared to the problems of the day than ever before. One of its great accomplishments, to which all commands have contributed, is its ability to project airpower over great distances . . .

USAF: Global Mobility Means Global Utility

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

One sure sign of advancing age—there are too many such signs and, come to think of it, they are all sure—is a conviction that things used to be better. It is particularly easy to come to that conclusion these days, what with one thing and another. However, this is being written in the summertime, there is nothing we can do about it anyway, and there must be somewhere an exception to the rule that things were better then.

Happily, there is, and you need look no further than the Air Force. We can begin with the Military Airlift Command.

Air transport has been, since early in World War II, a pretty important mission for the Air Force, and it has been a well-managed one. But the evolution from ATC to MATS to MAC has been dynamic, and the present airlift generation is proof that airlift management has come a long way. The airplanes are bigger than they used to be, and the thinking has kept pace.

Essentially all the air transport now belongs to MAC—troop carrier as well as long-haul. There has been no degradation of the tactical airlift mission—it survives intact. But there is an opportunity for cross-training and greater concentration of resources on the priority job of the moment.

Then there is the matter of air-refueling of transports, an idea whose time has finally come. It is intriguing to think of the C-5A, old Fat Albert, that great aluminum cloud, hooked onto a tanker at 25,000 feet in lieu of a refueling stop. A high percentage of the C-5A crews are now qualified in air refueling, hitherto the exclusive province of bomber and fighter pilots.

The last time the Middle East blew up, the Portuguese, alone among the NATO allies, allowed us to use our base in the Azores. But that was several Portuguese governments ago, and it would be an optimistic planner indeed who put his continuing faith in the new rulers of Portugal. His hopes, maybe, but not his faith. Air refueling of transports might well save the day.

The whole concept of air refueling has become a basic, if not widely understood, factor in this country's ability to respond quickly to a crisis.

Air refueling has allowed a fighter wing in North Carolina, for instance, to be in Thailand, and operating, three days after an alerting order. It permits fighter units to deploy back and forth across the Atlantic the way we used to go on weekend cross countries. This tremendous worldwide mobility of our air-refueled tactical forces allows them, in fact, to lay claim to some of the more hallowed arguments in favor of aircraft carriers. Not all of the arguments—carriers remain a more visible way of showing the flag—but a great many of the military ones. The matter of freedom from bases, for instance. Air refueling has not obviated the need for bases, but it certainly widens the choice as to where they can be.

Radius of action has always been the determining factor in base locations. The radius, now, is pretty much what you want it to be. It is an increasingly important concept, both militarily and diplomatically, this ability to project airpower from great distances. It is a concept that is not yet understood or appreciated by a world that still thinks of land-based air forces as stuck on fixed bases. Hence, the diplomats in NATO could not be convinced, without understanding a great deal more than they now do about this modern Air Force of ours, that US-based airpower is less vulnerable and essentially just as responsive as European-based airpower.

The tanker force is managed, and superbly, by SAC for all the users. This is nothing new, but it is an expanding responsibility as the use of tankers grows.

There are other management changes under way, all reflecting the growing capability of the Air Force to operate easily over great distances. The proposed phase-out of PACAF in Hawaii simply reflects a fact of life: Oahu is no more central to matters in the Pacific, in terms of modern communications and air-refueled air forces, than Omaha, or Langley Air Force Base.

There are lots of other things going on all over the Air Force, and mainly they are good. Retention is sharply up at the Air Force Academy. The quality of the enlisted force has never been higher.

There are some problems here and there, and everything is not absolutely rosy. But, by and large, this Air Force today is better geared to the problems of the day than at any time in its history. ■

It took a lot of technology to change a name like United Aircraft.

Today, we're a multi-market company.
But one with the same dedication to the world of flight.

The name our company has borne since 1934 is hardly descriptive of the activities in which we are now engaged.

While our traditional aircraft and aerospace businesses continue to grow, we've tapped the vast technology bank that's evolved from these operations to enlarge the company's business base in industrial and commercial fields.

Through the selective exercise of our abilities and skills over a wide spectrum of high technologies, we're now a multi-market corporation. But one with the same solid, dependable virtues. A corporation with 1974 sales in excess of $3.3 billion, substantial financial strengths, a 39-year record of consecutive dividend payments, a truly international business with representation in some 120 countries of the world. And one that's a continuing major force in the world of flight.

We're also a corporation with a promising future. Because when all those technologies are United, there's no limit to our powers of invention. United Technologies Corporation, Hartford, Conn. 06101.

	1974	1964
Total Sales	$3,321,106,000	$1,235,918,000
Net Income	104,705,000	29,084,000
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Our Hamilton Standard Division provides the environmental control system for the 747 and is developing a life support system for the space shuttle orbiter.

The newest fighter to join the U.S. Air Force, the General Dynamics F-16 is powered by the F100 engine from Pratt & Whitney Aircraft.

Our Sikorsky Division is the pioneer in helicopter development for military, commercial and industrial use—with a notable list of "firsts" and more than 50 world records.

Two solid propellant rocket motors, manufactured by our Chemical Systems Division, provide the Air Force Titan III-C with 2.4 million pounds of initial thrust.

THUNDERBIRDS

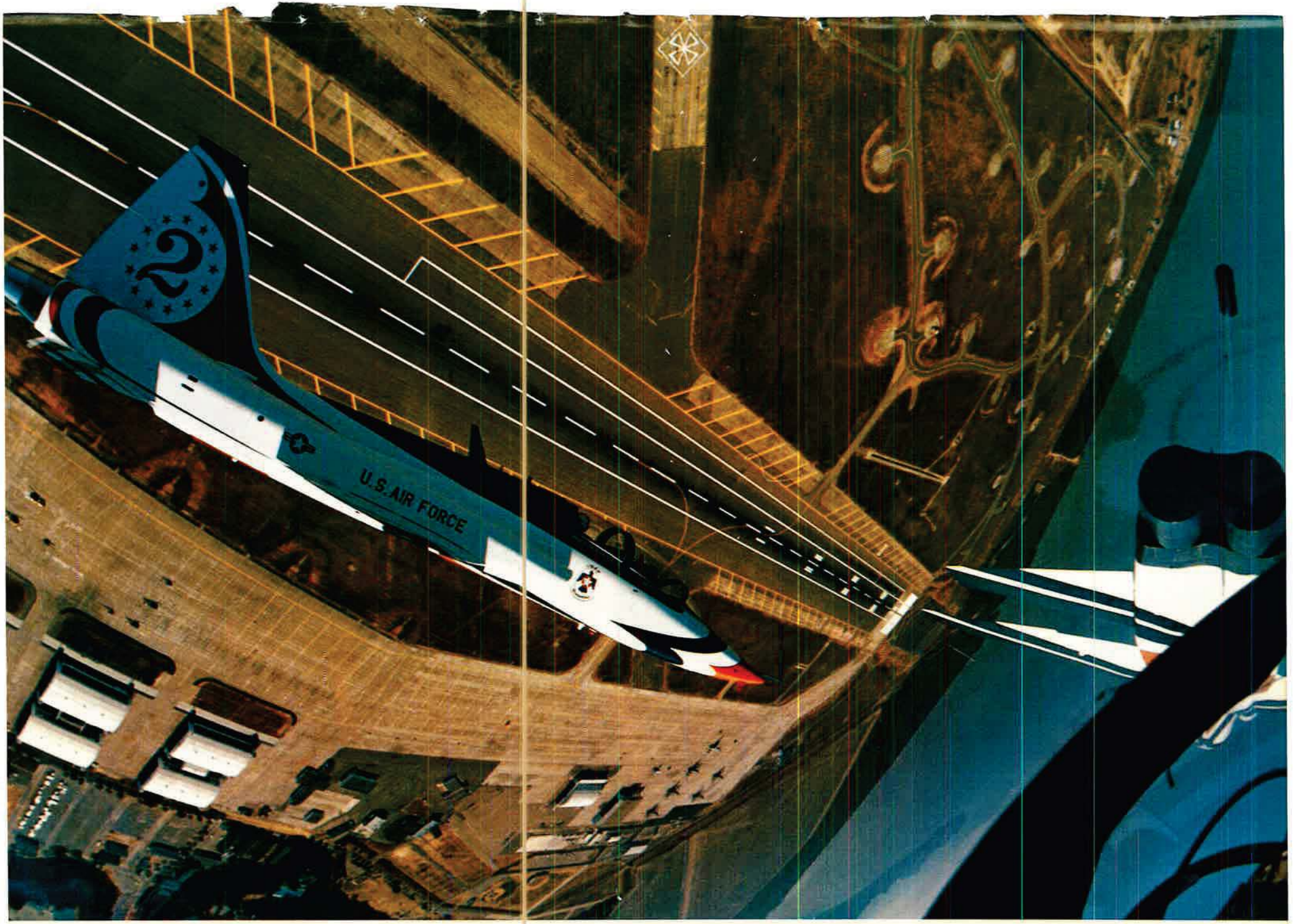
USAF's Ambassadors in Blue

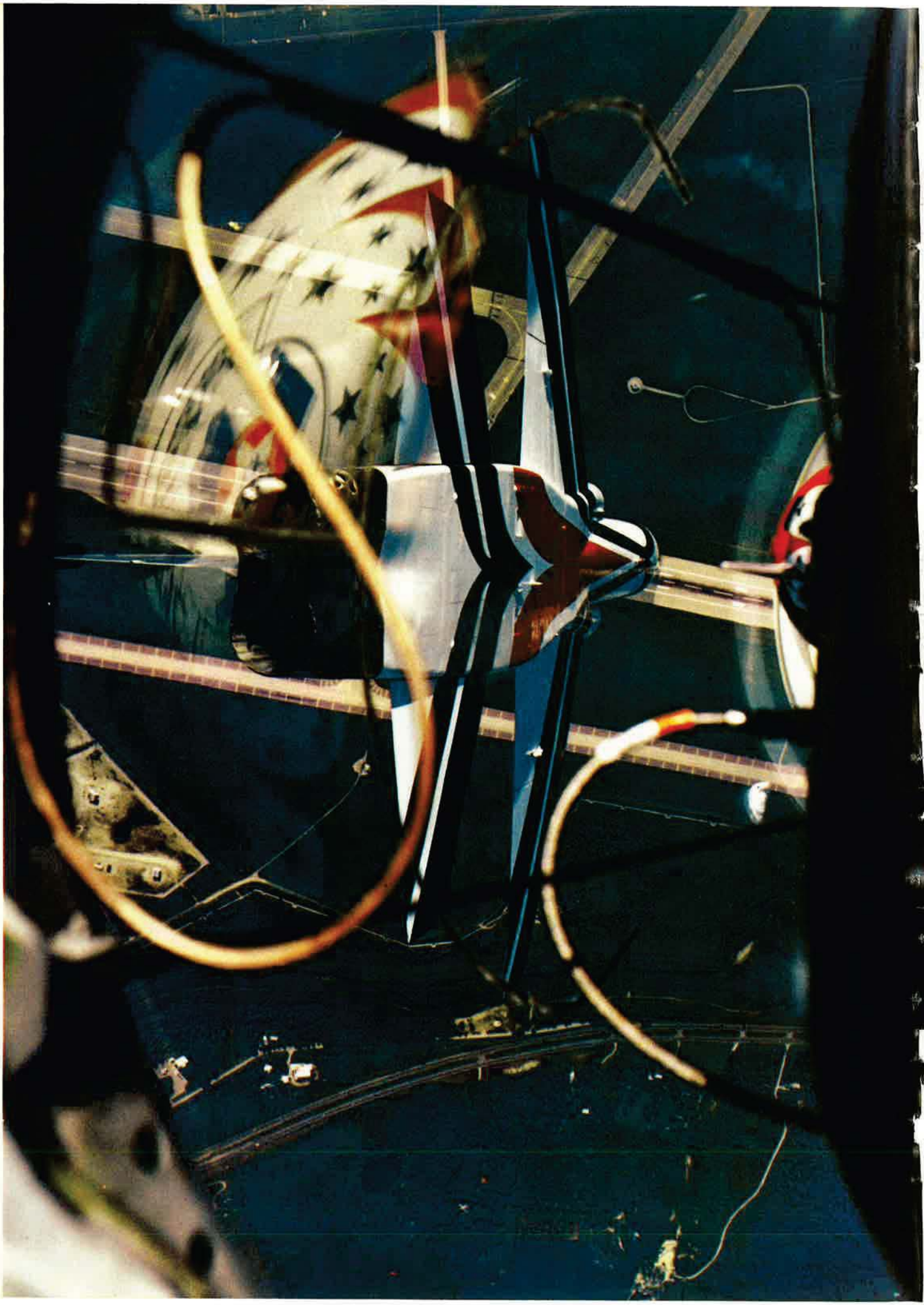
Photo Feature by SSgt. Henry Dutcher and Ken Hackman

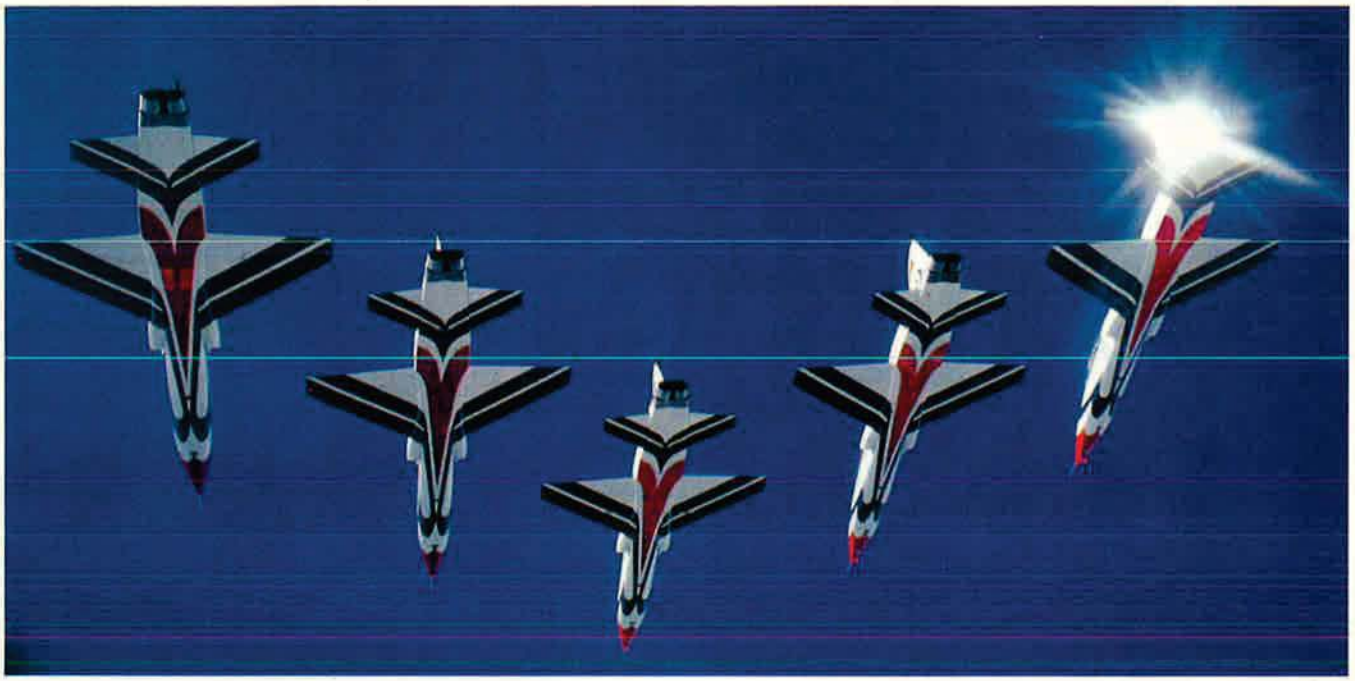
You can watch them a hundred times and every show is new. The raw power that hurls tons of metal through the air at near supersonic speed, the nuances of airmanship, the sheer beauty of maneuvers executed with mathematical precision blend into an emotional experience that is unsurpassed by any other show on earth or in the skies above. They are the Thunderbirds—the USAF Air Demonstration Squadron—a part of Tactical Air Command, based at Nellis AFB, Nev.

The Thunderbirds flew their first public demonstration on June 16, 1953. Now in their twenty-third year, the original team and its successors have displayed the quality of Air Force professionalism before 115 million people in all fifty states and forty-five foreign countries. The team, numbering ten officers and sixty-five NCOs, has flown seven different types of jet aircraft from the F-84 to the sleek Northrop T-38 shown here.

Commanded and led in the air by Maj. Chris Patterakis, the 1975 team of Vietnam combat veterans includes Capt. Gil Mook, Left Wing; Capt. Steve Mish, Right


U.S. AIR FORCE





Wing; Capt. Doug Roach, Slot; and Capt. Jim Simons, Solo. Working with them are Maj. Ray White, Logistics Officer; Capt. Lloyd Newton, Narrator; Capt. Bob Gore, Information Officer; Capt. Jim Bash, Maintenance Officer; and 1st Lt. George Mattingly, Executive Support Officer. SMSgt. F. A. Duke heads the sixty-five NCO specialists who keep the red, white, and blue T-38s in the air. Because of their competence and dedication, no demonstration has ever been canceled because of maintenance difficulties.

In addition to his assigned duties, every member of the squadron is a spokesman and ambassador for the Air Force, meeting thousands of people at air shows and civic functions.

Few are privileged to wear the Thunderbird patch. Still fewer have the skill or the opportunity to be part of a military jet demonstration team. For the rest of us, these pictures may capture in some small measure the essence of that experience. We offer them as a tribute to the seventy-five airmen of the Thunderbird squadron and to the great aerospace combat team they so ably represent—the United States Air Force. ■

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to pack the power of a big computer into a militarized microcomputer for our navigational guidance control system.*

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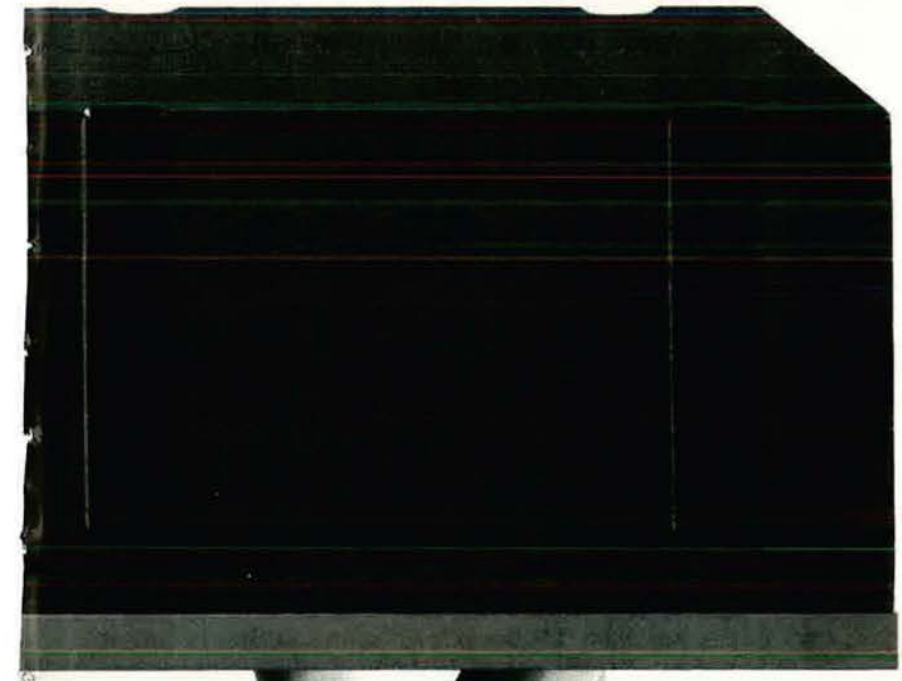

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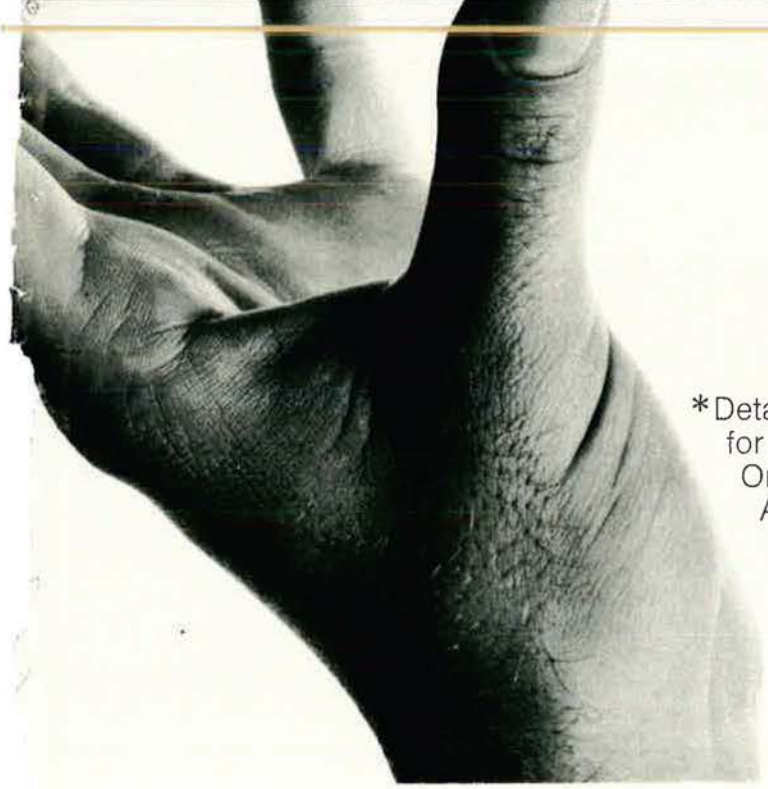
CDC can make its Model 469 Microcomputer in any of more than 200 different sizes from "off-the-shelf" components that meet military specification E 5400.



*Details on request. Call CDC collect (612) 853-7600 for **E-Systems, Inc.** Applications Summary. Or write Control Data Corporation, Box 1980, Airport Station, Minneapolis, MN 55111.

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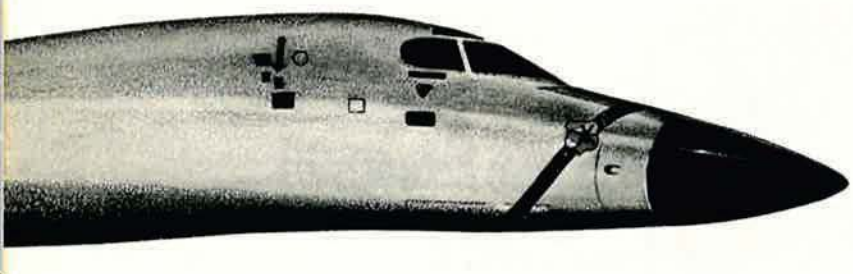
Visit our exhibit at AFA, Booth 134.

A report on the only "ALCM" that's flown over 150 missions.

From E-Systems, the inventor of TERCOM.



Our "air-launched cruise missile" is doing a lot of contour flying over the varied terrain of the Eastern U.S.

The "missile" is a TERCOM-equipped A-7 aircraft. It's been guided on more than 150 hands-off flights by the same TERCOM-aided system that will guide the Air Force's new ALCM.

The remarkable TERCOM (terrain contour matching) system is performing well within established requirement parameters.

TERCOM was conceived by E-Systems.

E-Systems is the only contractor that has a mature and flight-proved TERCOM technology. We've been developing the system for more than a decade.

The TERCOM concept was a natural for E-Systems. Our index of capabilities is a long one, as our Air Force track record shows. A few examples:

☐ Integration of communications and command and control systems into E-4A Advanced Airborne Command Post aircraft.

☐ Development of strategic airborne intelligence and reconnaissance systems for a variety of reconfigured aircraft.

☐ One of the world's most sophisticated programs for aircraft modification and overhaul. Of the 5,000 aircraft processed by E-Systems, more than 4,000 of them have been for the United States Air Force.

E-Systems turns technology into systems that work. TERCOM-aided guidance for the ALCM is a perfect example. E-Systems, Inc., P.O. Box 6030, Dallas, Texas 75222.

E-SYSTEMS

We solve problems...systematically.

Choice of weapons, adequacy of caliber, and the role of rifles and pistols in the modern Air Force are all part of the continuing debate about . . .

The Arme

BY MAJ. JOHN T. CORRELL, USAF

ALMOST as soon as warfare took to the skies in the early days of this century, it was apparent that something more than the ground soldier's basic tools—the rifle and the pistol—would be needed.

Small arms had their moments, of course. A British aviator downed a German airplane with a shotgun during World War I, and American flyers rigged their .45 automatics with little wire cages to keep the spent cartridges from rattling around the cockpit as they ejected.

Eventually, both sides found a way to make a machine gun fire between the blades of a spinning propeller, and as far as airmen were concerned, small arms were relegated to a supporting role, and a minor one at that.

Sixty years later, the topic of small arms in the Air Force can still start an argument.

The emphasis placed on marksmanship by the Air Force has waxed and waned. The most recent change was in 1972, when yearly qualification on the firing range was dropped for all except those whose duties require them to carry arms.

Also at issue from time to time have been the Air Force's choices of the M-16 assault rifle and the .38 Special revolver as its standard weapons. It has been argued that both are of insufficient caliber. Moreover, the M-16 is still living down a bad reputation hung on it in the late 1960s. As for the revolver, some feel that the Air Force should use automatic pistols instead, as most other military forces of the world do.

The M-16 assault rifle, adopted by USAF in the early 1960s, is an excellent weapon for Security Policemen.

Ups and Downs of USAF Marksmanship

When the Air Force became a separate service in 1947, it had little interest in small-arms

d Airman

marksmanship. Two years later, though, the Air Force was the service in control of the Philippine archipelago at the time of the Hukbalahap uprising, and found that it needed trained marksmen for security. Experience in the Korean War also pointed toward a requirement that officers and airmen be able to handle weapons.

In 1957, Gen. Curtis LeMay, then Vice Chief of Staff, directed that air policemen and aircrew members "achieve a realistic degree of proficiency" with firearms, and that marksmanship be improved for all Air Force people. When he became Chief of Staff, General LeMay told major commands to qualify all their people at least at the marksman level, and special category people at the sharpshooter level.

It was during these years of heavy emphasis on small arms that the Air Force forsook the Army .45 automatic for the .38 revolver, adopted the M-16—more than a year before the Army did—and revised its training program to more closely approximate combat shooting.

When I first fired on a military range in the summer of 1962, the Air Force was still teaching the old "offhand" competition match style. We squared up sideways to our bull's-eye targets, put our left hands into our pockets, breathed in, slowly raised our pistols, and squeezed off our shots. Nobody seemed to shoot very well that way. It didn't apply directly to combat shooting, either.

The new style, which arrived shortly thereafter, was much better. This course had been developed by the Air Force, and resembled the FBI Practical Pistol Course. It featured a two-handed grip, shooting from prone, crouched, and standing positions, and man-shaped silhouette targets instead of bull's-eyes. The first time out, most of us got all fifty rounds on our silhouettes, and my entire class qualified for marksmanship ribbons—except for one rheumy-eyed old major, who may have been sick that day.

Certain categories of shooters now train under stress conditions. OSI agents, for example, shoot a sequence after doing ten pushups and running in place for a minute and a half. Thus, they are prepared to shoot accurately after a chase.

Up to 1972, all officers and airmen, except for women, chaplains, and other noncombatants, had to qualify regularly with rifles or pistols. Present rules are that all newcomers to the Air Force—again, noncombatants excepted—will be trained with firearms once, but after that, only those whose duties require them to carry weapons need qualify annually.

This change was welcomed by many, who had all along questioned the sense of making clerks prove themselves marksmen each year. Others, though, hold to the idea that officers and airmen are military members first, and one of the things that military people ought to do is stay proficient with weapons.

Handguns: .38 versus .45

Aircrews carried their .38s into combat in Southeast Asia, but search and rescue efforts were so good that there was hardly need to use them. As one pilot puts it, "It was considered better to hide and wait for a helicopter pickup than to try to walk through the midst of them. The old guys frequently cautioned the gunslingers that it was unhealthy to try a John Wayne shootout under such odds."

The weapon seen most often around the Air Force today is the Smith & Wesson Model 15, the "Combat Masterpiece," chambered for .38 Special caliber. Security policemen carry it, as do combat aircrews and missile crews. Air Force OSI agents use a handgun built especially for them, the Smith & Wesson Model 36 with a three-inch barrel.

"The purpose of a military handgun," says

—USAF Photo by MSgt. Eddie McCrossan

Security Police trainees at Lackland AFB, Tex., demonstrate the two-handed grip that lets the shooter hold his weapon steady on the target.

one writer, reflecting the accepted opinion on the subject, "is individual defense. No modern handgun ever won a war or even influenced the decision in a tactical battle."

That is generally true. Military pistols had their heyday more than 100 years ago, when horse cavalrymen found them far superior to sabers. But a handgun did affect the outcome of at least one modern battle, on October 7, 1918, when Cpl. Alvin C. York's company found itself badly outnumbered during the Meuse-Argonne offensive. York, a Tennessee sharpshooter, picked off Germans with his Enfield rifle until its magazine was almost empty. Then, with the enemy charging, he drew his .45-caliber pistol and felled seven Germans with seven shots. Dumbfounded by such shooting, the Germans began to surrender. York and his seven unwounded doughboys marched to the rear with 132 prisoners.

The weapon that Corporal York used was a 1911 Colt .45 automatic, the same one that, with minor modifications, the Army still uses today.

A great many people swear by the old Colt. It holds seven cartridges to the revolver's six. It shoots faster, once the first round is in the chamber, and can be reloaded quickly by pressing a fresh clip into the butt.

The revolver has advantages, too. It is safer, since its cartridges are exposed and one can tell at a glance whether it is loaded. Since it operates mechanically, it is more reliable than an automatic, which uses "blowback" of expanding gases from a fired round to chamber the next. The revolver is also faster to the first shot, unless the automatic is being carried with a live round in the chamber, hammer cocked, and safety on. If the automatic is being carried the standard military way, though, the shooter must hold the pistol with his right hand and pull the slide back with his left to chamber a round before raising his weapon to shoot.

The really important differences, however, have to do with the size of bullet and the comparative shootability of the two guns. The Colt .45 throws an impressively large slug and, in the hands of an expert, groups its shots nicely at fifty feet or more. On the other hand, it has legions of detractors who claim that it is impossible for them to hit a blessed thing with it. The revolver is easier to shoot, especially if fired single action (that is, cocking the hammer and pulling the trigger in separate motions).

Nobody disputes that the bigger bullet is more lethal, but the Air Force comes down on the side of safety and shootability. A .38 round that hits is superior to one of any size that

The author, Maj. John T. Correll, completed an AFIT Education With Industry tour at AIR FORCE *Magazine in 1972. For the past three years, he has been editor of AIRMAN, official magazine of the Air Force. He began Air Command and Staff College at Maxwell AFB, Ala., in August.*

doesn't. Besides, the .38 Special isn't all that puny. In some recent tests with commercial ammunition, .38 bullets penetrated five one-inch boards and dented a sixth. The revolver is also lighter than the automatic, costs less, and ammunition is a good deal cheaper.

Demise of the Big Rifles

Questions about the adequacy of the round also figured in the stormy welcome the M-16 rifle got at first. Some critics labeled it a "varmint gun" because its bore (5.56 mm, or .223 caliber) was the smallest in history for a standard US military rifle.

Previous military rifles were all of big caliber, .45 and up in the old black powder days, settling down to .30-caliber (30-40 Krag) around the turn of the century, after the advent of modern smokeless powder. It was superseded by the famous .30-06 Springfield.

The Garand M-1 used in World War II and Korea was a heavy .30-caliber, and its successor, the Army's M-14, was only a pound lighter and fired a 7.62 mm NATO cartridge. The Air Force had never adopted the M-14, and was still using large numbers of the old M-1 carbines in the late 1950s. The carbine was an altogether different weapon from the M-1 rifle, and its light .30-caliber round was almost universally regarded as inadequate in power. Now, the Air Force was introducing a rifle of smaller caliber still.

Actually, the idea was not all that radical. Submachine guns, like the US Thompson and the "grease gun," had been around for some time, but these were chambered for pistol ammunition, and could not be classed as service rifles. The Germans had been the first to break with the big rifle/big cartridge concept, introducing their MP 43-44 series of machine carbines during World War II. After analyzing the average range of combat rifle fire and the marksmanship of the average soldier, they concluded that an intermediate-size cartridge would be enough, and that it could be shot from a short, light rifle with lessened recoil. Ammunition would be significantly cheaper, and soldiers could carry more of it.

The Germans called their new weapons "assault rifles," and most standard military rifles of today—the M-16, the Soviet AK-47, and the widely used Belgian FAL—bear strong resemblance to them. All are characterized by intermediate-caliber ammunition, lightness, short length, elevated line of sight, straight stocks, selective rate of fire, and comparatively short effective range.

While the 5.56 mm approximates the caliber of a .22, it fits into a necked-down center-fire cartridge casing that holds twenty-five grains of powder.

USAF Adopts the M-16

What the M-16 had going for it, and what showed up in the Air Force tests of the early 1960s, was the spectacular effect of the projectile, fired at superhigh velocity. The little 5.56 came charging out of the barrel at 3,250 feet per second (as compared to 2,800 fps for the M-1 and M-14, 1,950 fps for the M-1 carbine, and 2,330 fps for the AK-47). The bigger bullets of the other weapons had more energy on impact, but they tended to punch clean holes in their targets and pass on through. In the case of the lightweight 5.56, on the other hand, any contact—a bush, a tree, or the target itself—

The Colt .45 automatic, one of the truly classic handguns, was long the standard US military sidearm. Many, however, find the revolver much easier to shoot.

was just enough to set it tumbling and tearing.

"With a heavier projectile like the 7.62 mm, you have a loss of velocity and shocking power," says Maj. Eric Nilson, USAF's functional manager for small-arms training. Major Nilson, now assigned to DCS/Personnel's Specialist Training Branch in the Pentagon, was involved with the original testing of the M-16 years ago. "You can fill an ammunition can three-quarters full of water, lock the top, and shoot at it from twenty yards. A .30-caliber carbine or 7.62-mm round will go right through and the water runs out. If you do the same thing with an M-16, the small projectile fired at high velocity will blow the top off, sever the hinge, and literally destroy the can. In a short-range combat situation, the sudden shock by the high-velocity 5.56 mm is lethal."

Admittedly, the M-16 isn't in the same league with a Sharps buffalo gun for accuracy. But in Korea, when US troops were using the M-1, they shot off an astounding 77,000 rounds per every enemy casualty, according to Major Nilson. That alone is enough to suggest that a standard issue rifle ought to be designed with something besides individual long-range sharpshooting in mind.

The M-16, originally known as the AR-15, was developed by Fairchild's Armalite Division in response to Army specifications. The Air Force adopted it before the Army did, though, purchasing 8,500 for base security forces in the spring of 1962. The Army bought 104,000 the following year and went on to make the M-16 its standard weapon in Vietnam, where it seemed especially suited for jungle fighting. The Marines converted to the M-16 in 1967.

Shortly thereafter, reports began filtering back from Vietnam that the M-16 was jamming in firefights. Amid accusations and congressional investigations, the main problem was traced to the M-16's need for frequent and careful cleaning. Somehow, it had been put into the troops' hands with erroneous information that an occasional, simple cleaning would do. Adequate cleaning, along with the working out of a few, final bugs, soon removed all doubts about the M-16 among firearms experts. The controversy, however, had left a smudge on the M-16's reputation, and it still lingers in the minds of many today.

The M-16 proved an excellent weapon for the Air Force in the hands of Security Policemen, combat control teams, and other troops, such as RED HORSE engineer construction units, who had to supply their own protection.

It was used for unusual purposes, too. On the afternoon of February 24, 1967, near Di Linh, South Vietnam, Capt. Hillard A. Wilbanks, an Air Force FAC, stuck an M-16 out the window of his O-1E Bird Dog and made three "strafing" passes with it, keeping the Viet Cong off a South Vietnamese platoon until a gunship could arrive. Captain Wilbanks was shot down on his final pass, and was posthumously awarded the Medal of Honor.

No Big Changes Ahead

For the foreseeable future, Air Force thinking about small arms is likely to center on ammunition and training rather than on weapons.

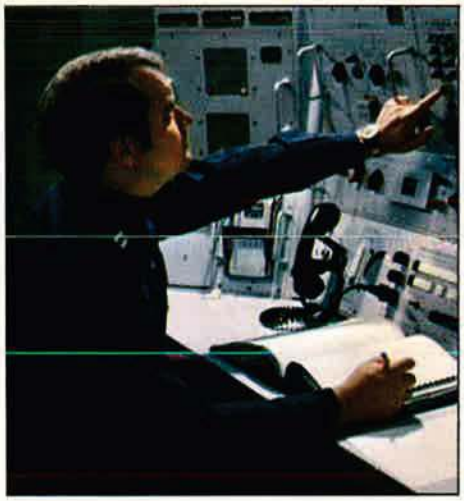
A brand-new .38 Special pistol cartridge, developed by the Army especially for the Air Force, is already in production and will enter combat stocks soon. Like the old round, it has a 130-grain, fully jacketed slug, and there is no change in the case or the primer. It will, however, eliminate problems of incomplete burning of powder that periodically cropped up with the old round. The Army developed a new propellant, used more of it, and reduced the airspace in the cartridge. The new round is a hot one, with a muzzle velocity of 960 feet per second, compared to 750 fps in the existing cartridge.

There is already talk that the improved Air Force round will become the Defense Department standard for .38 Special caliber pistols. USAF is also investigating a low-cost training round, perhaps with a bullet as light as ninety grains. If one can be developed, keeping the shooting characteristics of the combat round, then realistic handgun training will be possible at a greatly reduced cost.

The M-16 and the 5.56 mm are likely in for further debate as NATO begins evaluating weapons and cartridges to determine if it should keep the 7.62 mm as its standard or go to something else. All NATO countries have been asked to submit sample weapons and rounds. The Army will decide on the US entry, but the M-16 and some version of the 5.56 mm seem most probable.

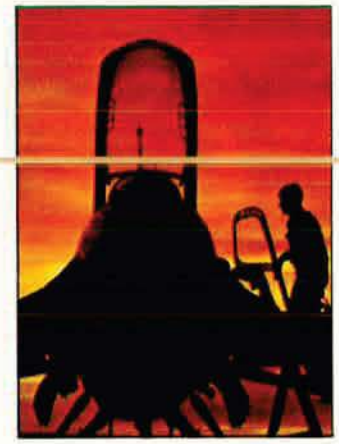
As for the Air Force, it is well satisfied with its choice of weapons, the course of fire it has developed to train its people in their use, and the cartridge improvements already under way. It has no big changes on the horizon.

If there is to come a time when rifles and pistols are an anachronism in the Air Force, it is not yet. So long as Air Force people face the potential risk of proximity to enemies and adversaries, the day of the personal weapon and the armed airman will not be entirely over. ■



Hardware & Software Go Nowhere Without People.

THE AIR FORCE IS LOOKING FOR GOOD PEOPLE AND YOU'RE IN A GOOD POSITION TO HELP.



It would be difficult to find more advanced and sophisticated equipment than that used by the US Air Force. F-15. F-16. SR-71. Jet engines. Navigational equipment. Radar. Cargo Handling equipment. Computer and Scientific Technology. Just to mention a few.

But behind that equipment, both hardware and software, are people. Quality people who collectively make the Air Force the great service it is.

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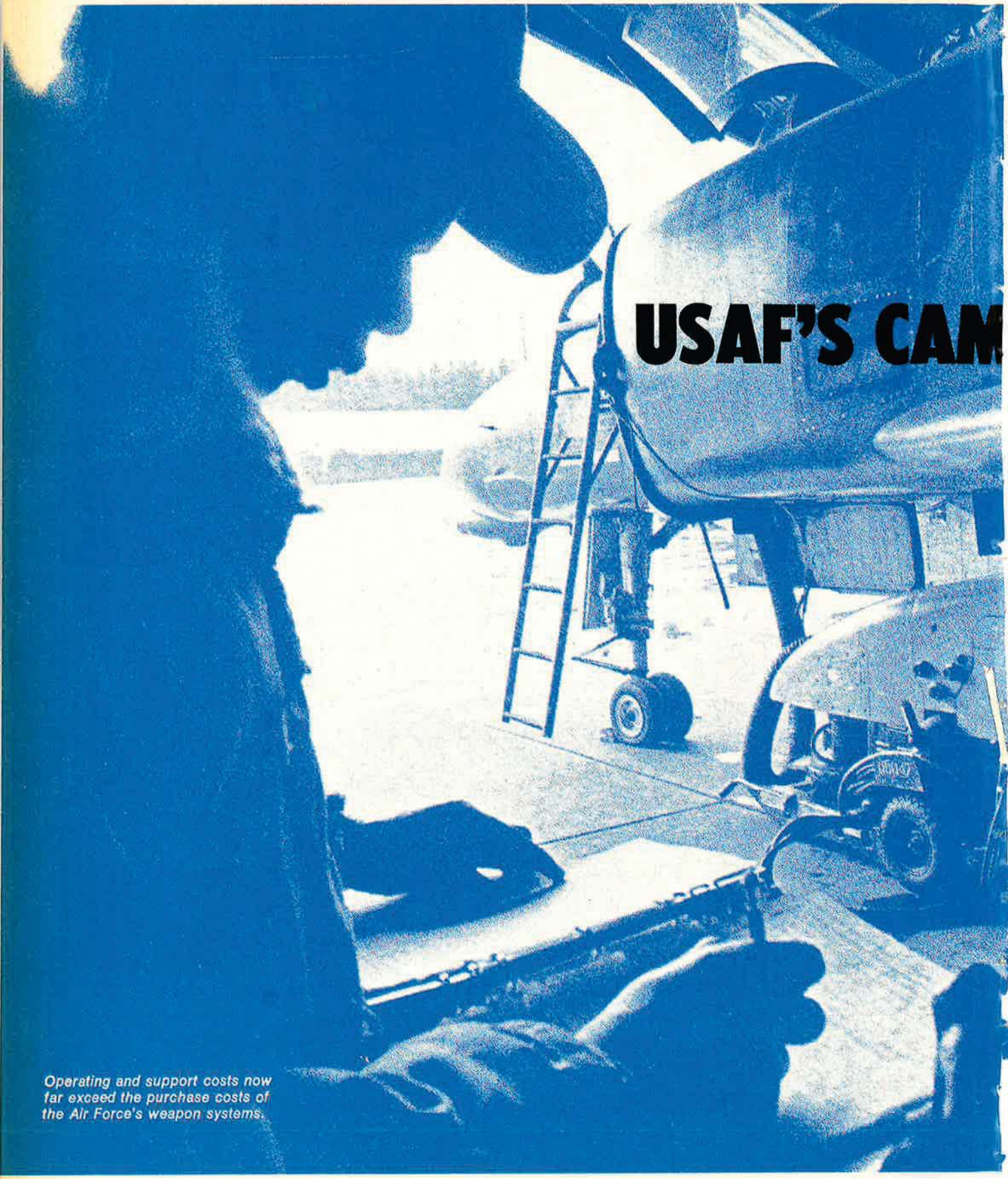


Operating and support costs now far exceed the purchase costs of the Air Force's weapon systems.

Trends in Systems and Logistics Symposium

The many and varied issues that determine how much it costs to buy, operate, and maintain weapon systems came in for perceptive and illuminating examination at a noteworthy symposium on ownership costs, attended by aerospace industry leaders from around the country . . .

PAIGN TO CUT LOGISTICS COSTS

BY EDGAR ULSAMER, SENIOR EDITOR, AIR FORCE MAGAZINE

THE problem posed was tough: Purchasing power is down, operating and maintenance (O&M) costs are shooting up toward the breaking point, and the Air Force is caught in an economic vortex "where less keeps costing us more."

The message came across loud and clear: Finding effective antidotes is the commanding priority of both the Air Force and the aerospace industry.

The audience learned two central facts: Long-term ownership costs, rather than one-time acquisition costs, are DoD's and USAF's new standard measure for buying and maintaining systems, subsystems, and components. The principal means for controlling ownership costs is LCC—Life-Cycle Costing.

The medium for getting the Air Force message across to industry was a symposium on "Trends in Systems and Logistics," sponsored by the Ohio State Air Force Association and the Dayton Chapter of the National Security Industrial Association (NSIA), at Wright-Patterson AFB, Ohio, on June 24. The audience of more than 500 included aerospace industry leaders from around the country.

Gen. William V. McBride, Commander of the Air Force Logistics Command (appointed USAF Vice Chief of Staff since then), brought out the central statistic behind LCC, the severe shift in R&D and acquisition costs vs. operating and support costs, which has almost reversed a 65–35 relationship to a "near 30–70" ratio over the past twenty years. By way of specifics, General McBride cited the B-52, whose aggregate O&M costs by 1970 had exceeded its 1962 acquisition costs, and "each dollar we have put in since then has added to the disparity." Similarly, depot maintenance costs per flying hour for such aircraft as the C-130, F-4, and B-52D have experienced increases that range from double to more than three times the level of 1968.

Keynoter of the symposium was Air Force Under Secretary James W. Plummer, who reported on Air Force tools to achieve both performance and "affordability" in weapon systems. Chronologically, these start with the "venerable" concept of "try-before-buy," using advanced development and preproduction prototypes built, "whenever practical," by two or more companies. Advanced development prototypes, Secretary Plummer pointed out, create research and development options at "relatively low cost," help maintain the nation's technology base, and demonstrate "feasibility, utility, and cost."

Although prototyping is a form of early testing, it must be followed by more rigorous test and evaluation procedures, according to Mr. Plummer: Development test and evaluation (DT&E), which takes place prior to full-scale development, and operational test and evaluation (OT&E), conducted independently and realistically by AFTEC, the Air Force Test and Evaluation Center at Kirtland AFB, N. M. *(see June '75 issue, p. 49).*

Enhancing the effectiveness of Air Force testing, he said, is an increase in multiservice test programs. The close air support capabilities of the A-7 and the A-10 were examined in recently completed joint tests with the Army,

Gen. William V. McBride, then AFLC Commander, at the podium.

Under Secretary James W. Plummer was the event's keynoter.

The audience of more than 500 asked a series of hard-hitting questions and found that USAF managers are thoroughly committed to LCC.

and next year, "we are planning to start two joint tests with the Navy on the instrumented range at Nellis AFB, Nev. One is an air combat evaluation . . . of multiple engagements between F-4s and simulated threat aircraft, the F-5Es. The second is an air-intercept missile evaluation . . . to define the technical characteristics required for a future short-range, air-to-air missile for the F-15, F-14, and the new Air Combat Fighters." Other improvements in testing are based on advances in instrumentation typified by the Air Combat Maneuvering Instrumentation System, Mr. Plummer said.

Design to Cost Policy

In use for years by commercial purchasers, "design to cost" is now a standard for all major Air Force and DoD systems and represents a "first step toward achieving affordability," Secretary Plummer said. A deterrent to unwarranted overruns and "gold plating" through the systematic examination of trade-offs among performance, cost, and schedule factors, "design to cost" entails setting a unit flyaway cost goal by the time a system enters full-scale development. Cautioning that "design to cost," of itself, is no panacea and that it is "certainly difficult to make it work," he nevertheless underscored its substantial potential advantages, especially in combating cost overruns, the cause for major past criticism of Air Force management.

Life-Cycle Costing

The techniques of "try-before-buy," development and operational testing, and "design to cost" must be combined with and balanced by the paramount consideration of how much it will cost to own, man, and maintain a new weapon system over its life cycle. Secretary Plummer pointed out that "systems that are inexpensive to procure, but very expensive to operate, are not desirable. Overemphasizing low procurement costs could lead to systems that fail too often or are too expensive to inspect and repair." Life-cycle costing, Secretary Plummer announced, will be used by the

"Systems that are inexpensive to procure, but very expensive to operate, are not desirable."

Air Force as a key criterion "in all phases of the acquisition process. In the conceptual phase, it will help us select among alternatives. In the validation phase, it will help us verify our concept. In competitive development, it will be a factor in the source selection."

The new costing policy, he explained, will be applied in the following manner:

"First, we will ask contractors to predict the logistic performance of their equipment *in the field.*" These predictions will be incorporated "into the specifications" and linked to incentives for meeting them during the full-scale development phase. "In the production contract, we will include warranties and guarantees for field reliability and performance. We may use two producers to maintain competition and motivation. Also in the contract, we will provide for measuring logistics performance." The Air Force, Secretary Plummer stressed, "will share any savings with the contractor or hold him responsible for any shortcomings."

LCC is being applied on the component, subsystem, and system levels. In the case of aircraft tires, he said, the Air Force is now using the "criterion of least cost per landing," rather than least initial procurement cost, thus increasing the number of landings per tire for the F-4 from "fourteen to forty-nine and for the C-141 from 200 to nearly 600. We estimate our savings on aircraft tires to be over $10 million per year."

In the area of subsystems, he cited the example of the ARC-164 airborne UHF radio, the Air Force's new standard UHF radio, that is to reduce mean time between failures (MTBF) from the present average of between thirty and fifty hours to more than 1,000 hours and to improve logistics costs correspondingly. The new system, he said, will be field-tested in various commands and aircraft and provide LCC incentives reaching "plus or minus twenty-five percent." The ARC-164 contract, according to General McBride, includes a "specified acquisition cost-sharing ratio based upon the results of a rigorous, operational verification test program. Should the contractor fail to meet his bid MTBF, the government—in lieu of accepting dollars—may at the discretion of the contracting officer accept additional radios at no cost."

The A-10 close air support aircraft, General McBride told the symposium, was the first major system acquisition program incorporating LCC. The contractors' predictions about support costs are being verified during the first 5,000 hours of operational flying, he said, adding that if these costs turn out to be lower than forecast, Fairchild Industries, the prime contractor, and GE, the engine manufacturer, combined become "eligible for an award fee of up to $3.5 million."

The F-16 Air Combat Fighter program represents the most ambitious application of LCC to date, using a "positive" incentive award for better-than-predicted support costs that may go as high as $8.4 million. But in addition, General McBride said, "and this is where we have added the stick along with the carrot, if the field verification test indicates that support costs are more than twenty-five percent

Assistant Secretary Frank A. Shrontz during his presentation.

AFA's Executive Director James H. Straubel acted as moderator.

Maj. Gen. Eugene L. Hudson, head of logistics plans and programs.

greater than predicted for a selected group of high-burner components, the contractor must propose and incorporate a corrective fix." (Secretary Plummer explained that the Air Force identified eight of the F-16's more than 300 subsystems as "high burners," meaning prone to incur high support and maintenance costs.)

The F-16 contract also contains options involving reliability improvement warranties (RIW) covering high-burner subsystems. Adopted from the "failure-free warranties" used by commercial airlines, the RIW option, if exercised for selected F-16 components, means "the contractor will repair or replace any failed units of that item at his expense, for a period of four years, at an already established price. Also included in the RIW option is a further provision . . . for contractor guarantees of increasing reliability to be demonstrated over the warranty period," according to General McBride. The RIW options concentrate especially on avionics, which, as they become more complex, "generally become less reliable," Secretary Plummer said.

Caveats About Life-Cycle Costing

The Air Force's Assistant Secretary for Systems and Logistics, Frank A. Shrontz, discussed potential problem areas associated with Life-Cycle Costing, stressing that "both the annual funding approach and our general concern for current budgets make near-term cost trade-offs for future savings difficult." Further, "without an adequate data base, it is difficult, if not impossible, for a contractor to evaluate the impact of design decisions on support costs. In fact, this is one problem that causes many people in industry and in government to shy away from full support of Life-Cycle Costing," Secretary Shrontz said.

Other problems associated with LCC, he said, stem from the fact that "absolute measurement" of a contractor's support-cost performance is possible only long after the production contract is completed and that this performance will be decisively influenced by the actual operating environment in which a weapon system will be used—something the Air Force can't predict with "great accuracy." These reservations notwithstanding, Secretary Shrontz holds that the designer of a system is the best authority for predicting support costs and that a "reasonable measure of responsibility must rest with him."

Pledging an open mind and willingness to apply LCC in a flexible manner on the part of the Air Force, Secretary Shrontz said, "This business of procurement is extremely complex, so that motivation is not going to work with a single set of contract incentives or contract practices but with a tailored approach, which points the contractor in the right direction and then lets him do a job."

Avoiding Maintenance Overkill

Maintenance makes up a large portion of life-cycle costs and is the subject of a critical USAF review called the Maintenance Posture Improvement Program (MPIP), Maj. Gen. Eugene L. Hudson, Hq. USAF's Director of Logistics Plans and Programs, told the symposium. MPIP found that some prescribed base-level inspections of combat aircraft, such as the F-4 and B-52, "were not required or the interval between inspections was too short." By stretching the inspection interval of F-4s and reducing the number of items to be inspected, as recently agreed to by TAC and AFLC experts, he said, the Air Force can add the equivalent of about fifty F-4s to its operationally ready inventory.

Similar steps are being taken by the Air Force, in concert with Boeing, to reduce base-level inspection frequencies of the B-52, General Hudson said. A recent Rand analysis showed that "maintenance both fixes and 'breaks' aircraft," with faulty maintenance, in the case of one sample, being responsible for about thirty percent of the defects found on the inspected aircraft. "The net result of all this duplicative, unessential, and sometimes harmful maintenance is not only an unnecessary expenditure of resources, but a drawdown on the operational force," General Hudson said. New Air Force maintenance procedures will eliminate inspection redundancies, he explained.

Trends in Systems Acquisitions

Trends in systems acquisition management, AFSC Commander Gen. Samuel C. Phillips told the symposium, "are all uphill, with the slope increasing. Not only do we have fewer men, a depreciated dollar, and an urgent need to husband our natural resources; we are also faced with adversaries who are showing increasing technical competence." The Command's response is a broad cost-cutting campaign with emphasis on lowering production and manufacturing costs: "At Systems Command headquar-

The new watchwords, operational suitability and logistics supportability.

ters, we have reorganized to give more emphasis to the management of production. We are increasing our training programs and are making production a separate Air Force career field, like engineering, procurement, and program management."

Among the first payoffs of this reorientation is a new forging technique, that, in one case, cuts the waste of steel more than fourfold. The Command is also pioneering manufacturing techniques that improve life-cycle costs through increased reliability, longer life, and easier maintenance, General Phillips said. A computer-aided manufacturing facility may soon be installed in an "Air Force plant," to be followed by computer-aided design systems, according to the AFSC Commander.

Contractors' overhead and military specifications and standards are being reexamined critically and offer potential economies across the board, General Phillips said. AFSC is emphasizing standardization of subsystems, such as avionics, to reverse "continued proliferation of ground support, aeronautical, and avionics equipment," according to General Phillips.

The AFSC Commander presented a direct challenge to the aerospace industry regarding hardware reliability: "You in industry must recognize that the equipment you develop and produce for us will be operated, maintained, and supported in the real world of military operations. Our pilots have other things to worry about than the tender, loving care of fragile electronic equipment; our maintenance personnel do not have the background of your graduate engineers; and the . . . results of a repair-level analysis are sometimes ignored under the pressures of military commitments."

Try-Before-Buy Testing

The better "operational suitability" and "logistics supportability" are known *before* the Air Force and DoD make production decisions, the higher the credibility of life-cycle cost predictions, Lt. Gen. Wm. J. Evans, USAF's Deputy Chief of Staff for R&D (named to succeed General Phillips as AFSC Commander upon the latter's retirement on September 1, 1975), told the symposium. The only way to find out whether a new weapon can do its job with the predicted reliability, maintainability, and economy is through stringent and realistic "front-end testing," he said: "We want all combat systems to be tested, not only in realistic atmospheric environments, subject to the same range of humidity, shock, vibration, temperature, cycling, and so forth, to which they will be later exposed, but also in a realistic, combat-like threat environment."

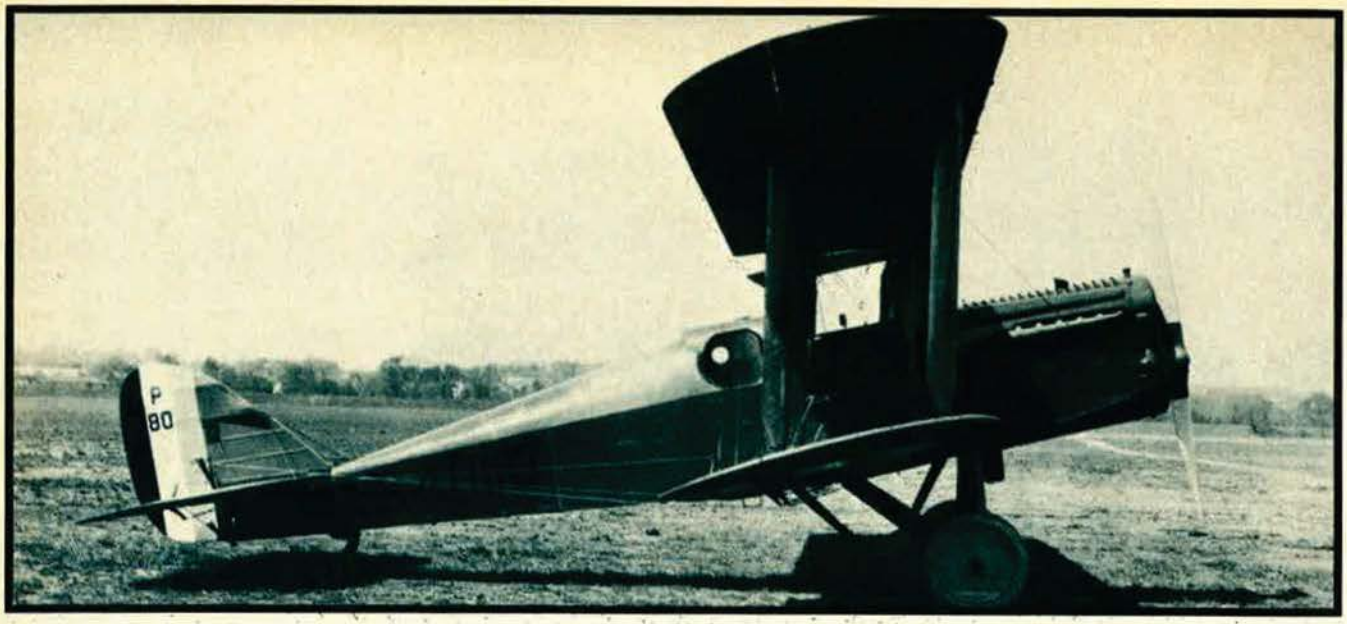
Test facilities must, therefore, be upgraded to "simulate the threat environment as closely as intelligence information and the budget will permit."

In discussing improvement of USAF test facilities and ranges, General Evans concentrated on the Nellis range complex in Nevada whose ground and airspace "provide the basis for an environment where we can conduct the . . . free-play type of air activity needed to develop our tactics, train our tactical forces, and realistically test our operational weapon systems. The Nellis ranges now contain a limited number of typical ground targets and threat devices, as well as some basic instrumentation and data-processing capability. . . . We intend to continue to improve and modernize the Nellis ranges by adding more targets, and threat devices, by upgrading the simulated enemy command control and communications network . . . to provide the operational tester, the trainer, and tactics developer an area that approximates, as closely as possible, a real-world, combat-like threat environment." ■

(This report will be concluded in the next issue of Air Force Magazine.)

AFSC Commander Gen. Samuel C. Phillips at the AFA/NSIA symposium.

Lt. Gen. Wm. J. Evans, the then DCS for R&D and now AFSC Commander.



The author made his memorable flight in this modified D-9A on June 8, 1921, at McCook Field.

IN 1921, I was Chief of the Flight Test Section in the Army Air Service's Engineering Division at McCook Field, Dayton, Ohio. That June, I made what I believe to have been the first pressurized-cabin flight on record. We learned a great deal about cabin pressurization in one short flight—and I lived to tell the tale.

The plane was a D-9A, a Liberty-engine observation plane built from the design of the British de Havilland DH-9. It was a two-seater, but for this experiment the cockpit area was fitted with an oval pressurized compartment made of steel. The minimum of controls was brought into this tank—the spark advance, throttle, mixture control, ignition switch, and the flight controls. Packing glands surrounded all cables where they went through the sides of the tank.

The only instrument inside the tank was an altimeter. All other instruments were on a special board just forward of the eight-inch porthole in the front of the tank, where they would be readily visible to the pilot. There were no controls for the pressurizing unit.

The tank had five small glass portholes: bottom, top, left side, forward, and a fifth in the removable door on the right. The door itself was about two feet in diameter and, in unpressurized flight, was suspended on hooks on the right rear interior wall of the tank. This door was steel, of considerable weight, and had to be lifted off the suspending hooks and placed in the retaining tracks on the inside of the opening, then rotated about an eighth of a turn to make a tight seal against a rubber gasket.

A normal pilot seat was installed in the tank. In the ceiling was a three-fourths-inch globe valve, with a manual control easily reached from the pilot's position, presumably to regulate pressure in the tank by adjusting the rate of exhaust of the pressurized air. A propeller-driven blower, I believe of the Rootes type, was installed in the leading edge of the lower left wing with a one-and-a-half or two-inch pressure line running from the blower to the lower forward part of the tank.

I don't know who invented the idea of the pressurized cabin, but I suspect it was Maj. L. L. Hoffman, who was head of the Equipment Section, and much interested in high-altitude photography, for which an aircraft of this type would be very useful.

The pilot assigned to the first flight was Art Smith, a well-known pre-World War I exhibition pilot who was employed as a civilian test pilot by the Air Service. Since I was Chief of the Flight Test Section, Smith was in my department. He was only about five feet, three inches tall, but quite husky. He took the experimental plane up with the door mounted in the takeoff position, that is, in the rack aft of the opening through which the pilot entered the tank.

Smith climbed to 3,000 feet, and tried to lift the door into place to pressurize. Because of his short stature, he was unable to maneuver the heavy steel door into its closed position, so he brought the plane back.

Since I was taller than Smith and consequently would have better leverage, I took the plane up myself for the pressurization test flight. At 5,000 feet, I lifted the door into place and rotated it to its locked position.

Things began to happen immediately. The pressurization system had been designed on the assumption that there would be a large leakage

Today, we all take aircraft cabin pressurization for granted. But somebody had to make the first pressurized flight. His name was Harold Harris, and he was lucky to live to tell about it . . .

THE DAY I FLEW AT 3,000 FEET BELOW SEA LEVEL

BY BRIG. GEN. HAROLD R. HARRIS, USAF (RET.)

The author, Brig. Gen. Harold R. Harris, USAF (Ret.), was an AEF flight instructor in Foggia, Italy, during World War I. He became a test pilot at Wright and McCook Fields, Dayton, Ohio, after the war—the period he writes about in this article. He set a variety of records during the twenties and then left the service to go into crop-dusting. He later helped set up the first US airline in South America, which became Panagra, and served as its operations manager until 1942. During World War II, he served in the Air Transport Command, becoming a brigadier general and ATC's Chief of Staff by the war's end. After the war, he returned to airlines activities, becoming President and Chief Executive Officer of Northwest Airlines in 1953. During the fifties, he was a member of the "Aviation Facilities Study Group" whose recommendations led to the establishment of today's Federal Aviation Administration. Retired since 1965, General Harris lives in New Canaan, Conn.

through all the packing glands carrying the cables for the control mechanisms, and that the regulation of pressurization would be easily taken care of by the manually operated globe-valve in the roof. For this test, the designers had increased the compressor capacity by 100 percent. Almost immediately after the door was closed, pressure built up within the tank until the inside altimeter registered 3,000 feet *below* sea level, although the altimeter outside the tank showed that the plane was flying at 3,000 feet above sea level.

My first action was to make sure that the manually operated exhaust valve in the roof was wide open. It was. I could feel the rush of air flow through the opening in the valve. Then I searched for something I could use to break a window. But I had nothing, not even a pocket knife, and since I did most of my flight testing wearing tennis shoes (to give me a better feel on the controls), I didn't even have the heel of a shoe.

Releasing the inward-opening door was impossible because of the tons of pressure inside the steel tank. There was no way to stop the wind-driven compressor as long as the plane was flying, since it had its own propeller, separate and distinct from the engine propeller.

The only thing left to do was to assume as slow speed a glide as I dared, and land as quickly as possible before the pressure built up to a dangerous level. At no time, from shortly after closing the door until the plane came to a stop, was the cabin pressure above 3,000 feet below sea level.

There was no possible escape from this ever-increasing pressure. I do not recall any particular area of discomfort except for pain in my ears. The air in the tank was uncomfortably warm from the action of the compressor, and I was wringing wet on landing. This was probably due in some degree to anxiety, and to irritation with myself for having gotten into such a situation without having intelligently considered the possible difficulties and taken necessary precautions.

Between the time of this flight in June 1921, and the time I left the Air Corps in 1926, the project didn't have enough priority to warrant its continuation. About the time I left, the device was again being readied for flight test with these safety items added:

- A brake on the compressor propeller.
- A valve in the compressor pressure line.
- A ball-peen hammer with which to break the glass in case of another emergency.

I believe that it never was tested in the air with the additional equipment, however, and that my own flight was the only one ever made in that steel tank. ■

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Republic's tough, versatile P-47 Thunderbolt of World War II fame was one fighter that put it all together. America's first ace of the Big One writes about the Jug—her wonders, her warts, and her winning ways—in this pilot report on the . . .

P-47

The Beautiful Beast

BY LT. COL. WILLIAM R. DUNN, USAF (RET.)

—Illustration by Bob Stevens

THE Republic P-47 Thunderbolt has been affectionately called many names by the fighter pilots who flew her—the Repulsive Scatterbolt, the Jug, Thunder Mug, Bucket of Bolts, T-Bolt, Big Ugly, and the Cast Iron Beast.

My own P-47D, when I was assigned to the 406th Fighter Group (the "Raiders") of the Ninth Air Force back in the World War II years of 1943 and 1944, was called "Posterius Ferrous." I assume my readers can translate those words from the Latin. And the company that produced the Jug was generally referred to as the Republic Locomotive Works and Iron Foundry.

Be that as it may, the P-47 was a beautiful airplane to fly in combat—tough, heavily armed, good range, maneuverable (when not loaded down with everything, including the kitchen sink), but most of all, reliable. It was said in the most elite fighter pilot circles that "she could fly through a brick outhouse and emerge smelling like a rose." She was indeed a beautiful beast.

Of course, beauty is in the eye of the beholder. The P-47 was a big aircraft when compared to other fighters of that day. The first time I ever saw a Jug was after my transfer from the Royal Air Force, where I had flown Spitfires, to the US Army Air Forces in June 1943, and my first thought was, "Where's the other engine?"

The Thunderbolt was conceived and designed by Alexander Kartveli during the early months of World War II. Her lines were not exactly graceful; she sort of resembled a big, buxom, good-natured blonde, if you know what I mean. Wingspan was forty feet, nine inches; fuselage length, thirty-six feet, one inch; and height, fourteen feet, two inches. Wing area was 300 square feet. Aircraft weight with a normal (clean) load was about 13,000 pounds. The P-47, however, had a maximum takeoff weight of from 15,000 pounds for the D-15 and D-20 models to 19,400 pounds for the D-25s. This load consisted of 370 gallons of internal fuel, 267 rounds of .50-caliber ammunition for each of eight Browning machine guns, ten 5-inch HVAR aerial rockets, two 500- or two 1,000-pound RDX demolition bombs, and a seventy-five- or 150-gallon belly tank. (Some of our guns, by the way, carried 425 rounds.)

I suppose I'd better mention now that the P-47N model was even larger than the D. It had two feet more wingspan and a maximum weight of 20,700 pounds—which included 1,156 gallons of fuel! The "N" was used primarily for long-range bomber escort missions in the Pacific Theater, so it needed every drop of gas it could carry. I'll limit my comments to the P-47Ds, which we used in Europe and in which I spent a considerable number of happy hours, interspersed with moments of sheer terror.

The P-47 was powered by the rugged and dependable Pratt & Whitney R-2800-21 and -59 series engine. This engine, a radial double Wasp with eighteen cylinders, supercharged and air-cooled, was rated at 2,300 hp on takeoff. There was an emergency boost system, which injected a mixture of water and alcohol (methanol) into the engine. If the pilot got in a bind in combat and needed some additional poop, he could "pull the teat" (as we called it) and get a maximum of 2,535 hp for about fifteen minutes. After that, the engine cylinders began to come unglued.

Speed of the Jug, of course, depended on the aircraft's load configuration, but clean she could do 350 mph at about 5,000 feet and around 425 mph at 30,000 feet. Now, if you had occasion to pull the teat, she'd do about 440 mph at 30,000 feet. Rate of climb wasn't the greatest, even clean—about 3,000 feet per minute (fpm) up to 5,000 feet, which then gradually decreased to 2,500 fpm at 20,000 feet. With a full war load, the rate of climb was sometimes reduced as low as 400 to 600 fpm. Service ceiling for the D models, depending on the series, was between 40,000 and 42,000 feet. However, I once had my old favorite, a P-47D-15 razorback, to 42,800 (true) before we both fell out of the sky and came barreling down in a long compressibility dive. That got bloody exciting, as I'll explain later.

Fuel consumption was something else. The Jug drank gas like it was going out of style. Twenty-five to thirty gallons went down the tube for warm-up and takeoff. Then she drank up between ninety and 110 gallons per hour (gph) at normal cruise speed (we used a rule of thumb—100 gph). In a good dogfight, her fuel consumption was about 275 gph. And, if you had to pull the teat, she gulped gas at the rate of 315 gph. Normal range of the P-47D was 480 to 500 miles when carrying a full war load. Maximum ferry range was about 1,700 miles.

A Bird for All Reasons

The Thunderbolt's combat flying capabilities and limitations need some clarification before they can be discussed realistically. First, what's the mission? Is it to be fighter sweeps, bomber escort, armed recce, bombing, strafing, or rocketing? Second, what's the target? Will it be enemy aircraft, railway marshaling yards, tanks, artillery, troops, trains, trucks, airfields, radar and communications sites, canal barges, bridges, coastal shipping, or battlefield close support?

Well, to be brief and to the point, the P-47 could successfully execute every one of those missions and clobber every one of those targets. The Jug's middle name was versatility. All that was needed was for the Eighth and Ninth Air Force staff weenies to come up with the mission—then the Thunderbolt group operations guys would figure out how to do it right, the first time. We often combined three missions in one flight—initial escort for the bombers to Germany, then, when relieved by another escort relay, we'd dive bomb some preplanned target, and finally do armed recce until we departed Hunland for home base.

Clean, the Jug could take on a flock of Me-109s or FW-190s and hold its own, big as it was. It couldn't outclimb them, but it could stay with them in a tight turn, and it sure as hell could outdive any of them. And the heavy firepower of its eight machine guns, using a combination of tracer, ball, and API (armor-piercing incendiary) ammunition, blew a goodly number of Kraut aircraft out of the sky. One time, shortly after the Allied

invasion of France, our group got into a scrap with forty Me-109s. We shot down eleven of them without a single loss.

Lt. Col. Francis "Gabby" Gabreski, the famous "Yankski" ace of the P-47-equipped 56th Fighter Group, will certainly agree with the Jug's air-fighting capabilities. He scrubbed 28 Hun kites—mostly enemy fighters. Col. Hub Zemke, the group's commander, knocked down another 17.75 confirmed in air-to-air combat before he was nailed by ground fire. Capt. Bob Johnson shot down 27 German aircraft while flying the "Repulsive Scatterbolt." Maj. Glenn Eagleston, of the 354th Fighter Group, splashed 18.5 enemy birds with his P-47D-25. Col. Dave Schilling toted up 22.5 air victories. Col. (later four-star general) John C. Meyer, Commander of the 352d Fighter Group, had 24 aerial kills. I've listed just six P-47 fighter pilots, and among them they shot down a combined total of 137.75 enemy aircraft—that's the equivalent of almost eleven and a half German squadrons!

Escorting bombers was a mission that fell more to the Eighth Air Force P-47 guys than to us Ninth Air Force types. However, every now and then we'd get shanghaied by the Eighth for an assist. By an intricate scheduling system of fighter relays, the bomber boys could be assured of Thunderbolt and Spam Can (P-51) escort and protection all the way to targets deep in Germany and back home again.

There was one real hazard to us on these escort operations—even more dangerous, sometimes, than enemy flak and fighters—and that was friendly air gunners aboard our bombers. Someone forgot to teach them aircraft recognition, so those trigger-happy characters took a squirt at everything that flew. Of course, at a distance and in a head-on position with our radial engines, we might have been mistaken for FW-190s. We were always very careful never to approach the bombers with our aircraft nose pointed toward them. We used to fly parallel to them, a safe distance away, and tip up our wings so the bomber crews could see their shape and US insignia. Even with this friendly gesture, a few .50-caliber tracers would come whizzing in our direction. Yes, we lost a few friendly fighters to our air gunner comrades-in-arms.

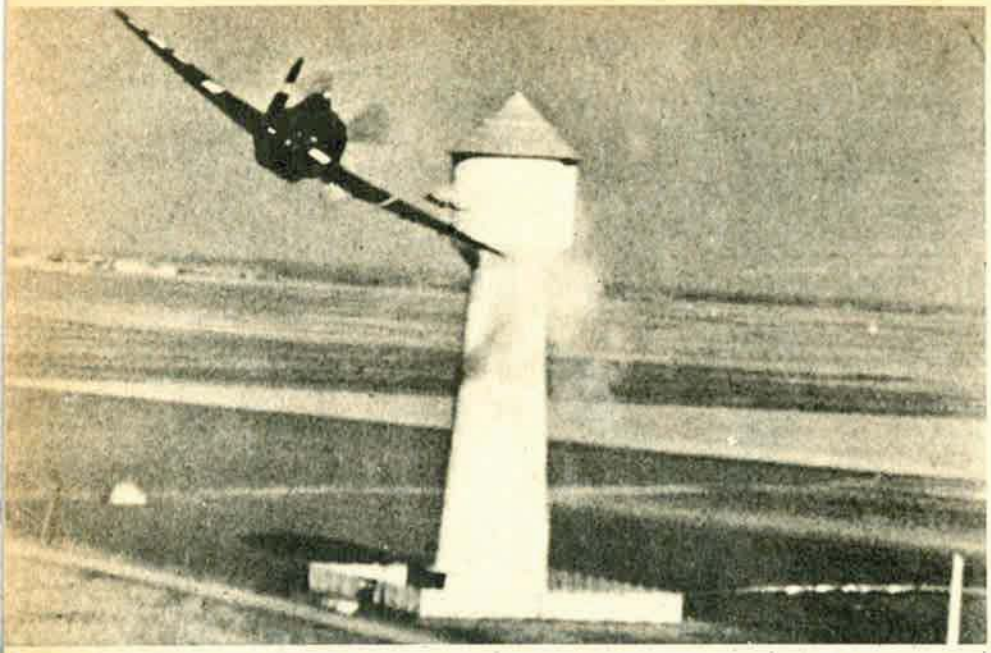
If we were lucky and were assigned to the more distant relays along the bomber route, we generally got a crack at enemy fighters. If we were unlucky and were assigned to the near relays—across the Channel, overfly Holland, and terminate just past the borders of Germany—we'd get stuck with the dive bombing and armed recce bit.

A Ninth Air Force P-47 at its base in England, loaded for bear with a 1,000-pound bomb under each wing and 267 rounds of ammo for each of its .50-caliber guns.

Flak Bait

Not too many fighter pilots enjoyed dive-bombing. Seems like special targets were always selected for Thunderbolt pilots—well-defended targets like railway marshaling yards, airfields, and critical bridges. The concept of our employment was simple. The inline-engine fighters couldn't take the heavy flak, the big 88-mm cannons, 40-mm rapid-firing "Chicago pianos," 20-mm and 7.9-mm light flak. One round through their coolant system and they were dead ducks. But the good old lumbering cast-iron Jug could take it and survive. You'd be absolutely amazed at the P-47s that made it home after being shot to pieces—cylinders blown completely off engines and streaming oil, and great rents and holes blasted through wings, fuselage, and tail planes.

Armed recce suited the Jug pilot better—targets of opportunity. Shooting up trains was by far the most exciting. Dive down at about a thirty degree angle to the train's route of travel to give the antiaircraft gunners on the train's flak cars a deflection shot, which they usually missed. Now squirt the locomotive with your .50 calibers. A few good hits on the boiler and up would pop a geyser of white steam and smoke. Now you had the train stopped and could beat it up at your leisure. If it proved to be an ammunition train, some caution had to be exercised in case it blew up under you on a firing pass. One of our 406th boys had to fly through the debris of such an



Beating up enemy airfields could be nonhabit forming—and was for a lot of Jug pilots who sat out the rest of the war in POW camps.

A German 40-mm shell ventilated this P-47, but the Beast made it home.

explosion, and, would you believe it, an 88-mm shell case smashed into the leading edge of his starboard wing and stuck there!

Shooting up the enemy's airfields caused the old adrenalin to flow, too. There was always a lot of heavy and light flak around them and, since you had to really low-fly, you were continually in the thick of it. Here again was the hazard of the target—an enemy aircraft or a fuel dump—blowing up in your face, a great red fireball, and you were so low and close that you had to fly through it. But the tough, reliable Jug would generally make it, no sweat.

I suppose, all told, I helped shoot up eight or ten enemy airfields in France and Belgium, and I got my fair share of flak and bullet holes out of it. (I was credited with the destruction of twelve enemy aircraft on the ground, during such attacks, and damaged several more.) We lost a lot of good boys on those missions in the months just before D-Day, but the Germans lost most of their air force. The trick to stay alive was not to duel with their anti-aircraft guns, to make no more than a couple of passes, and then get the hell out of there.

Nobody's Perfect

The Thunderbolt was easy to fly, sort of like a big AT-6. Takeoff was fairly long, depending on the aircraft's load. Landing on that wide-track gear was also simple. We usually put the gear down at about 180 mph, dumped the flaps on final turn at 150 mph, over the fence at 110, and touched down about 85 or 90 mph. She didn't float at all; just ease back on the stick and throttle and down she came, like a ton of bricks.

Her bad habits, as far as I was concerned, were her slow rate of climb, spin characteristics, and compressibility dive. I've already mentioned the climb problem. In a stall, low- or high-speed, she'd fall out from under you with a snap that would shake your eyeteeth, down would go her big nose, and she could really wind up in a long spin. Spins weren't recommended for the Jug, according to the book. If you did an intentional spin, it should be started above 10,000 feet. If you hadn't got her out of it by 6,000 feet, you'd better start thinking of bailing out because she was probably going all the way in.

A compressibility dive was a shocking state of affairs, let me tell you. You'd enter compressibility at about 42,000 feet. The nose would gradually drop until it was just past the vertical, the plane slightly on her back. There wasn't a thing the pilot could do to control the 600-plus-mph dive, except sit there and watch the earth rushing up at him, scream a little, and pray a lot.

At about 18,000 feet, you began to recover some elevator control. Power on would begin to lift the aircraft's nose, and by the time you'd reached 8,000 feet—pulling all the Gs you could stand—you'd come barreling out of the compressibility dive, slightly sweaty and a little green around the gills. It was a tremendous experience to go through—once. Some new boys used to get in a panic and start rolling back trim in the first part of the dive. At about 15,000 feet, the trim would take hold and they'd exceed the G limits, zoom up, black out, and sometimes not recover.

I had one other gripe about the Jug. Well, it was really about the gunsight. Whoever invented that 70-mil gunsight ought to have had his backside kicked up to his shoulders. Imagine, if you will, an enemy aircraft diving across your sight doing 380 mph at ninety degrees deflection and at a range of 250 yards. Quick! How many radii? Seventy mils goes into 380 mph how many times? He's gone while you're trying to figure it out!

My solution to this problem was to visit my old RAF buddies and trade an Irvin flying jacket for a British 100-mil gunsight, which I promptly installed in my P-47D. Quick! Solve the same problem.

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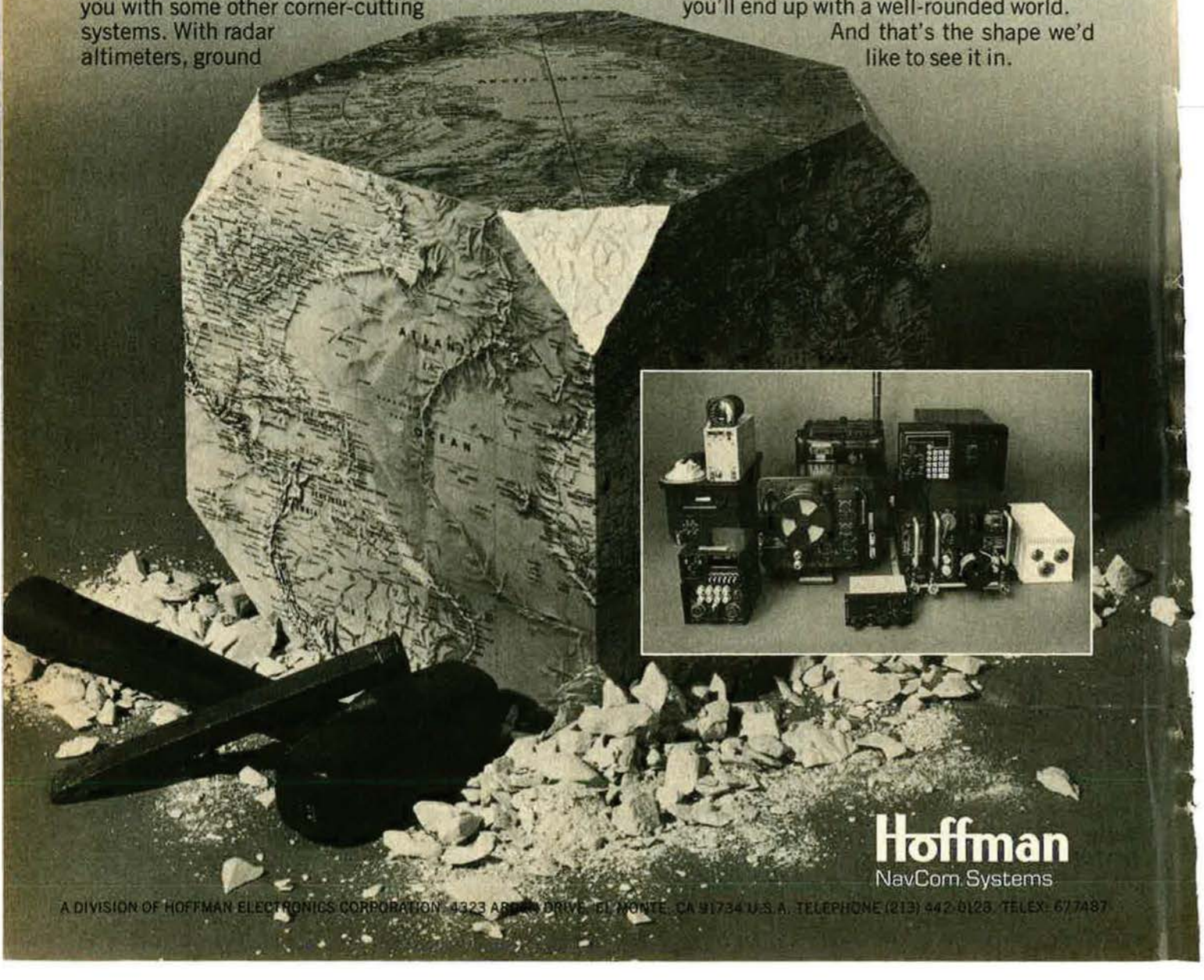

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On August 27, 1941, Bill Dunn, now a retired USAF lieutenant colonel, became the first American ace of World War II while flying a Spitfire with the RAF's No. 71 Eagle Squadron. In 1943, he transferred to the USAAF as a captain and P-47 pilot, flying 234 more combat missions by V-E Day. The story of Colonel Dunn's colorful career appeared in our April 1973 issue. In April 1975, his article on the Spitfire appeared in this magazine.

Confederate Air Force P-47s—among the few that remain of the 15,660 built during World War II—all bear the colors of famous Jug units.

Three point eight radii and squirt him. It wasn't too long afterward that I became the "go-between" for our guys and the RAF equipment stores for more such trades. I eventually got 100-mil gunsights for every Jug in the 406th Group.

Fantastic Firepower

Getting back to the Thunderbolt's firepower, I had occasion on June 18, 1944, to engage an Me-110 that was shooting up one of our ships off the French coast, near Cherbourg. He saw me coming and turned to a head-on pass. I had ten 5-inch HVAR rockets on board, and as I wasn't particularly fond of head-on attacks, I salvoed the whole lot at him. They didn't hit him, but they sure scared the bejesus out of him, and he did a steep turn to starboard. I pulled my Jug hard to port and ended up about fifty yards behind him, where I let him have the full blast, all eight .50 calibers. I had never seen an aircraft, unless it exploded, completely disintegrate in the air the way that 110 did. It just turned into shattered bits and pieces. The ship's crew confirmed this victory for me.

Another time (August 25, 1944) three of us were scrambled from A-6 Airfield in France to hit some enemy shipping in the harbor at Brest. When we got there, we saw that the German Army was trying to evacuate their surrounded troops by sea. The flak was bloody terrific, and one Jug, from another group, had already been shot down into the drink.

The pilot evidently had bailed out without a Mae West and was paddling around in the middle of the harbor. Some other Jug pilot had managed to get out of his parachute harness in the cockpit and had taken off his Mae West. Then he flew very low and slow over the water, through all sorts of flak, and threw the life vest over the side to his buddy in the water.

This brave Jug pilot got shot up a bit and returned to his home base. The guy in the water got the Mae West and, so we were later told, was picked up by friendly troops. Now that episode was something to see. We all provided flak suppression for this bold and heroic effort.

After this, the three of us, Lts. Howard Park and Lewis Hall and I, picked out ships to hit with our HVAR rockets. Park and Hall both attacked one vessel and holed it twice at the waterline and once below the waterline. They made a second attack on another ship and fired their rockets, but were driven off by the heavy flak before they could observe their hits. I witnessed both attacks and confirmed two hits on the second ship's hull.

My own target was a loaded 4,000-ton troopship at anchor in the small bay just below the city of Brest. Twice I tried to make low-level attacks on the vessel, but each time I was driven off by the flak—little white-hot balls of fire zipping past my Jug's canopy and kicking up geysers of water all around me. Finally, I climbed up to 4,000 feet, shoved everything forward, and dove flat out on the target.

I must have been doing about 500 mph when I leveled out just above the water and salvoed my rockets. Four of them hit the ship dead center and exploded inside the hull, two hit just below the waterline, two went skidding across the ship's deck, and two didn't fire. I was so low that I collided with some of the ship's top rigging as I pulled up and over it. I hedgehopped over another vessel, which I squirted with my guns, and then pulled straight up. When I reached 5,000 feet, I was still doing 280 mph.

We three sank three enemy ships (confirmed) with our rockets—and each of us was later awarded the DFC for that action. We all got holed by the heavy and intense flak; my Jug had eighteen battle scars to prove it, but she got me home all in one piece.

The Record She Wrote

I suppose you've been wondering how my P-47 and I got the glamorous title "Posterius Ferrous."

A goodly number of aces will testify that the Jug was no slouch in air-to-air combat. This 353d Group P-47 is off for a day of hunting across the Channel.

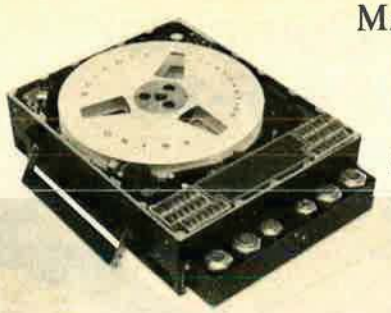
Taking off from Ashford Airfield in Kent, England, one day I hit a 500-pound RDX bomb that had fallen off the wing of the guy who took off before me. It blew up under my poor old P-47D-20, cutting her in half just in front of the tail plane. I didn't get a scratch worth mentioning. A couple of days later, when I went out to look at my new D-25, there on the cowling was painted a cartoon-type man holding a steel helmet over his rear end. Hence, the name was provided by my friendly crew chief.

The World War II record of the Republic P-47 Thunderbolt was indeed impressive. In 546,000 sorties, P-47s destroyed 11,874 enemy aircraft, some 9,000 locomotives, and more than 160,000 military vehicles (railway cars, trucks, tanks, etc.). And these figures do not include the great number of other fixed targets hit and destroyed, nor the tremendous effort that went into providing battlefield close support for our ground troops. Fifty-eight USAAF fighter groups were equipped with Jugs during those war years.

Our 406th Fighter Group, commanded by Col. Anthony V. "Tony the Wop" Grossetta, achieved a distinction unique in the annals of air warfare. On September 7, 1944, we found and attacked a complete German armored column, fifteen miles long, that was trying to escape from Southeastern France through the Belfort Gap. After we hit this column with our full strength three times during the day, the German commanding general asked to surrender—but only to the Air Force unit that had entirely destroyed his army group. If I remember correctly, Tony did the honors at a bridge across the Loire River. The 406th received a Distinguished Unit Citation for this action. We got a second DUC in December 1944 at Bastogne for our close support to the besieged American garrison there.

All in all, 15,660 P-47s were built. During the war years, they were flown in combat by the US Army Air Forces, the British Royal Air Force, the Free French Air Force, and the Brazilian Air Force. After the war, Jugs were provided to the air forces of nineteen countries and to our Air National Guard. When I was assigned to Iran as fighter adviser in 1948, I transferred sixty P-47D-20s and D-25s from the USAF to the Imperial Iranian Air Force. In 1954, while serving with the Joint Brazil–United States Military Commission at Rio de Janeiro, I met my old wartime Thunderbolt buddies again at Santa Cruz airfield, and assisted in the transfer of twenty-five more Jugs from the USAF to the FAB (Forca Aeria Brasileira). Today, as far as I know, the last Jugs on "active service" belong to the Confederate Air Force, based at Harlingen, Tex.

Wise guys, years ago, used to try to needle us P-47 boys with such comments as, "Evasive action in the Jug is when the pilot gets up and runs around the cockpit." Well, there was no use in even attempting to counter their uneducated digs. The Thunderbolt's gallant record in war speaks for itself. She was an outstanding fighter—a legend in her own day and age. Yes, truthfully, to us who flew and fought and survived in her, she was a very beautiful beast. ■



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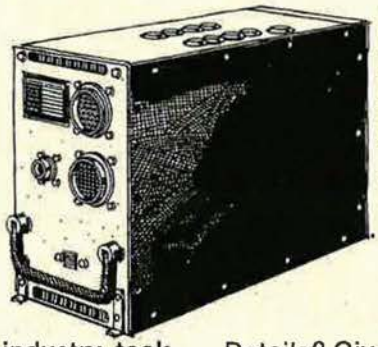

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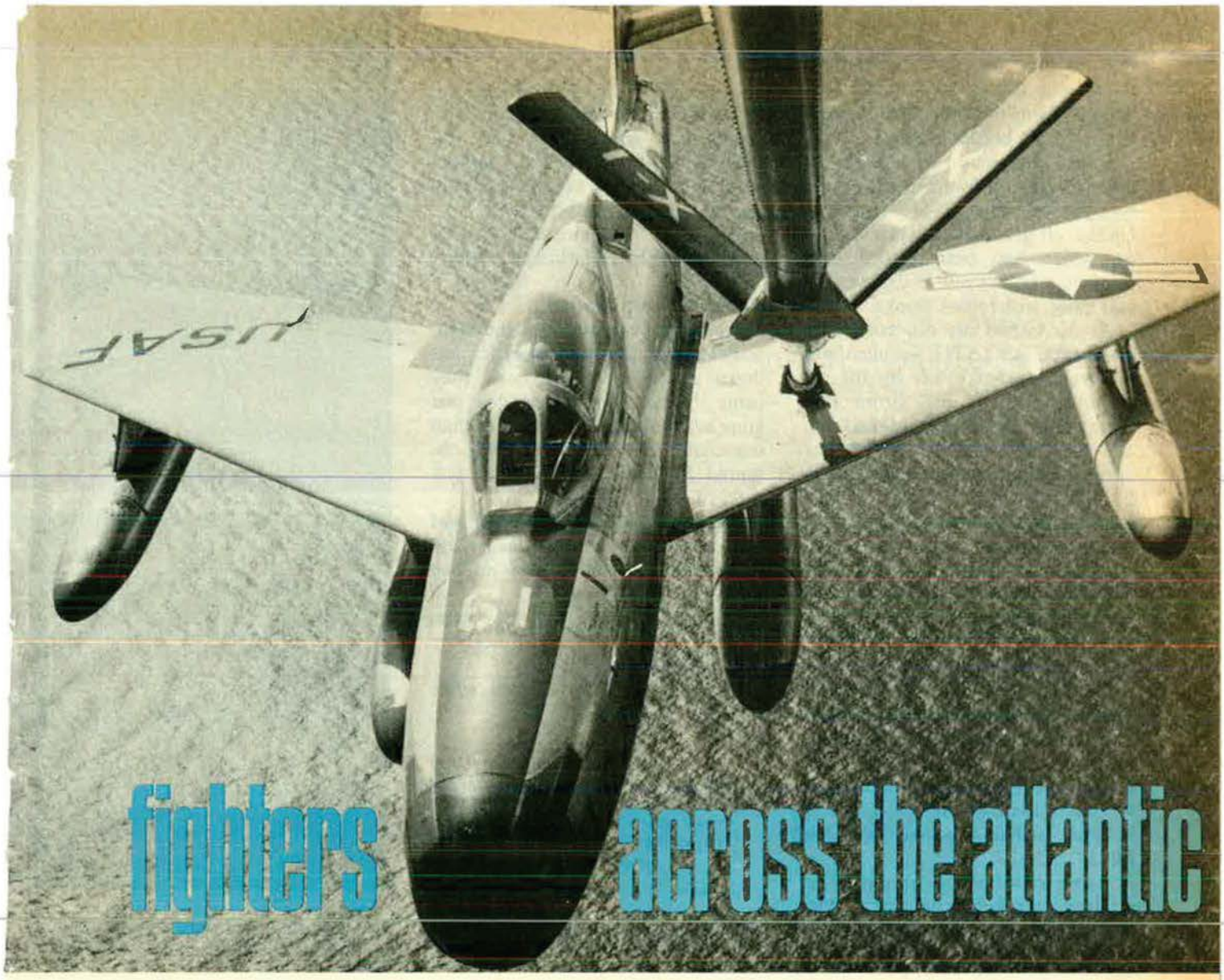


fighters across the atlantic

The routes and techniques for overseas deployment of USAF fighters were pioneered by SAC's strategic fighter wings in the early 1950s. This is the story of the 27th SFW's last and most significant overseas deployment in the summer of 1955.

BY JOHN KOSEK

THE sun had set. Below us, the woods and lakes of Labrador were black. As far as the eye could see, in all that wilderness there wasn't a single light.

But at 30,000 feet, twilight persisted, and we coasted along in a pale, golden glow—two F-84Fs five hours out of Bergstrom AFB, Tex., with another hour to go to Goose Bay.

It was May 3, 1955, and we were on our way to Goose as part of Operation "Sneak Play," the largest nonstop fighter crossing of the North Atlantic attempted up to that time.

The 27th Strategic Fighter Wing was attempting to deploy all seventy-five of its F-84Fs nonstop to Goose Bay in one two-day operation, and then on the following two days to deploy them, again nonstop, to RAF Sturgate in the north of England.

Considering that the "F" was a trouble-plagued airplane that had been grounded for almost half of its first year of service, it was a gutsy plan.

I was a 500-hour second lieutenant then, with a total of only sixty F-84F hours, and those were spread out over the previous twelve months. I had refueled in flight only twice in my life.

But I was picking up experience fast. I'd had my first JATO takeoff that morning, a nerve-racking business in the best of circumstances. And it hadn't been the best of circumstances.

With 230-gallon fuel tanks hung on the outboard racks and a 230 and 450 on the inboards, the old "Super Hog" weighed almost 28,000 pounds. At that weight, takeoff speed was 184 knots, and there was no way in the world the 7,200-pound-thrust Sapphire engine could get it

going that fast in any 10,000 feet. That's where the four 1,000-pound-thrust JATO bottles came in.

I was fourteenth in a flight of fifteen taking off four abreast on the two parallel runways at Bergstrom. Unlike all the other flights before us, which had been loaded with smokeless JATO, our JATO was the real thing, with lots of smoke.

At the instant my element leader and I fired our JATO, we piled into the wall of smoke left by the six aircraft ahead of us. From that point, until the JATO burned out and we broke out on top, I saw nothing of the element leader's airplane but four little circles of fire from his JATO bottles.

Thirty minutes later, when we'd reached our cruising altitude, my 450 refused to feed and I had to turn back to Bergstrom. We had to abort in pairs, so a flight leader from the 24th went back with me.

By the time I'd dropped the 450 and got a new airplane and we had JATO hung and all, it was afternoon. But then, for a change, things went right. We caught a tanker still up over Lockbourne AFB, Ohio, refueled, and set a course for Goose Bay.

As we rolled along, we picked up a cloud deck below us. The further we went, the thicker it got.

Now, up ahead of us, I could hear Capt. Allen McGuire, Operations Officer of the 522d, leading a flight of three into Goose from Limestone, Me.—as far as he'd managed to get the day before.

McGuire was one of the old heads who'd been with the 27th ever since it had been formed in 1947. Its original mission was to fly long-range escort in the F-82 Twin Mustang. He'd been part of the operation in the fall of 1950 that ferried 180 F-84s from Bergstrom to Germany without a loss, winning the Mackay Trophy for the 27th. He'd gone to Korea with the 27th a week later under the command of Col. Don Blakeslee. There they became the first unit to put the '84 into action. In October of '52, he was again with the 27th when they took a wing of F-84Gs from Bergstrom to Japan by island hopping and using in-flight refueling.

We heard McGuire call Goose for a weather update and then, still being too far out to hear their answer, we asked him to pass it along to us. It didn't sound too good. The ceiling was going down fast and they expected a frontal passage within the hour. They had already started to call in all their F-89s.

We heard McGuire call starting down, and then everything was quiet.

Sneaking Into Goose

About five minutes out, the flight leader called Goose Control for letdown instructions and back they came: "Sneak Play, Goose has just gone below minimums with less than one-eighth-mile visibility. Ceiling obscured by heavy rain. Advise you proceed to your alternate."

We looked over at each other and let that sink in. The flight leader signaled for fuel, and I held up two fingers and then three.

"Goose Control, Sneak Play here. Please be advised we have negative fuel for alternate."

There was a long silence while they thought that over. By the time we got to Goose and made our letdown I figured we'd have fuel for two or, at the outside, three GCAs. After that it would be a nylon letdown and a cold wet night in the woods—if we were lucky.

F-84F showing the four-tank (three 230s and a 450) configuration that the 27th took to England. This configuration was slow since the outboard tanks, whether full or empty, limited the speed to Mach .74 and 350 knots indicated.

"Sneak Play, this is Goose Control. We have a temporary break in the rain and are now above minimums. Begin your descent immediately on a heading of 040. Please expedite."

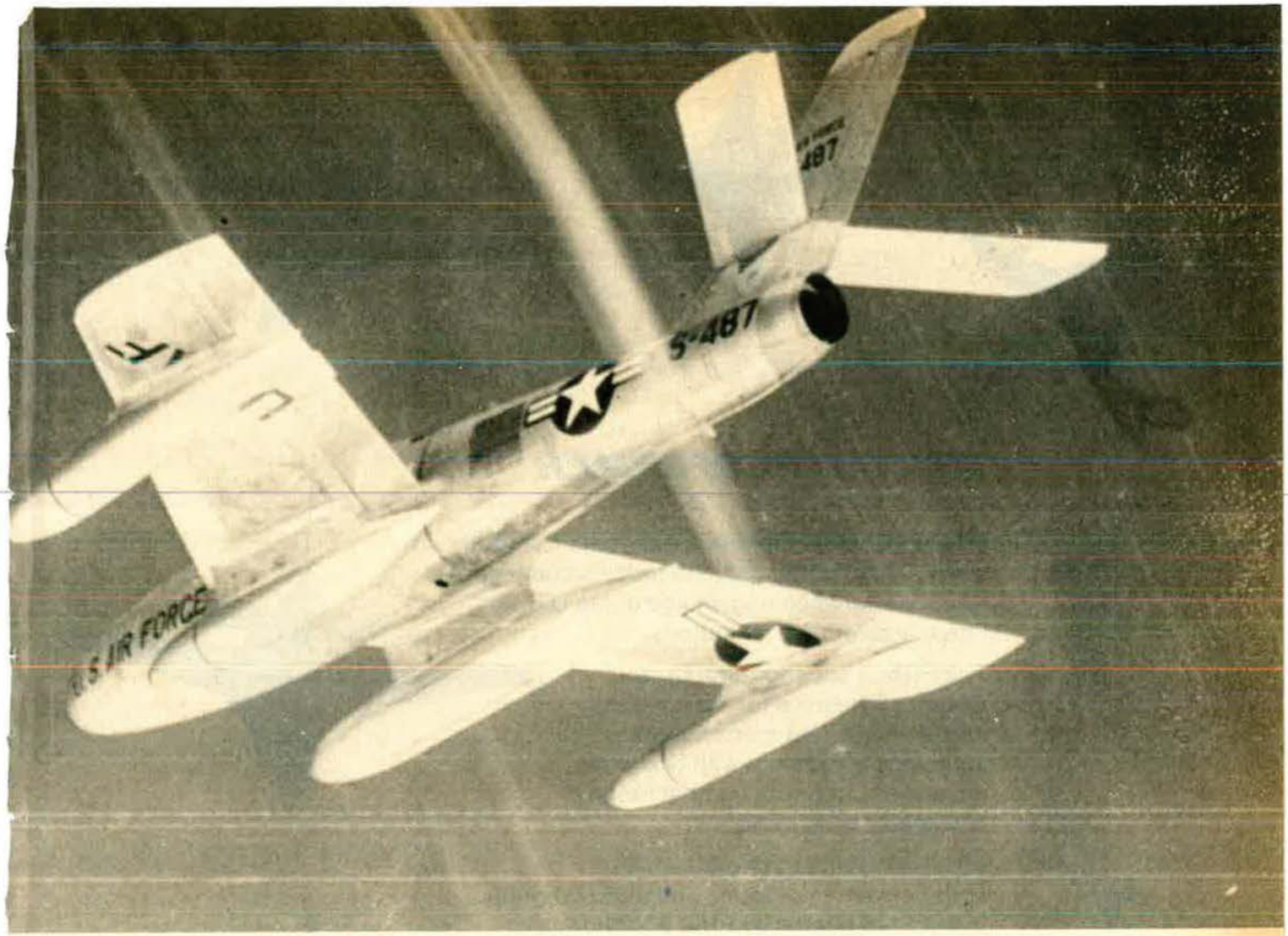
Speed brakes out, power back, lights on, and we were on our way. On top, there'd been the half light of evening, but the second we dropped into the soup, everything went black. As we came around on our turn, we passed through several cells of heavy precipitation, and the outboard tanks lurched and jerked on the racks as we hammered through the turbulence right at our max allowable 350 knots.

Radar handed us off to GCA who immediately had us drop gear and flaps. Seconds later, we were slowed to 180 knots and were on our final approach. I'd never made a for-real GCA landing before, and here we were at night at a strange field going to minimums in a pouring rain.

My concern was for nothing though. We broke out a half mile out with the runway dead ahead and only a light rain falling. I dropped back a little and greased it onto the concrete like I'd been doing it for years.

No sooner had we cleared the runway than the rain came down so hard that a "Follow Me" truck had to come out and lead us to parking. As we came around the last turn to where the other fighters were parked, our taxi lights picked up dozens of drop tanks thrown helter-skelter in a snowbank. It was a fitting reminder of how badly things had gone the day before, when only thirty-five of forty-eight aircraft made it into Goose.

When we got up to the club, though, we found that the second day had been an entirely different



story. Twenty-seven aircraft had been put up, and our arrival meant that twenty-five had made it to Goose. In addition, six aircraft from the day before had come in, which brought the total up to forty-one out of forty-eight.

On to Greenland

The order to go to England the following day had just come in from SAC Headquarters in Omaha, and Operations was busy shuffling airplanes trying to come up with forty-eight that could be ready by morning. It wasn't an easy job, because even though they had managed to reach Goose, there were serious write-ups on many of the aircraft.

As it turned out, the maintenance crews had to work all through the night. By morning, though, the aircraft were ready, the rain had stopped, the weather at the refueling area and at the destination was clear, and the mission was on.

When the final count was taken on that fourth day of May, the news was good. Of the forty-eight fighters that left Goose that morning, forty-three reached Sturgate. The other five aborted into Keflavik because of refueling difficulties, but they all got down without incident.

Nonetheless, the day was marked by tragedy. One of the KC-97s from the 310th ARS had an engine catch fire during one of the refuelings, and, without getting off a radio message, it went into a diving spiral and disappeared into the clouds below. Because no one actually saw how hard the aircraft hit the water, there was hope that there might be some survivors. An extensive search was carried on for the next two days. As it turned out, they only found a wheel and some other assorted wreckage.

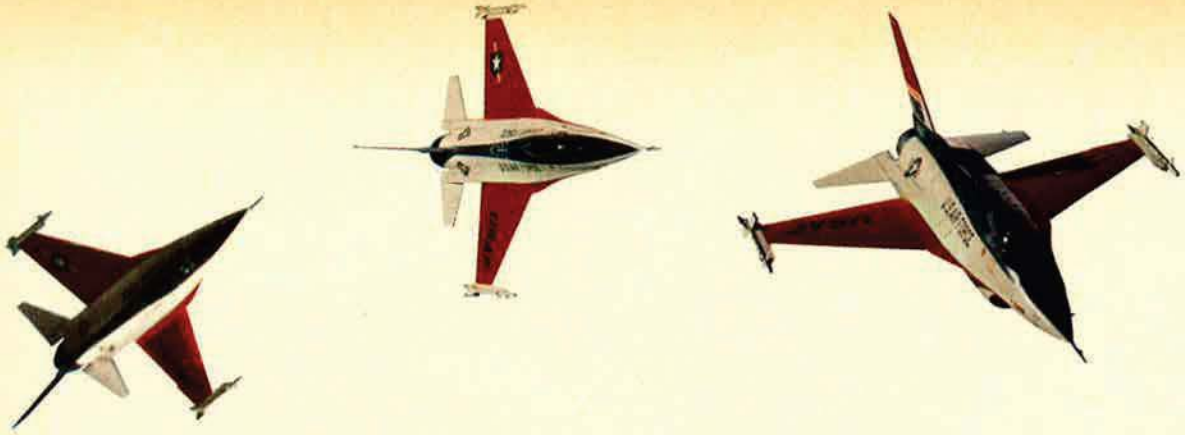
Finally, on May 8, England was ready for the second wave. By then, of course, all the remaining fighters had reached Goose Bay and were ready also.

In all of the shuffling that had been done to get forty-eight aircraft ready for the first day's flight to England, I wound up back with the 522d, No. 12 in the last flight of fifteen aircraft.

Our flight leader that day, Capt.—now Maj. Gen.—Ralph Maglione, always liked to put on a little air show when he had the chance (fittingly enough, he later became leader of the Thunderbirds). That morning, fully loaded, he took us off four abreast from the superwide runway at Goose. In the cold dense air, there was no need for JATO.

We joined flights together as we turned and climbed out to the East. Below us, Melville Bay was frozen solid from bank to bank. We reached our cruising altitude as we crossed the coast and spread out into a comfortable travel formation. It was a beautiful day with only a few scattered clouds.

By the time we reached Greenland, the clouds below us had thickened and all we saw of it were the snow-capped tops of the mountains. BW-1 with its 6,000-foot sloping



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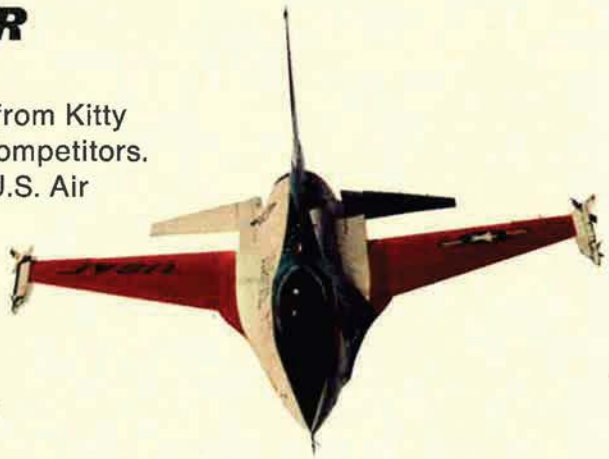

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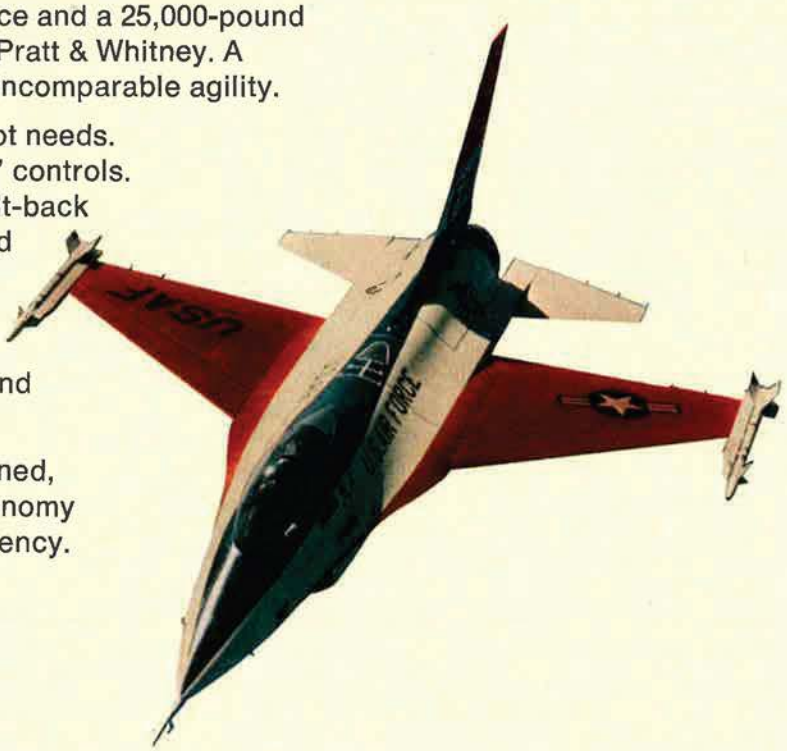

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GENERAL DYNAMICS

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The author, John Kosek, completed pilot training in 1953 and served with the 27th Strategic Fighter Wing until he left the Air Force in 1956. Since that time, he has edited Collins Radio Co.'s flying magazine, "Contact," and been an advertising executive with Sperry Flight Systems and Motorola's Electronics Division. He is now associated with the advertising department of Hewlett Packard in Palo Alto, Calif.

runway at the head of the fjord was an alternate we were all glad to pass.

An Unglued Radio

From Greenland to Iceland we saw nothing but unbroken clouds below us. Some 100 miles to the west of Keflavik, GCI started us down for our rendezvous with the tankers. At 24,000 feet, we dropped into the clouds. When we finally dropped out the bottom at 13,000 feet, there were the tankers dead ahead of us and only a mile out.

As we split up to get on the tankers, we switched to our refueling frequency, and that's when my radio came unglued. It would cycle around to the selected frequency, stop for a second or two, and then start cycling again.

The element leader refueled first, and I kept working on the radio, trying to get it to settle down. The element leader seemed to be having a lot of trouble, but I couldn't catch enough of his conversation to figure out what it was.

He finally got his fuel, and I pulled up alongside him and signaled "radio out" so he could pass it along to the boom operator. I then slid back behind the tanker and soon found out what the problem was. The boom wouldn't lock into the receptacle—it was going to be a stiff boom refueling.

I looked over at the spare, but there was one plane on and another waiting. I would have to get at least some fuel where I was. I was on and off a couple of times real quick, and then the third time I seemed to find the slot.

When I finally fell off, it was because I was too heavy to push the tanker any longer. By then Iceland was passing behind the left wing and all the flights were joining. I switched back to our tactical channel, but the radio didn't like that one either and kept on cycling.

I couldn't read my external fuel on the gauge, but the airplane felt heavy enough. I was sure I had plenty of fuel to get to England. While we had been refueling we'd come out from under the clouds into bright sunshine, and as far ahead as I could see there wasn't a cloud in the sky. In the "F," you couldn't let a little thing like radio failure hold you back. Besides, I thought that if I turned the radio off and let it cool for an hour or so, I might get it back for the letdown and landing at Sturgate. I joined up with the others, and we were on our way.

F-84F with two 450s. This configuration, because of the reduced drag, would go as far as the four-tank setup and cruising speed was a respectable Mach .80. The flights to Africa and the return flights to Bergstrom all carried two 450s.

Back in the Soup

That fine blue sky lasted for about fifteen minutes, and then we were back in the soup. With four external tanks full, we could only get to 28,000 feet. When we leveled off, there we were still several hundred feet below the tops of the clouds.

The brightness inside those clouds was unbelievable. It came from all directions. You couldn't look away from it. I hated to fly with the visor down, but there was no help for it.

An hour went by (it seemed like four), and we were still right there in close formation, in the tops of the clouds. The plastic collar on the exposure suit was beginning to cut into my neck, and I was getting tired of looking out the left side of the airplane.

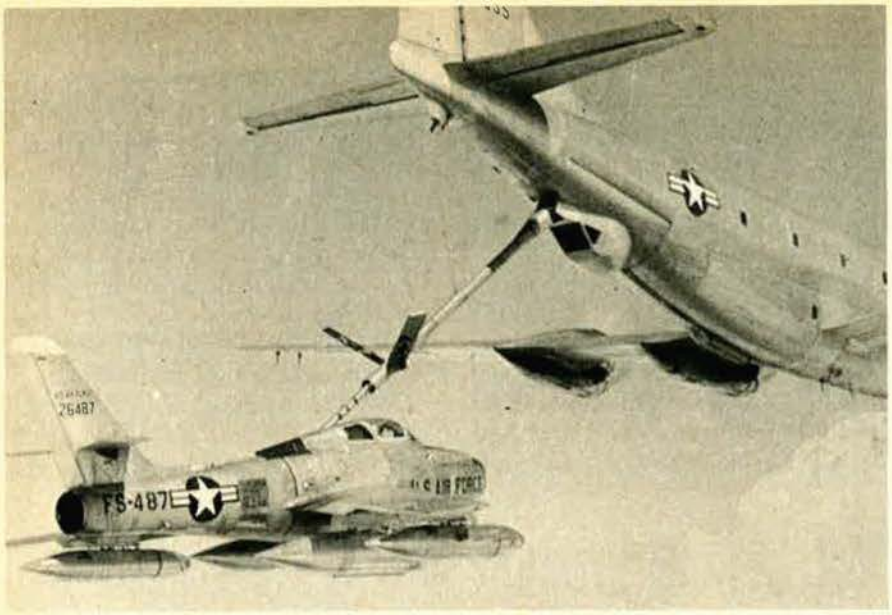
I wasn't too sure where we were. I kept trying for the ocean station vessels and the SA-16s on the radio compass, but no luck. What I didn't know at the time was that we were running twenty minutes behind schedule because of the extra time we'd spent refueling.

Another half hour and finally we'd burned off enough fuel to get on top. Before much longer the clouds below us began to break up, and I could see the ocean below and then the Hebrides Islands. It was then that I realized how late we were.

As we descended toward Sturgate, the clouds picked up again. I still had no UHF radio so had no idea what kind of weather to expect. Try as I might, I couldn't pick up the Sturgate homer. Later I found out it was putting out all of four watts that day.

We dropped back into the soup and turned to the initial heading of the Sturgate letdown, and I started watching for the speed brakes to come open. If I missed them or if mine didn't open, I was in big trouble. I had enough fuel left to go on to France, but in order to save space, I'd cut my map off some twenty miles past Sturgate. I didn't have the faintest idea where an airfield in France might be and, for certain, no way to ask anyone.

The brakes came out, and I caught mine in time, but an aircraft on the other side of the formation had his fail to open, as I'd feared mine might, and he slid out ahead of the pack and disappeared. We went on and made our turn and finally got out the bottom at 2,000



F-84F refueling from KC-97. If one of the outboards filled before the other, and they sometimes did, the airplane became extremely difficult to hold on the boom.

feet. It was raining, and the visibility was down to two or three miles.

Some of us were too heavy to land right away, so we left the brakes out and made a little tour of the local area. I couldn't believe how many airfields there were. Some had Meteors or Canberras on them, but most were abandoned.

We finally got down to our landing weight of 15,000 pounds and broke up into flights of four and had our first try at 8,000 feet of wet asphalt. Since we hadn't heard about hydroplaning, we all managed to stop in time.

A Brighter World

Our new field didn't look like much to write home about. The squadron operations shack wasn't even that. It was a moldy old tent, full of folding chairs. With the side flaps down to keep the rain out, it was dark and stuffy inside.

After six and a half hours crammed in that cockpit, the last half of it in the soup with no radio, I was so stiff and tired I could hardly get out of my exposure suit. I just wanted to lie down somewhere and go to sleep.

A couple shots of mission whiskey, though, and the world seemed to get a little brighter. "Let's get cleaned up and go to town," Maglione said. In less than an hour, six or seven of us crammed into a 1938 Humber that served as a taxi and headed for the first of many sessions with the rest of the group at "The Trip to Jerusalem" in Nottingham.

In England, everything fell neatly into place and, for the first time since we had them, the airplanes straightened up and began to fly right. We ranged far and wide, flying low-level missions all over England and Scotland and also across the Channel into France. There was no such thing as Instrument Flight Rules in England then, and that greatly simplified our operation.

In July, we went to Norway and also to Sidi Slimane in Morocco. For that trip we carried a 450 on each inboard rack, and it worked out so well (it increased our cruising speed from Mach .74 to .80) that we decided to return to the States in that configuration.

The day we left Sidi Slimane, the runway temperature was 116°, and we rolled somewhere between 12,000 and 13,000 feet before we finally got airborne. Even then, we blew up long trails of dust off the end of the 15,000-foot runway. Out of sixteen aircraft that departed that day, four blew nosewheel tires on the long takeoff roll.

Goodbye to Sturgate

Finally, on August 19, 1955, with Col. Richard N. Ellis again leading the first wave, the 27th said goodbye to Sturgate and headed back across the Atlantic. (Colonel Ellis, later a brigadier general, commanded SAC strategic missile divisions before becoming Deputy Commander of USAFE's Third Air Force in England. He retired in May 1969 and later that year became Commander of the Civil Air Patrol, Maxwell AFB, Ala.)

Out of the forty-eight aircraft that took off that morning, one returned with a nose gear that wouldn't retract. The rest got their refueling off Iceland and went on to Goose. It was quite a contrast to the disastrous first leg a little more than three months earlier.

The first wave refueled over Goose Bay and kept on going. Another refueling over Lockbourne and they were on the last leg. Finally, ten hours and forty-three minutes and 5,118 miles after leaving Sturgate, they arrived at Bergstrom and found a red-carpet welcome waiting.

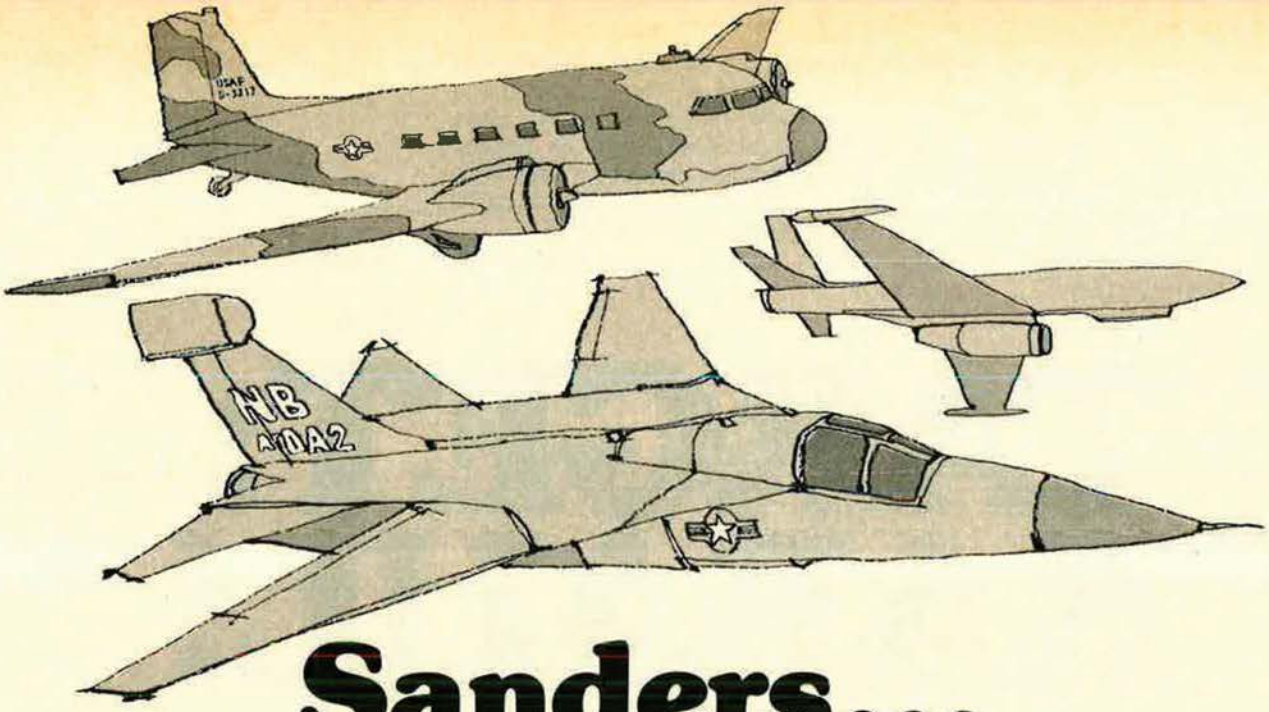
It was well deserved. That flight set a world's distance record for jet fighters that stood for a lot of years.

The second day's operation went as well as the first. Every aircraft that left Sturgate made it into Goose Bay, and the maintenance crews who had been sent ahead to Iceland packed up and left for Texas without ever opening their tool boxes. In a couple more days, we were all back in Austin.

After that little demonstration there was no holding back in-flight refueling for fighters. Everyone, it seemed, wanted to get into the act. Even TAC, which had previously been indifferent to the idea, started designing an add-on probe and drogue refueling system for the F-100, which was then being readied for squadron service.

In a few more years, everyone was doing it. But, for the 27th this was their last overseas deployment. A rotation to England scheduled for the summer of 1956 was canceled because of the lack of a suitable field, and the wing then became involved in transitioning to the new F-101.

Finally, on July 1, 1957, all five SAC fighter wings were disbanded and the aircraft and crews transferred to TAC. The 27th with its brief but brilliant history was no more. ■



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In October 1943, Gen. George Kenney's Fifth Air Force in the South Pacific was ordered to neutralize Japanese air and naval strength at the heavily defended port of Rabaul on New Britain Island. Here's a dramatic account of how the job was done . . .

TARGET: RABAUL!

BY STEVE BIRDSALL

On October 12, 1943, Gen. George C. Kenney's Fifth Air Force flew the first of a series of missions to knock the Japanese stronghold at Rabaul out of the war. Japanese installations in and around that port on the northeast tip of New Britain Island were second in importance only to those at Truk. They had to be captured or neutralized before General MacArthur could advance through New Guinea to the Philippines and the Japanese home islands. An invasion would cost too many men and months, but with a crushing aerial campaign, Rabaul could be isolated and bypassed.

Although the Fifth's campaign against Rabaul did not end until November 11, it culminated in the much-publicized strike of November 2. While not the largest mission of the campaign, it was among the dramatic air actions of the war in the South Pacific. Its results still are a matter of controversy among historians.

The Campaign Begins

The Japanese had captured Rabaul early in 1942, but, while the tide of battle was running their way, had done little to improve the old Australian facilities in the area. However, by the fall of 1943, Lakunai and Vunakanau, both pre-war Australian airstrips just south of the town, had been built up despite minor Allied air attacks that began during the spring of 1942. Fourteen miles to the south lay Rapopo, another field that had been completed by the end of 1942. Tobera, a few miles further south, was ready in August 1943. Intelligence photos of the four Rabaul airfields showed revetments for 265 fighters and 166 bombers, as well as unprotected dispersal areas. There was also an airstrip at Borpop on adjacent New Ireland Island, fifth strand in the web protecting Rabaul.

Simpson Harbour, an excellent anchorage with the town of Rabaul on its north shore, was in a natural bowl, surrounded by volcanic peaks. Pilots said you could find Rabaul in bad weather or at night simply by sniffing the sulphurous fumes. There were seven wharves, supplemented by piers and floating cranes, and the overgrown inlets on the northern shore of Blanche Bay, which led into

By October 1943, with the Japanese stranglehold on eastern New Guinea broken, Allied forces used New Guinea bases to attack the key port of Rabaul, whose neutralization would cut off the Solomons and permit further Allied advances on the long road to Tokyo. At left: details of Rabaul.

the harbor, concealed repair facilities and provision for small boats, barges, and submarines. Rabaul was abundantly supplied, and until February 1944 the warehouses and nearby dumps supplied most of the Japanese army and navy units in the Bismarcks, Solomons, and eastern New Guinea.

This key location was well protected and was (unlike the opposing Fifth Air Force) high on the priority list at home. There were some 360 antiaircraft weapons and a good radar network. The Japanese could expect up to an hour's warning of any attack.

Kenney's recon P-38 Lightnings had Rabaul under constant surveillance. On the first day of October, their photos revealed two cruisers, ten destroyers, five submarines, and twenty-six merchant ships in Simpson Harbour. Scattered over the airstrips were 124 bombers and fifty-nine fighters. Ten days later the fighter count had increased by eighty-six. Kenney was eager to get on with the biggest task that had faced his "kids," and his weathermen looked to October 12 for the first big strike.

That morning good conditions were reported on the route to Rabaul, and the largest strike yet made in the Pacific Theater began. The crews had been carefully briefed on their targets, approach routes, and opposing antiaircraft positions. The B-25 Mitchells were at Dobodura, near the eastern tip of New Guinea. The 3d Attack Group would hit Rapopo with three B-25 squadrons, while the four squadrons of the new

This famous photo of the November 2 strike, with a B-25 sweeping low over Simpson Harbour, Rabaul, appeared in Life *Magazine on November 29, 1943.*

345th Bomb Group, along with the 38th Group's two squadrons, would hit Vunakanau. These B-25s were under the overall command of Col. Clinton True. One hundred thirteen took off, six to abort along the way.

Seven squadrons of B-24 Liberators from the 90th Bomb Group, the "Jolly Rogers," and the 43d Bomb Group took off from Seven Mile strip at Port Moresby, New Guinea. The Liberators, led by Col. Art Rogers and briefed for specific shipping targets in Simpson Harbour, linked up with their P-38 escort over Kiriwina Island, a Fifth Air Force base about 275 miles east of Port Moresby in the Solomon Sea.

For once, Rabaul was taken by surprise. Coming up St. George's Channel at minimum altitude, the B-25 force veered sharply inland at the mouth of the Warangoi River, then split into two groups—the 3d Attack's forty planes going to Rapopo, the rest heading for Vunakanau. The strafers formed into shallow vees by squadron, three lines twelve to fifteen planes wide and about a mile apart. Their forward firepower hit the Japanese with a tremendous hail of bullets as they opened fire at long range, picking out the antiaircraft positions and scattering their bombs over the dispersal areas. The bedlam caused by the bombs and gunfire made any assessment of damage uncertain, but the 3d Attack was sure it had destroyed between fifteen and twenty-five planes on the ground, and three in the air.

At Vunakanau, the Mitchells went in the same way. Sporadic fire greeted them, and Japanese fighters were up by the time the fifth and sixth squadrons were over the target. A Zeke was shot down, but one B-25 took engine hits and had to ditch. The P-38s had little work, picking off an Oscar and a Betty bomber over the target. The fighters and a few damaged B-25s landed along the way at Kiriwina for fuel or repairs, but the bulk of the Mitchells reached Dobodura about 1:00 p.m.

Col. Art Rogers had led the first B-24s over Simpson Harbour at 12:05, covered by twenty-eight P-38s—a small escort, but believed sufficient if the Japanese had just finished fighting the earlier force of B-25s and P-38s. The Jolly Rogers, their fins painted with a huge white skull and crossed bombs, droned over as the sky thickened with antiaircraft fire. Unexpectedly, the B-24s came under strong and determined fighter attack, the Japanese staying with the bombers for forty minutes and 175 miles. Two B-24s were lost, but gunners claimed at least ten fighters, and the Jolly Rogers dragged most of the Japanese away from the target, allowing the 43d Group's Liberators a less frantic mission. One of their squadrons claimed forty-eight hits with forty-eight bombs.

A destroyer was claimed sunk, two tenders badly damaged, two large merchant ships in flames, and three other ships sunk or badly damaged. Kenney had promised MacArthur he would own the air, that American troops would go ashore with their rifles on their backs. Very optimistic in terms of shipping, but conservative in the area of airplane destruction, this first Rabaul mission was a step in that direction.

The November 2 Mission

The Japanese interpreted the October 12 strike as a prelude to an invasion, and struck back at the ports in New Guinea, hitting Oro Bay on October 15 and 17 and Finschhafen on October 17 and 19. Kenney's fighter pilots claimed more than 100 victories for a loss of ten

At Rabaul, Maj. Ben Fridge, left, led the attack against the shore defenses; Maj. Jock Henebry, center, and his B-25s took on the shipping in Simpson Harbour; Maj. Richard Ellis' B-25 was "Fifth Air Force's slowest."

P-38s. The types of aircraft used by the Japanese indicated that they had mounted the attacks from Rabaul.

Fifth Air Force strikes on Rabaul were scheduled several times between October 12 and November 2. Several were canceled because of weather, and in two instances only part of the attacking force was able to fight its way through bad weather to the target.

Recce photos showed that the Japanese were building up their fighter force around Rabaul in anticipation of an Allied landing. By the third week of October, 211 fighters occupied the bases defending Rabaul. Then, in late October, Adm. Mineicchi Koga started deploying 300 fighters from the Combined Fleet to the Rabaul bases. They began arriving on November 1.

For the Fifth, another shipping strike was next on the agenda, in support of Allied landings on Bougainville Island, about 200 miles southeast of Rabaul, that were scheduled for November 1. The combat crews had been ready since October 30, but on November 2 yet another bad weather report came in. The Fifth relaxed—until two 8th Photo Squadron Lightnings reported clearing skies at Rabaul. The mission was "hurriedly rescheduled."

General Kenney said that the November 2 mission would be compared with the Bismarck Sea battle and the destruction of the Japanese air forces at Wewak. In actual fact, it turned out to be one of the most controversial missions of the war. It was not the biggest strike, purely a B-25 and P-38 effort—seventy-five Mitchell strafers and fifty-seven Lightnings. There were nine squadrons of heavily gunned B-25s, three from the 3d Attack Group, two from the 38th Group, and four from the 345th. The P-38s were from the 475th Fighter Group, the 80th Fighter Squadron "Headhunters," the 39th Fighter Squadron, and the 9th Fighter Squadron.

The plan, worked out between the force leaders and Col. Freddy Smith (later a four-star general and Air Force Vice Chief of Staff) of First Air Task Force, was this: Maj. Ben Fridge (now a major general, USAFR), covered by two squadrons of 475th Group P-38s, would lead the 345th in a gun and phosphorous bomb attack against the shore defenses. Two fighter squadrons, the 39th and the Headhunters, would make a circular sweep of the harbor three minutes before the bombers attacked. The 3d Attack's 90th and 13th Squadrons, with a squadron of P-38s, would attack shipping in the harbor. Four minutes later, the 8th, 71st, and 405th Squadrons (the last two from Col. Larry Tanberg's 38th Group), covered by a P-38 squadron, would fly a devious course around the North Daughter volcano and come in across Simpson Harbour. Maj. John P. "Jock" Henebry (now a major general, USAFR, and a past President of the Air Force Association) would lead the B-25s striking the shipping, and Capt. Gerald R. Johnson (twenty-two confirmed victories at war's end) with Capt. Dick Bong (forty victories) as his wingman, would lead the close-cover force.

The 39th Squadron met little opposition as it raced across Simpson Harbour and Lakunai, but the following Headhunters fought an estimated sixty to 100 interceptors, shooting down eight in the swirling dogfight. Ben Fridge's B-25s flew into heavy ground fire and fighters, and eight B-25s in the lead were hit, three of them unable to make it back to their base. Between the 345th and their P-38 escort, thirty-four enemy fighters were claimed. The attack with "Kenney Cocktails," standard 100-pound bombs loaded with white phosphorous, was a success, and a thick wall of smoke screened the B-25s from the shore gun positions, as well as burning out large portions of the township.

Sixteen aircraft were destroyed at Lakunai and the effectiveness of its neutralization led to the success of the shipping strike. It also allowed the strafers to attack from the east, over Crater Peninsula, circling north of the North Daughter volcano, passing over the town, then crossing Simpson Harbour from north to south, a route normally exposed to deadly fire. The only disadvantage was that smoke from the fires and phosphorous made target selection harder in the harbor.

The B-25s Hit the Harbor

Jock Henebry was leading his B-25 force in a plane named *Notre Dame de Victoire.* In his flight was Capt. Chuck Howe in *Here's Howe,* and Maj. Richard H. Ellis (now a

Steve Birdsall is an Australian aviation historian who has written extensively about the war in the Pacific. In addition to many magazine articles, he is the author of several books, including The B-17 Flying Fortress *(Morgan Aviation Books),* The B-24 Liberator *and* The A-1 Skyraider *(Arco), and* Hell's Angels *(Guardian Books). His* Log of the Liberators *(Doubleday) was reviewed in the December '73 issue of this magazine.*

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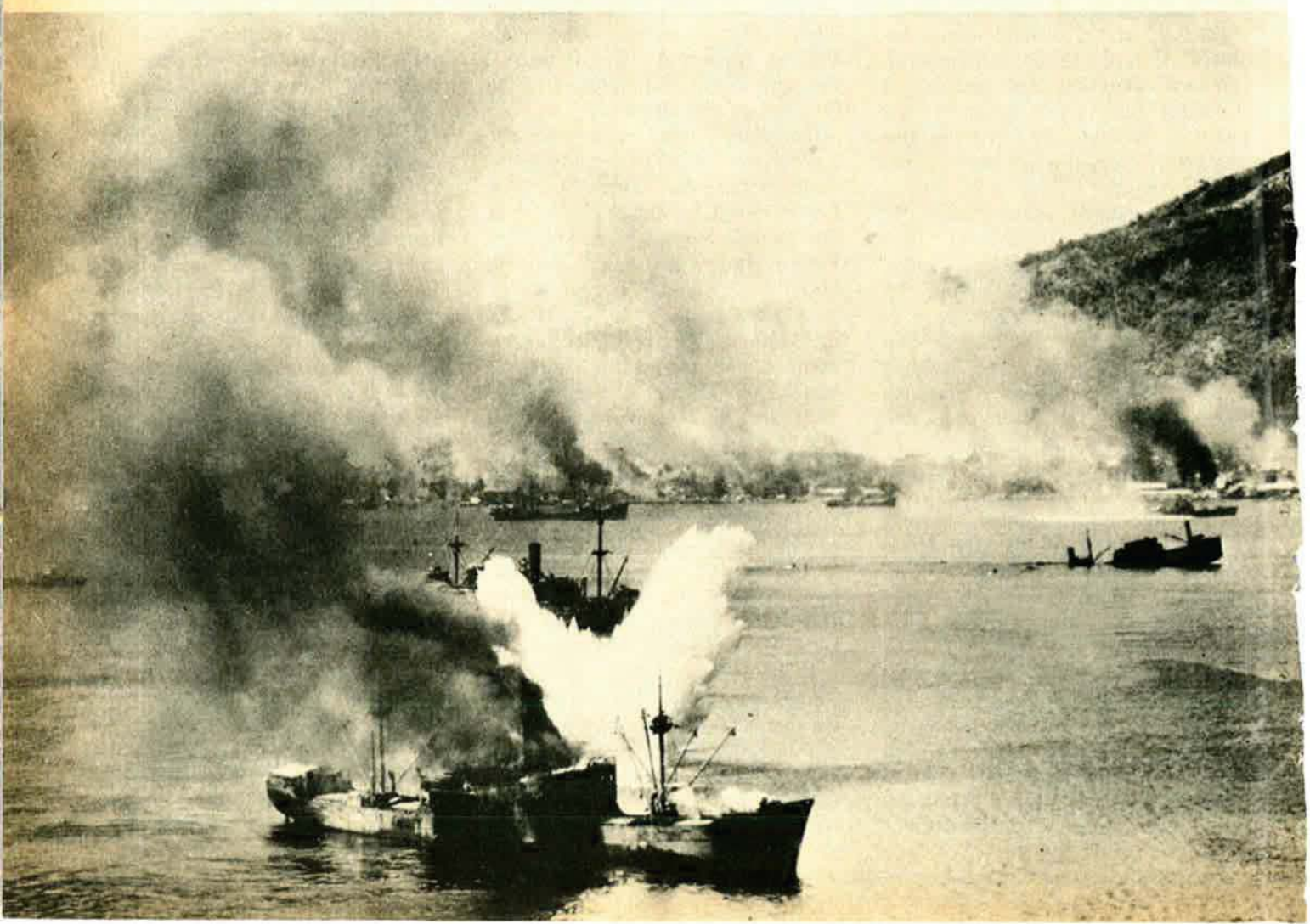
four-star general, who on September 1, 1975, moved from his position as Vice Chief of Staff, USAF, to become CINC USAFE) in *Seabiscuit*—a less than appropriate name, as she was thought to be the slowest B-25 in the Fifth Air Force. Simpson Harbour was a bowl below them, packed with shipping frantically attempting to maneuver in the crowded anchorage. The town was lost in white smoke.

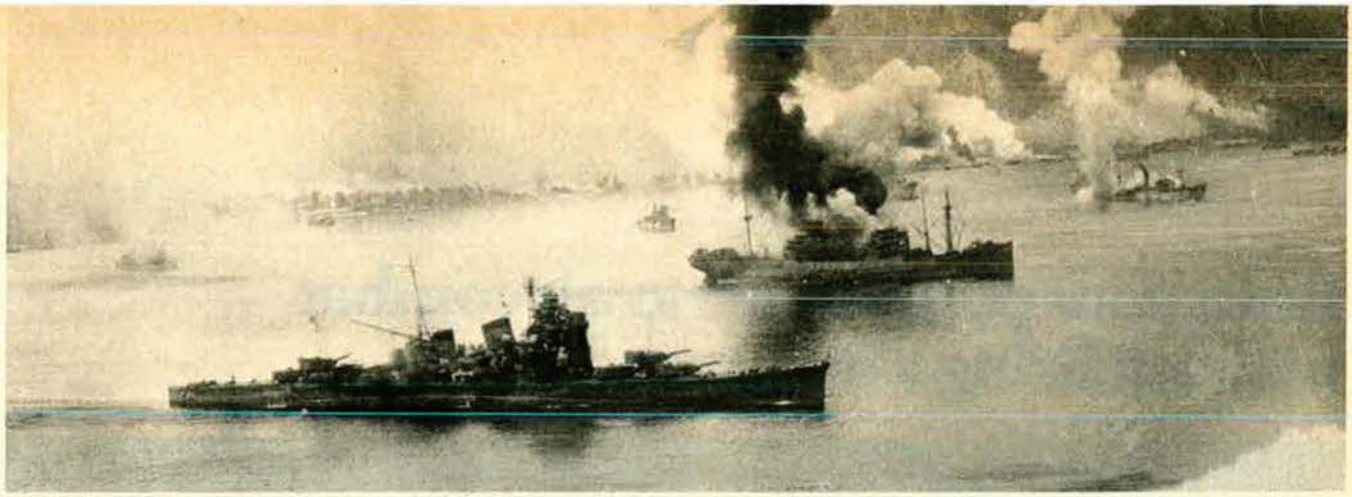
Henebry picked out three ships in a line—a freighter, a transport, and a cruiser. Ellis went after a destroyer tender. Howe broke off to the left and roared toward a transport. The ships in the harbor were firing at the B-25s, and huge waterspouts rose up in front of the strafers.

Strafing the freighter, Henebry thought he saw some fires before he dropped his first bomb, which he believed hit its target. Speeding on toward the transport, his second bomb definitely hit the ship and set it afire. But the cruiser was a lot closer than Henebry had thought, and pulling up over the freighter he had exposed his B-25 to the enemy's fire while unable to bring his nose guns to bear on it. He could see the Japanese gunners tracking him, but he was unable to return their fire. He felt the hits and knew his aircraft was badly damaged. There was no way to keep a formation in the harbor and *Notre Dame de Victoire* was on her own; he had to get out quickly.

Seabiscuit was low to the water as Ellis followed his gunfire across the harbor. His first bomb dropped when he was about fifty feet from the tender. He sighted a transport ahead, but in between there was the heavy cruiser, trying to clear the harbor. Her main turrets were pointing directly at the B-25s. Flying at fifty feet, *Seabiscuit* was thrown about by concussion from the big shells. The B-25 shot across the forward turrets, and the bomber crew could see the Japanese on the bridge. Gunfire whipped *Seabiscuit's* tail, and her nose dropped as Ellis and his copilot fought with the controls. She leveled off ten feet from the water, and Ellis opened fire on another ship. The B-25 skidded toward its target as Ellis held the bomb release. He dropped his other two bombs, smoke boiling from the ship as they fell true, and strafed a gunboat on his way out of the harbor.

Jock Henebry set this ship afire. The Allied communiqué claimed that Fifth AF had "swept the harbor clean," but postwar assessments scaled Japanese losses down considerably. Other raids, continuing into 1944, left Rabaul a battered ruin, and there was no need to capture it.





With smoke rising from damaged vessels all around it, a Japanese heavy cruiser gets under way in Simpson Harbour. In the November 2 raid on Rabaul, eight B-25s and nine P-38s were lost and others limped home only to be junked, but Fifth AF claimed the destruction of ninety-four Japanese aircraft.

*Here's **Howe*** had dashed toward a freighter at 230 miles an hour. Howe opened fire on it from 800 yards and kept firing until forced to pull up his B-25 to clear the superstructure. One of his bombs was dropped early and skidded into the side of the ship, the second banged off the decks. The freighter sank immediately.

As the B-25s hugged the lava slopes of Vulcan Crater on their way out, the final wave of three squadrons was coming in, led by Maj. Raymond Wilkins' 8th Bomb Squadron. Wilkins had flown the sole surviving A-24 Dauntless back from a deadly mission in July 1942, and had confided over late night drinks that he was kept alive by some "magic."

Wilkins had to make a late change in tactics because of the smoke blanketing the harbor, and was forced to lead his bombers through heavy fire. Flying on the left flank, he was in the most vulnerable position. His plane was hit almost immediately. The right wing was badly shot up, and at masthead altitude Wilkins had to fight desperately for control. Rather than pull up to safety, he kept on.

His nose guns tore through a cluster of small vessels, and then he headed for a destroyer. His bomb hit amidships, but not before his victim's gunners had shredded the left stabilizer of the B-25. Still Wilkins kept on. Another bomb plowed into a transport, setting it ablaze.

With his crippled aircraft he began leading the withdrawal, but a heavy cruiser was between him and safety. Wilkins went in to strafe it. The cruiser blasted off what remained of the left stabilizer. Wilkins had to turn or collide with his wingman, but in turning he exposed the lower surfaces of his plane to the Japanese gunners. Shellfire disintegrated his left wing, and the B-25 plunged into the water. Wilkins was awarded the Medal of Honor posthumously.

Past the harbor, Henebry's *Notre Dame de Victoire* had an engine mangled by fighters, but he was able to ditch successfully just off Kiriwina, where Howe was waiting to fly him and his crew back to Dobodura. *Seabiscuit* got home about 5:00 in the afternoon, a little behind the faster B-25s.

The Seeds of Controversy

November 2 had been the most costly attack on Rabaul. Forty-five pilots and crewmen were killed or missing. Eight B-25s and nine P-38s were lost, while other badly shot up aircraft barely made it home, to be junked. The B-25s had shot down twenty-six fighters, destroyed sixteen more on the ground at Lakunai, and ten floatplanes or flying boats in the harbor. The Lightnings claimed forty-two. Despite the confusion in the harbor, the attackers had been remarkably accurate, nearly all the B-25s scoring hits or near misses.

An assessment of damage to Japanese ships was difficult, but the official communiqué claimed three destroyers, eight large merchant vessels, and four coastal vessels sunk—about 50,000 tons—and that the harbor was "practically swept clean." A later Fifth Air Force report cut this back to 13,000 tons sunk, with damage to twenty-two other vessels. After the war, the Strategic Bombing Survey found the Japanese only admitted damage to a 10,000-ton tanker and the loss of three merchant vessels totaling 8,000 tons, a minesweeper, and two smaller boats. Also later, JANAC—the Joint Army–Navy Assessment Committee that went to Japan to compile as accurate a record as possible of Japanese merchant shipping and man-of-war losses, using Japanese sources—listed the sinking of just two ships in this incident—one of 1,503 tons and the other 3,119 tons.

It was probably the November 29, 1943, issue of *Life* Magazine that brought the controversy to a head. The caption under the famous photo of a Wolf Pack strafer racing across Simpson Harbour stated that in a series of raids the air forces had destroyed 140 vessels and 700 aircraft in and around Rabaul. It seems the exaggeration emanated from a background briefing given to newsmen by one of MacArthur's staff, in direct contradiction to MacArthur's stated principle of "the real facts" rather than "some more palliating impression."

Only the rusting wreckage at the bottom of Simpson Harbour can tell the real story, but there is no doubt about the heroism of the men who flew against Rabaul.

After November 11, the further reduction of Rabaul was turned over to the Thirteenth Air Force, while the Fifth shifted its operations to Wewak and Hollandia, on the north coast of New Guinea, and to targets in the Admiralty Islands. By mid-February 1944, Rabaul had ceased to be a threat to the Allied advance northward toward Tokyo. ■

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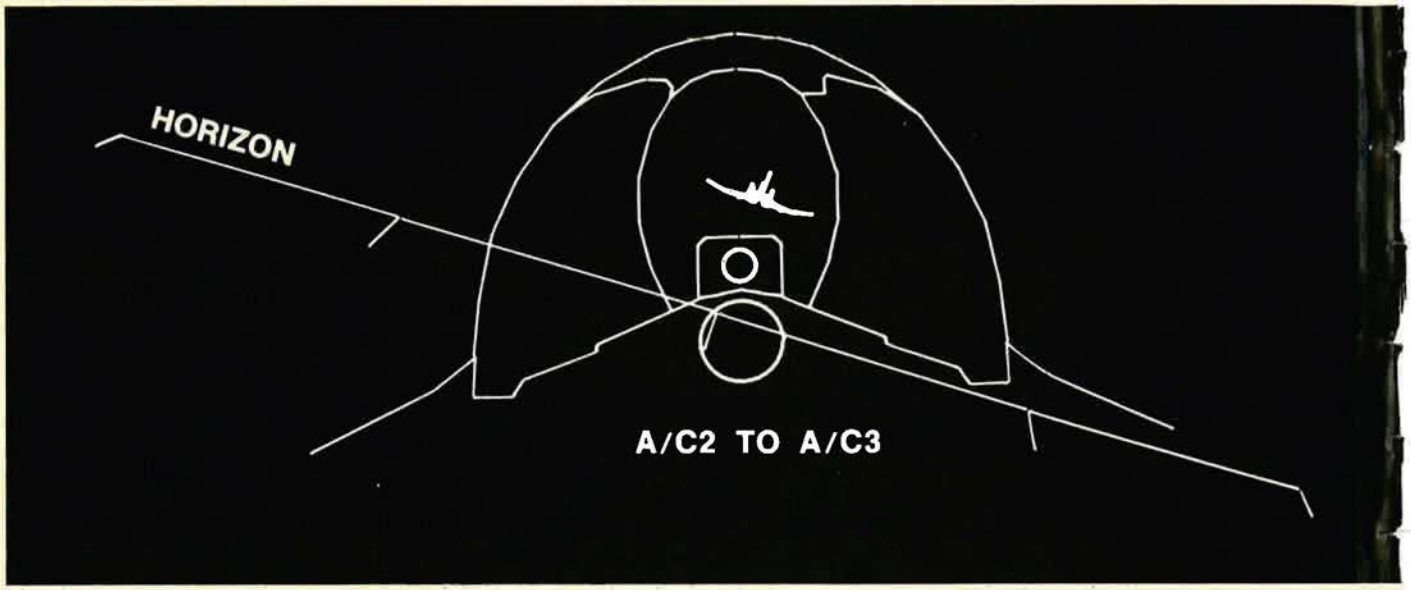

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In February 1945, the author (then a colonel) and Brig. Gen. Arthur W. Vanaman, the senior American POW in Germany, were sent by their captors to Berlin under the guise of early repatriation as a reward for their leadership of the POWs at Stalag Luft III. The real purpose, they soon discovered, was to involve them in a plot to overthrow Hitler and end the war in the West in order to check the Soviet advance into Europe . . .

SECRET MISSION TO BERLIN

BY MAJ. GEN. DELMAR T. SPIVEY, USAF (RET.), WITH CAPT. ARTHUR A. DURAND, USAF

ALONG with almost 2,500 other men, I gazed at the flak-filled skies over Berlin. The distant rumble of exploding bombs from 2,000 US bombers reassured us that Berlin was really catching hell. We were all POWs from Center Compound, Stalag Luft III, and were the last contingent of the 9,500 AAF officers to be evacuated from that sprawling complex in eastern Germany.

On January 27, 1945, the Germans had marched us westward in an effort to keep us out of the hands of the rapidly advancing Russian army. It was a miserable forced march through snow and bitter cold, without adequate food, water, or shelter. Now at Spremberg, southeast of Berlin, we were sick, tired, hungry, cold, and dejected. The sight of the bombing raid on Berlin gave our spirits a much-needed lift.

The respite, however, was short. While the other POWs were crammed aboard cattle cars for shipment to Nuremberg and Munich, Brig. Gen. Arthur W. Vanaman, Col. Bill Kennedy, Capt. "Pop" George, Lt. Willard Brown, and I found ourselves heading for Berlin. Angry and distrustful, I didn't believe the German explanation that we were being singled out for early repatriation because of the "leadership we provided during the evacuation westward." More importantly, I had been with the men in Center Compound for almost two years and very much wanted to remain and to share their fate.

General Vanaman felt the same way. Unlike me, however, he saw an advantage in going along with this German "cover" story. Ever since his capture, he had felt the Germans

would try to use him in some manner. He was the highest ranking American POW, had served as Assistant Military Attaché for Air in Berlin during the turbulent years from 1937 to 1941, and had a good command of the language. Like the rest of us, he was aware that the plight of all POWs was worsening daily as Germany's communication and supply systems collapsed. Ensuring the survival of the POWs in the days ahead would be difficult. One way to increase the odds was to be present in Berlin where the decisions were being made.

A Piece of the Puzzle

The sight of Berlin left no doubt in our minds that the end of the war was near. The train station was jammed with frantic, weary, tearful people. Outside, steetcars lay overturned, dead horses remained hitched to their wagons, and burned-out buildings flanked the wide streets that were piled high with personal belongings. We were afraid the crowd might turn on us, but everyone seemed preoccupied with his own survival.

After a hideous night walk across Berlin, we were taken by train to Luckenwalde, a camp about twenty miles southwest of Berlin where some 40,000 POWs were housed. Our guards delivered us to the camp commandant, whose reaction seemed to confirm our worst fears; he was not expecting us and knew nothing of any plans for our repatriation. As the days passed, our suspicions and anxiety grew. Finally, after two weeks, came the first hint of what lay ahead.

A young German medical captain, Helmut Bauer, walked into our quarters and in perfect Midwestern English asked if he could talk with us. He had lived in the States from the age of three, he told us, but had returned to Germany to pursue his medical education and was now assigned to the headquarters staff of Lt. Gen. Gottlob Berger, the officer charged with the care of all POWs in Germany. Bauer offered to help us in any way he could.

We knew that no Red Cross food was being delivered to the POW camps in Germany. Misery, malnutrition, and sickness were endemic. General Vanaman asked that Bauer arrange for him to go to Switzerland and coordinate with US representatives the movement of food from Switzerland to the camps. He gave his parole to return.

In a few days, Bauer appeared with news that General Berger had approved the trip. We weighed the possibilities of being court-martialed, or at least reprimanded, for seeming to connive with the Germans, but concluded the risk was worthwhile if we could help alleviate the plight of the POWs.

We began planning for the mission, but soon Dr. Bauer informed us that the trip would have to be delayed because of "difficulties" General Berger was having with Goebbels and Bormann. We did not know, of course, that the difficulties stemmed from our being enmeshed in the deadly factionalism then rampant in the Nazi hierarchy.

General Berger had not revealed his plans for us to Goebbels, Bormann, Himmler, or Hitler. The spy networks at their disposal made it imperative, but difficult, for General Berger to keep our whereabouts and mission a secret from them. If they had known what was happening, our heads, along with those of General Berger and some members of his staff, would have rolled.

To further complicate matters, the Dresden raids in February 1945 sent Hitler into a rage. He ordered that all flyers be taken into the centers of the larger cities and left in the open to be killed by Allied bombs. Largely through the intervention of his close friend, Eva Braun, Hitler's mistress, Berger was able to circumvent this and other vicious orders affecting the lives of POWs, but he knew there were limits to his freedom of action. He abandoned the scheme for General Vanaman's journey to Switzerland. It involved too much risk and threatened to disrupt further plans he had for us, conceived in part by Dr. Helmut Haubold, another member of Berger's staff.

As early as December 1944, Haubold began searching for ways to alleviate the worsening plight of the POWs. He devised a plan for a conference between the several parties who influenced or controlled the flow of food and medical supplies to the POWs, in an effort to ensure that the coming crisis would be dealt with as effectively as possible. Berger was in favor of the conference, but felt the senior POW officers would have to participate and approve the proceedings before they could succeed. It was, in fact, for this conference, not for repatriation, that we had been brought to Berlin.

The Web of Intrigue

The conference took place on Schwanewerder Island in the Wannsee on the outskirts of Berlin, in an impressive house located a block from the Danish Embassy in one direction and a block from Goebbels' summer home in the

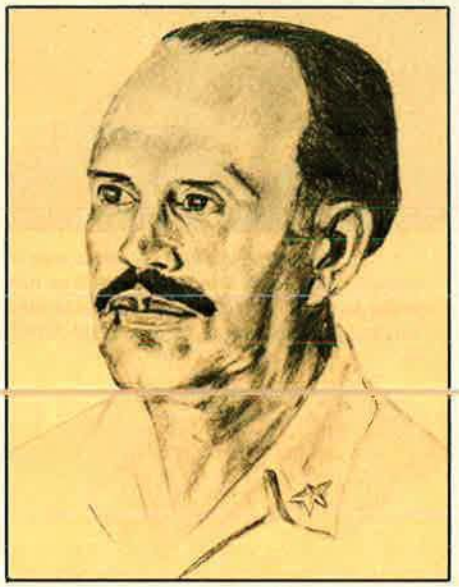
other. Eight American and several other English-speaking doctors from various prison camps arrived shortly. As Berger had anticipated, these men were enraged at the Germans for having taken them away from their camps and were thoroughly convinced the entire setup was a propaganda move. Since most of them were determined to be uncooperative, General Vanaman called a meeting to explain the situation. He asked for and received their full cooperation.

The meeting got under way on March 28. Dr. Haubold and I (serving as recorder) drew up a number of recommendations that were put into an agreement that was approved by General Vanaman and the Germans. One of its primary stipulations was that an American, Dr. Gordon Keppel, and a German, Dr. Kim Stein, were to pool medical supplies and visit American camps on a motorcycle and sidecar to try to control epidemics. A British and a German doctor teamed up to visit Commonwealth camps. All the evidence suggests that the Germans did their best to implement these and the other measures agreed to at the conference. In later years, the German doctors were to become my good friends.

When the conference ended, the doctors went their respective ways, but Vanaman and I were detained in Berlin. We insisted that we be sent back to one of the camps, but our demands were ignored. Again we feared for our lives. Throughout the conference, we had been drawn aside by Germans who warned us of the danger we were in. We were told that Goebbels had seen us, shown his anger over our presence in Berlin, and demanded that Berger turn us over to him. We longed for the relative safety of a prison camp, but having no alternative, sweated it out, anxiously awaiting the next German move.

While we waited and fretted, Max Schmeling, heavyweight boxing champion of the world from 1930–32, whom I had met a short time before, took us to his home in Berlin. He led me upstairs to his office and opened a huge rolltop desk which concealed a situation map. The map clearly showed that Berlin's fate was already sealed. Schmeling asked if I would sign a statement certifying that he had visited American POW camps, boxed with Americans, and entertained them. I explained that I could not do this, but assured him that he was well known to Americans and would not need such a paper.

Schmeling then wanted to know if he could



Above, Cols. William L. Kennedy (left) and Delmar Spivey, both of whom later became major generals. The picture was taken in Spivey's room at Stalag Luft III. At left, a wartime sketch of Brig. Gen. Arthur W. Vanaman.

Lt. Gen. Gottlob Berger, who was in charge of all POWS in Germany, was one of the several individuals and groups who plotted independently to get rid of Hitler.

do anything for me. I asked if he could get us back into POW channels. When he said he could not, I switched to a plea for a fellow POW, Col. Russ Spicer, who was under a death sentence for antagonizing the Germans at Barth (Stalag Luft I) on the Baltic. Max replied, "No problem. I'll jump in my car tomorrow and go to Barth. Don't worry." Colonel Spicer's life was spared, but although he refused to give Max any credit, he did report later that Schmeling had visited him at Barth, and his sentence was commuted right after the visit.

We left Schmeling's residence and resumed our anxious waiting. Much to our dismay, we soon learned that General Berger had further plans that involved us in the dangerous game of seeking a negotiated end to the war by betraying Hitler and all of his cronies.

Caught in the Web

On the evening of April 3, we were taken to General Berger's headquarters. Berger was no small fry in Nazi circles. He would later be among the top men tried and convicted at Nuremberg. At the time we met him, he was an Obergruppenführer and General Waffen SS, the officer in charge of all POWs in Germany (which he estimated at ten million) and Commanding General of the Russian troops who had been recruited from the ranks of the Russian POWs under German control.

Berger was an impressive-looking man. After a hearty greeting, he took us to his inner office and immediately launched into a briefing that lasted throughout the night. He told us about his battles with the Russians and the loss of two

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Retired Maj. Gen. Delmar T. Spivey is a 1928 graduate of the US Military Academy. After World War II, he served as Deputy Commander for Education, Air University; Chief of the War Plans Division, Hq. USAF; and during the Korean War as Deputy Commander, Fifth Air Force and Commander, Japan Air Defense Force. Prior to retirement in 1956, General Spivey was Commandant of the Air War College. From that time until 1970, he was Superintendent of Culver (Ind.) Military Academy. General and Mrs. Spivey now live in Bellaire Bluffs, Fla.

Capt. Arthur A. Durand, a member of the Air Force Academy History faculty, is completing his doctoral studies at Louisiana State University. He is writing his dissertation on the history of Stalag Luft III.

of his three sons in the war, discussed the conduct of the war on many fronts, and spoke proudly of the Russian soldiers he now commanded. Underscoring his entire briefing was an emphasis on how he and other high-ranking generals planned to defeat the Russians with German and Russian troops. He repeatedly intimated that the Americans should join in this effort.

Berger expressed his firm belief that within five years most Americans and Englishmen would regret it if they did not join forces with the Germans in these last days and crush what he called "the common foe." He talked until almost 4:00 in the morning with only one interruption, caused by an RAF Mosquito raid. He sent us scurrying to his bombproof shelter in the garden, while he remained in his office. A blockbuster hit nearby with devastating effect—for us, a most pleasing but nonetheless frightening experience.

After we returned from the shelter, General Berger explained why he had sent for us. He was confident there were still enough Germans to beat the Russians if they did not have to fight the Western Allies at the same time. Berger was determined to find a means for negotiating a separate truce with the United States, the British Commonwealth, and France. He hoped that they would join Germany in an effort to stem the Red tide.

Berger knew the West would never consider this while Hitler was in power. He had concluded that Hitler was insane and that the Führer, Bormann, Himmler, and Goering must all be circumvented in a last-ditch effort to save the Fatherland. Specifically, he proposed that we take codes and radio frequencies to the American forces by way of Switzerland, so they could contact the SS as a prelude to peace negotiations. As an inducement to the West, Berger asserted that he could produce sound evidence that the Russians had reached a special agreement with the Japanese promising not to attack Japan. He then asked us to report to SS Headquarters for a briefing by Walter Schellenberg, Himmler's intelligence chief, and one of the few Nazi officials in on the plot, to obtain the codes and arrange for our being smuggled out of the country into Switzerland.

General Vanaman and I agreed that any move was better than remaining where we were. We told Berger that we would take the messages with the understanding that we could not endorse his ideas or guarantee any reaction on the part of our government. He said he understood our limitations and simply wanted us to take his messages and codes to the proper authorities.

The whole scheme was fraught with great danger, but we consoled ourselves with the thought that we might be implements for stopping the war a little sooner than if the Allies had to complete the invasion of Germany. We concluded the meeting by requesting and receiving assurances from Berger that he would continue to safeguard POWs, deliver Red Cross food to them, and prohibit any further mass movements of POWs.

Running the Gauntlet

The next afternoon, Schellenberg briefed General Vanaman and assigned an SS man, Maj. Heinz Lange, to be our guard and escort on the trip to Switzerland. Lange was given an elaborate pass with Himmler's forged signature, instructing all Germans to give us safe conduct since we were on a "War Decisive" mission for the Reich.

We departed for Switzerland in a small car at 3:00 o'clock on the morning of April 5. It turned out to be another hair-raising experience. Our driver, who persisted in dozing off, took us down the Autobahn at about 120 km. an hour. Despite our best efforts to keep him awake, he finally ran off the road and down a forty-five degree embankment. We careened on two wheels toward a great boulder, hit it a glancing blow, and continued on into a pine tree that brought us to an abrupt halt. Our driver found a piece of wood, pried the fenders off the wheels, looked over his steering gear, changed one wheel that was completely smashed, and to our amazement the car was ready to go. It made funny noises, but it ran.

Everywhere there were abandoned and burned-out trucks and pieces of ordnance that had been shot up on the highway. We almost got caught ourselves when several P-51s attacked a convoy of trucks ahead of us, but our driver got us into a nearby woods. We stayed on side roads after that.

The next day, we stopped briefly at Nuremberg and were reminded that the shambles before us was the work of our "Luft [Air] Gangsters." Not far below Nuremberg we passed through a bottleneck formed by the Russian and Allied armies as they approached each other. The two armies were then not more than thirty miles apart, and we could hear gunfire and see where shells had spattered across the road.

At Munich, we received civilian clothes to wear over our uniforms. I shall never forget the sight of General Vanaman decked out in a skiing cap and a long gray overcoat with a patch over the left breast covering a hole about the size of a half dollar, a sight that led us to suspect that the previous owner had been the victim of an excellent marksman.

We donned our new but ill-fitting clothes and two days later arrived at Meersberg, where we took the ferry to Staad, just five miles from Konstanz, Switzerland. There we saw the first of the Red Cross trucks General Berger had spoken of. While at Staad, Major Lange had a shoemaker hide the code and other papers in the heels of General Vanaman's shoes.

Two days went by, and still the Major got no instructions from Berlin to push us across the border into Switzerland. He said everything had been coordinated with the local Gestapo and SS people, and now only needed final approval from Schellenberg in Berlin. But it never came! Instead, Himmler had in the end found out about us and sent a message to Major Lange. Lange claims the message ordered him to return us to Berlin. But General Vanaman saw either the first message itself or an ensuing one and concluded that Lange had orders to dispose of us.

Much to his credit, the Major took it upon himself to ignore whatever orders he had received. To our great relief, on April 23, Lange delivered us to a man named Egan, the regional civilian governor, who put us across the border at Horst, into Switzerland and freedom.

We quickly cleared through the appropriate diplomatic and military channels. I then went to General Spaatz's headquarters in France, and helped make preparations for the return of the other POWs. General Vanaman was whisked off to Washington where he delivered his papers to the War Department and briefed G-2 on the whole situation as we knew it. He then returned to France to help get the POWs home. No action was taken upon Berger's proposals. By this time, the war was all but over, and the Allies were interested only in unconditional surrender.

The Perspective of Time

Of what importance was this secret mission and how successful was it? These questions have recurred in my thinking since the war, and the search for answers to them led me back to Europe five times where I researched the records and interviewed many of the people we met during the episode.

General Berger's peace efforts were given short shrift by the Western Allies. More important than delivering the codes, however, was the impact our mission had in helping alleviate the plight of the POWs. Indirectly, at least, our negotiations in Berlin led to saving thousands of lives and untold misery among the POWs. The available evidence supports this conclusion.

The key to this achievement was Berger himself, who unquestionably held the fate of all the POWs in his hands. There is evidence that Hitler ordered the liquidation of the POWs and wanted the supplies destined for their camps to be turned over to the civilian population. Berger repeatedly ignored Hitler's demands. He hosted the medical conference we attended and negotiated with personnel of the Protecting Power and the International Red Cross for Red Cross supplies, carried in trucks provided by Supreme Headquarters, Allied Expeditionary Force (SHAEF), to be given safe passage through Allied and German lines.

Without his efforts, the supplies would, in all probability, never have reached the starving men in the camps. Even slight delays, such as those that would have occurred if the POWs had been kept on the march, could have been disastrous. One reliable report indicates that almost half of the prisoners were ill with dysentery and malnutrition by the time the trucks arrived. Within two weeks they were on their feet, and their health was vastly improved at the time of liberation. The judges at Nuremberg recognized these facts, as evidenced by Berger's greatly reduced sentence and early release from prison.

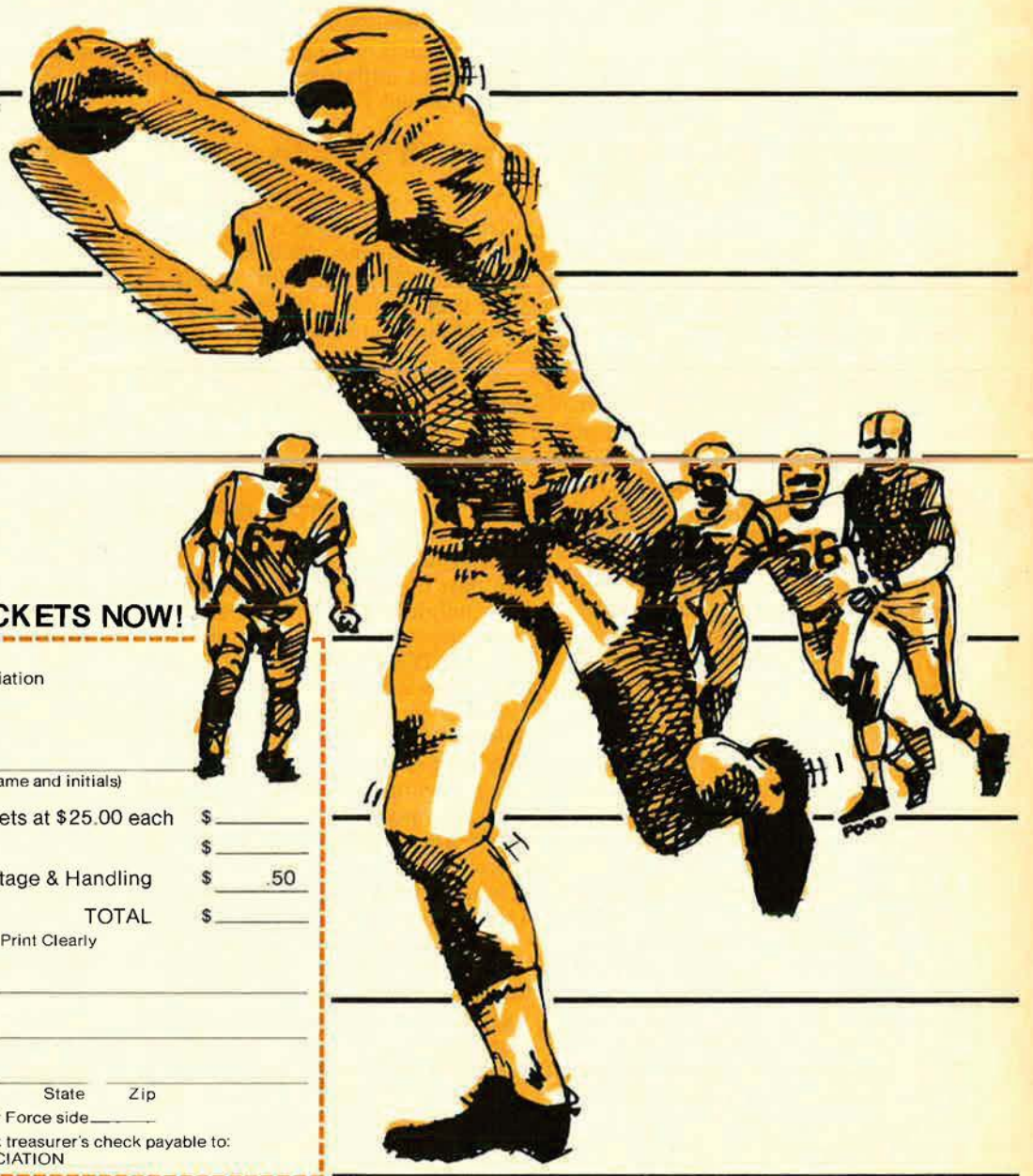
Why did he take such risks and how can one reconcile his humanitarian efforts with the bad image of the SS? The answer lies partly in the fact that Berger was a proud Waffen SS general of the line—not one of Himmler's henchmen. Born in 1896, he was a product of an earlier Germany that bore little relationship to Hitler's world.

Another part of the answer perhaps lies in the nature of our contact with Berger. He needed us for the medical conference and to carry his codes to the West. Before consenting to these tasks, we were careful to exact promises that he would do all in his power to alleviate the plight of the POWs. Berger knew that if his truce offer was to be taken seriously, he must establish his credibility. One way to do that was to fulfill the promises he made to us in Berlin. During my visits with him in prison and later at his home, I became convinced that he was not only an excellent general but a man of deep humanitarian instincts, with a profound sense of duty.

General Vanaman and I take great pride in the thought that to a significant degree, General Berger's humanitarian conduct arose from our actions during that frightening, but memorable and fruitful, secret mission to Berlin. ■

FOOTBALL!

Air Force Academy vs. **US Navy Academy** at R. F. Kennedy Stadium
Washington, D.C., Saturday, October 4, 1975, 1:30 p.m.



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The Bulletin Board

By John O. Gray
MILITARY AFFAIRS EDITOR, AIR FORCE MAGAZINE

Status Report on AFA Resolutions

At its National Convention last September, the Air Force Association adopted fifty-seven policy and general resolutions, some new, some continuing. AFA strongly supports these resolutions and constantly works for their approval. A status report as of early August 1975 follows:

Policy Resolutions

(In early August, the Senate rejected a House/Senate conference committee report on the military procurement authorization bill that authorizes funds for weapons and R&D for FY '76 and the following three-month budget transition period, FY '76T. The surprise action leaves the status of items embodied in several resolutions up in the air until September when Congress returns from its latest vacation and a new conference committee can act. Prompted by its Budget Committee, the Senate is seen cutting the bill below the $31.1 billion authorized by the first conference committee, and subsequently by the full House.)

1. Minuteman Missile Force: Both Houses of Congress agree on $724 million for procurement of fifty Minuteman III missiles and continuation of Minuteman modernization. Still needed is agreement on language in the bill.

2. Strategic Airlift: The House earlier authorized $46 million to begin a small prototype program to modify aircraft in the Civil Reserve Air Fleet. The Senate rejected it. Outcome up to the new conference committee.

3. Tactical Airlift: Both Houses have authorized $85 million for R&D on the Advanced Medium STOL transport. It's what USAF requested.

4. Remotely Piloted Vehicles: Both houses have authorized $19 million through September 1976 for drone/remotely piloted vehicle systems development.

5. Advanced Space Defense: Exploratory research is in progress without commitment to specific technological initiatives.

6. SLBM Warning System: Both Houses have agreed on $560 million for this and other USAF military astronautics R&D programs.

7. Lightweight Fighter: F-16 prototypes are currently undergoing tests with an eye to establishing complete specifications of the USAF's Advanced Combat Fighter. The Senate/House Conference Committee had authorized $221 million for continued R&D.

Continuing Policy Resolutions

1. B-1 Advanced Bomber: The rejected House/Senate conference report authorized $800 million for R&D and $87 million for long-lead-item procurement, close to the Administration's request. Cuts in the second report are feared likely.

2. F-15 Advanced Fighter: The full $1.4 billion in the Administration's FY '76 budget, to buy 108 F-15s, was authorized in the first conference report. Whether it will be in the second report remains to be seen.

3. A-10 Aircraft: Outcome up to the new conference committee; the first authorized funds for production of ninety-one A-10s.

4. Air Defense: Six AWACS were approved last year. Prior to the first conference report, which authorized $460 million in production funds and $253.6 million for R&D, the two houses were in wide disagreement.

5. Advanced Airborne Command Post: The Administration has deferred this program and withdrawn a request for $185.8 million for three aircraft plus spares.

6. AWACS: See item four above.

7. Defense R&D Program: AFA wants a national defense R&D effort "second to none." The rejected conference report on the procurement bill authorized $9.7 billion in FY '76 for RDT&E. Actual appropriations last year: $8.9 billion.

8. Amnesty: AFA holds, along with the Administration, that each case should be examined and settled separately according to existing laws and rules.

9. Status of MIAs and POWs in SEA: AFA, while urging the government to take all necessary steps to secure an accounting, is aware of the difficulties.

10. Advanced Technology for Missile and Space Systems: This resolution urges expansion of technology programs in ballistic missile and military space systems.

11. Space Shuttle: AFA calls on the government for full-scale backing to achieve a superior Space Shuttle program.

Continuing General Resolutions

A. Amendments to the Dual Compensation Act: Current law requires retired Regular officers to give up part of their retired pay if they take Civil Service jobs. Through this inequity the government loses top executive talent. Corrective legislation has been introduced by Rep. Bob Wilson (R-Calif.), but no early action is likely. Federal employee unions remain opposed.

B. National Guard Technician Retirement: This resolution endorses the amendment of Title 5, U. S. Code, to eliminate the fifty-five percent restriction and to give full credit for service performed before the 1968 National Guard Technician Act. Legislation to accomplish this has been passed by the Senate and it has now received full support from the House Post Office and Civil Service Committee.

C. Recomputation of Retired Pay: Although rejected by Congress the past three years, recomputation of retired pay (on January 1, 1972, pay rates) retains considerable support on Capitol Hill. Sen. John Stennis (D-Miss.), Chairman of the Senate Armed Services Committee, has indicated he would hold hearings on recomputation.

D. Dependents' Dental-Care Program: This resolution, adopted by AFA eight years ago, has been "un-

der consideration" by the Defense Department ever since. Because of its high cost (estimated at $100 million), it has been omitted from the Department's "legislative program" for the 94th Congress. No chance of enactment this year.

E. Reserve Retirement on a Reduced Annuity Basis: DoD's proposal would allow retirement as early as age fifty (it's now sixty), but at a greatly reduced rate. Example: at age fifty-two, only 37.2 percent of the normal rate. Accordingly, most Reservists oppose it. Rep. G. V. Montgomery (D-Miss.) is sponsoring a more reasonable bill. Any action this year is unlikely.

F. Trailer Moves and Dislocation Allowances for Military Personnel: AFA and the services endorse the idea of reimbursing trailer owners for the full cost of their PCS moves (rather than the current seventy-four cent per mile rebate ceiling) and paying dislocation allowances. The White House moratorium on spending for new personnel programs remains the big deterrent.

G. Enlisted Representation on Air Force Aid Society Board: The Chief Master Sergeant of the Air Force should become an ex-officio member of the AFAS Board of Trustees, AFA believes. Board members disagree.

H. Support of the Community College of the Air Force: AFA continues to support the CCAF and is pleased to note that it has extended eligibility in its study programs to enlisted Air Force Reservists and Air Guardsmen.

I. Employer Support of the National Guard and Reserve: The National Committee for employer support of these organizations has persuaded thousands of firms, agencies, educational institutions, etc., to encourage their workers to participate in the Reserve Forces.

J. Incentives for Members of the National Guard and Reserve Forces: Defense Department proposals to provide Reservists and Guardsmen with tuition aid and other incentives and authorize additional creditable training points toward retirement are bogged down because of their price tags.

K. Earlier Retirement for Civilian Employees: AFA supports lower combinations of service-age retirement options in the interest of maintaining a viable civilian work force and promotion opportunities. USAF plans a legislative proposal incorporating such changes.

L. Increased Unaccompanied Baggage for E-4s Under Four Years' Service: The resolution calls for raising their unaccompanied baggage limit to at least 425 pounds gross weight. Meantime, a proposal to boost the allowance to a net 500 pounds for E-4s with two years' service and below has been advanced. Outlook dim for both.

M. Low-cost Housing/Mobile Homes for Airmen Under Four Years' Service: The Pentagon continues to favor conventional homes through new construction or community support, to meet shortages; it opposes buying mobile homes. But as a practical matter, little new family housing of any kind is being approved.

N. Support of Air Force Enlisted Widows' Home Foundation: A number of widows have moved into an interim facility, Theresa Village, an apartment complex purchased this spring by the AFEWH Foundation. It is located at Fort Walton Beach, Fla. Meantime, H. R. 3569 sponsored by Rep. Robert L. F. Sikes (D-Fla.) would provide seventy-nine acres of land for a permanent facility at Eglin AFB, Fla. AFA units have raised $12,940 for the Foundation.

The Bulletin Board

O. CHAMPUS Authorization for Retirees over Age Sixty-five: Rep. Charles E. Bennett (D-Fla.) has introduced a bill to accomplish this, but favorable action is unlikely. The thrust from the Pentagon is to curtail, not expand, CHAMPUS.

P. Improvement of the Military Survivors' Benefit Program: Several changes to improve the SBP have been advanced in Congress and within the Administration. No hearings have been scheduled.

Q. Performance Rating System: This resolution urges elimination of the Performance Rating Act and replacement with a law covering all performance evaluation objectives that would simplify administration and let management effectively evaluate an employee's performance for specific purposes.

R. Civilian Mobility: Authorization of a government-paid move on retirement, for employees who had executed a "mobility agreement," is the objective of this proposal. It has the firm backing of the Air Force.

S. Disability Retirement: Provision for a lump-sum payment on retirement for employees taking a disability retirement is the aim of this resolution. It would allow management to promptly replace key personnel retiring for disability. Supported by Defense, but no legislation has been submitted.

T. Payment of Travel Expenses for Civilian Presidential Appointees to First Duty Station and Return to their Home of Record: Air Force and Defense support this resolution, but necessary legislation has yet to be drafted.

U. Award of E-3 Rank to AFJROTC Graduates Entering USAF: Because the present "recruiting climate" is excellent and for other reasons, the Air Force opposes this resolution.

V. Increasing Air Force Junior ROTC Units: This has been under study in the Defense Department, but severe budget constraints make early action unlikely.

W. CAP Search Missions: Legislation to bolster CAP's search mission capability has been introduced. However, the Administration recently rejected a Defense legislative proposal that would have allowed an expanded CAP program.

New General Resolutions

1. AFA Flag: A forty-five by fifty-two-inch AFA banner, on which chapter names and/or numbers can be added, has been approved and is available at a nominal cost. Details have been sent to all field units.

2. Military Health Care: AFA urges the government to formally recognize the vital role the military medical services are playing in maintaining the US defense posture and to provide whatever funds are necessary to maintain an effective and viable worldwide military medical health care system. Meantime, action on health care is held in

Ed Gates . . . Speaking of People

What Are the Prospects for a Military Union?

Recent headlines stating that a prominent AFL-CIO affiliate will attempt to organize military personnel have produced shudders throughout the Pentagon. Defense Department leaders have revived and reiterated firm statements strongly opposing the idea. The Department holds that "commanders are not authorized to recognize or bargain with a so-called serviceman's union." Senior officers, of course, are solidly opposed to a military union.

The American Federation of Government Employees thinks differently. It has 350,000 federal civilian workers as members. It also represents hundreds of thousands of others under various contracts with federal agencies. To these the AFGE leadership wants to add enlisted members of all services, but not officers, a spokesman for the organization told AIR FORCE Magazine.

Thus the battle lines are firming; an eventual acrimonious confrontation is a distinct possibility.

But not immediately. No formal decision to proceed with the unionizing effort is possible until the AFGE's constitution is changed. And that can't be done until and unless the membership—at the AFGE's convention next summer—approves, the spokesman said. But he indicated a "go" sign then is probable.

The delay, meantime, gives the opposition time to develop strategy to combat the move. It also gives prospective "recruits" time to appraise the situation. Will enlisted members in any numbers embrace a military union? As yet, there is little to so indicate, but that could change.

The union's basic game plan calls for plugging pay, benefits, and other bread-and-butter issues. It also sees itself representing service members in disciplinary hearings and court challenges, possibly involving such controversial issues as hair styles.

One reason the AFGE doesn't plan to organize officers, the spokesman acknowledged, is because of its strong continued support of the dual compensation statutes (which severely penalize retired Regular officers working for the government). Representing officers and upholding the prohibition on dual comp simultaneously would hardly be compatible, AFGE recognizes.

The union, brushing aside opponents' charges that it lacks expertise in the military personnel arena, claims success for defeating President Ford's bid to delay pay boosts for federal employees last year. It was then that the AFGE distributed handbills to thousands of service members who supported the lobbying effort.

It is this "linkage" between federal civilian compensation and military pay that should naturally tend to bring the service community under the union umbrella, the spokesman said. And some experts feel the AFGE has a foot in the door with Reserve and National Guard technicians, a few of whom already belong to the union. While sometimes called "quasi-military" personnel, they are basically civilians who put on their uniforms one weekend a month; and the union they belong to is strictly a civilian union.

Supporters of military unions also claim that "large numbers" of service members who moonlight have joined civilian unions while pursuing their second jobs. The actual number, while undeterminable, is probably tiny. A new USAF survey, for instance, reveals that 85.5 percent of all USAF's members do not hold a second job. And of the 14.5 percent who do, most work at them only a few hours a week. Hardly a climate producing many union members.

Military unions are nothing new in Europe. Denmark's was established fifty-three years ago. West Germany, Sweden, Austria, and the Netherlands are other European

abeyance pending release of a HEW-DoD-OMB study.

3. Special Pay for Military Physicians: This resolution urged full implementation of P. L. 93-274, providing Variable Incentive Pay of $10,000–$13,500 per year. This was accomplished by the Defense Department last September.

4. Support of CHAMPUS: Continued in-depth support of CHAMPUS by the government, not reductions of services as occurred earlier this year, is the thrust of this resolution.

5. Retirement Pay: This resolution, calling for an end to the "pay inversion" for retired military personnel, is close to achievement. An amendment, pending in the delayed military procurement bill, will assure that service members will not receive less retired pay by continued active duty.

6. Proposed New Military Nondisability Retirement Plan: This is Defense's controversial Retirement Modernization Act, resubmitted to Congress May 30. AFA wants the lawmakers, in any version of the RMA they may pass, to provide that any reduction in benefits would affect only persons entering military service after date of enactment. Action this year uncertain.

7. Defense Officer Personnel Management Act: AFA urges Congress to approve DOPMA soon and thus provide the Air Force an adequate number of permanent field-grade authorizations. DOPMA hearings were held early this summer. Enactment in late 1975 or early 1976 is likely.

8. Air Crew Status and Flight Pay of Air Force Flight Nurses: This resolution supports flight pay for flight nurses while they are engaged in flying duties. USAF disagrees. Since recruitment of flight nurses is not now a particular concern to the services, no early change is anticipated.

9. Variable Military Cost-of-Living Allowance: AFA believes that special allowances similar to those paid US military members stationed in high-cost areas abroad should be authorized for Stateside high-cost areas. Most authorities agree. The proposition continues under study.

10. Taxability of Moving Expenses: Provisions of a 1969 law require service people to pay taxes on PCS outlays and include as income "in-kind" reimbursement of moving expenses. The provisions have been suspended on a temporary basis. Permanent relief, which AFA endorses, may come via a proposal Defense is handling.

11. Family Housing for Lower-Grade Airmen: Congress scuttled earlier Defense plans to build family housing units for low-ranking families, and the outlook for subsequent approval is dim.

12. Survivor Annuity for Civilian Employees: This resolution was implemented by P. L. 93-474, October 26, 1974.

13. Extension of Time Limits for Awarding of Decorations: P. L. 93-469, enacted October 24, 1974, extends the time limits for recommendations based on acts, achievements, or service performed in SEA during July 1, 1958, to March 27, 1973.

14. AFJROTC Fourth Year Cur-

countries with similar organizations. The last mentioned, composed of about 30,000 persons, is cited by AFGE officials as an example of how a military union has "proved workable" and "achieved" such things as substantial pay raises, a cutback in saluting, and an end to bed checks in barracks.

US military officials are anything but impressed by the Netherlands' unionized force. And an article on NATO's forces in Western Europe—compiled from reports of *US News and World Report* foreign correspondents and published in the magazine's May 12, 1975, issue—holds that "the Dutch, once acclaimed as among the best in NATO, now are graded worst in terms of appearance and dedication."

A detailed study of military unions in Sweden, Denmark, and Austria appeared recently at the Air Force Institute of Technology, in the form of a graduate degree thesis by two USAF captains—Joseph P. Mockaitis and Donald E. Johnson. They found that in all three countries the unions "were helpful" in improving military pay and benefits. In Sweden, for example, they also found that improvements in vacations and working conditions "have been achieved through union effort."

However, on unionism in general, in Europe as opposed to the US, the captains wrote: "The general atmosphere of mutual trust and cooperation which characterizes labor negotiations in these foreign countries seldom exists here in the US, where unions strike much more frequently than in Europe."

The authors further stated that:

- Though military unions in Sweden and Austria can strike (Denmark's is specifically forbidden to do so), "it is highly unlikely that this strike would be exercised."
- If a US military union, however, were denied the right to strike (as surely would be the case in the event that such an organization takes shape), it doesn't necessarily follow that there would be no strike. "Although denied, strikes would probably occur," Mockaitis and Johnson suggest.

They added that a union probably could not exist within the US military "without exercising the strike option, whether or not this option [is] . . . permitted by law." This may represent an extreme point of view that potential organizers would undoubtedly deny.

In any event, public employee unions generally are flexing their growing muscles, and causing new concern among the general public. The recent strikes by New York City sanitation workers and Pennsylvania state employees, and the strike threats by US postal workers, attest to that.

Aside from the explosive strike issue, sufficient in itself to heighten concern in Pentagon officials about military unionism, what could such an organization accomplish for the troops that hasn't been done without a union?

Very little, many observers feel. Fifteen or twenty years ago it might have been different. In those days service members' most natural "representative" was the government—the Administration and Congress. But the government had neglected the service community in pay/benefits matters that unions might have pursued successfully. Basic pay levels lagged badly; survivor benefits and dependent medical care had not been pursued sufficiently. In short, the government then was an ineffective voice or spokesman for persons in uniform.

This has changed in recent years. Uncle Sam, starting a decade or so ago, did in fact become responsive to members' money needs. And the military-oriented associations, the Air Force Association among them, have been in there pitching.

An example of the associations' ever-increasing support is their role in the current struggle over military commissaries. They have banded together in an awesome display of strength in support of retaining the stores with their present customer savings. The associations, in fact, have probably saved the commissary system.

The associations have the desire and the know-how to support the troops; they understand the issues, speak the same language, and are part of the team. Yet they're not restricted in speaking out in the manner that individual service members are.

What does it all add up to? That unionism and the military are incompatible—in the US at any rate. ■

riculum: A fourth-year curriculum for public high schools was authorized, on an optional basis, last September. Action completed.

15. AFJROTC Funds for Curriculum-in-Action Trips: An allotment for field trips has been provided AFJROTC units, but travel funds are very limited and the units must compete for them with other Air University requirements.

16. Competitive Air Force Academy Category for CAP Cadets: The Air Force advises that Academy appointments are specified by law and it is extremely doubtful that the present rules could be changed. Authorities believe that outstanding Academy candidates from CAP units have a good chance of securing appointments through the existing categories.

Commissaries Backed

A resolution putting Congress on record for continuing commissaries in their present form and at their current savings levels has passed the House by an overwhelming majority of 364 to 53. Senate approval is expected in September. The measure supports the continued use of appropriated funds to pay commissary workers' salaries. However, the crucial step, due soon, is whether the Appropriations Committees will in fact provide the money. The House Concurrent Resolution 198 follows:

Resolved by the House of Representatives (The Senate concurring), that the Congress finds and declares that the present method of providing financial support for commissary stores operated by agencies of the Department of Defense through appropriations of funds to meet the payroll costs of their civilian and military employees is a rational and appropriate way of assuring to personnel of the armed services the convenience and economic benefit which such stores were established and are intended to provide. Any move to eliminate this support, and to require instead (either on an immediate or gradual basis) that the full costs of the payrolls involved be borne by the commissary patrons themselves, is neither justified nor desirable.

Section 2. The Congress expresses its disapproval of the President's recent proposal (contained in his budget for the coming fiscal year) to eliminate the use of appropriated funds to meet the payroll costs of commissary employees, and declares that it will neither take nor permit any action which would implement such proposal or have the effect of achieving its objective.

Mobilization Augmentee Plan Beefed Up

The Air Force has approved plans to strengthen the Mobilization Augmentee program. MAs are individual Reservists earmarked to augment the active force during emergencies.

In sweeping changes announced recently by USAF Chief of Staff Gen. David C. Jones, the MA project will expand "to include support of the active force peacetime mission requirements as an adjunct to training." The use of MAs "to augment personnel shortfalls or critical skill areas is paramount in view of the austere environment in which we operate," General Jones wrote major air commanders.

A new study by the Office of the

Chief of the Air Force Reserve cited "difficulties in recruiting and retention, education and training, utilization and management." MAs are presently down to less than half their authorized strength of 16,000. Currently, approximately 5,700 of 9,000 officer spaces and 1,300 of 7,000 airmen spaces are filled.

The revitalization effort formally began last month with establishment of an office in the Pentagon—Special Assistant for MA Matters—to take specific charge of the MA activity. It is headed by Col. Thomas E. Walsh.

Soon, senior mobilization augmentees will take over management of the program at command level. Plans have been drawn up to improve training and the flow of information to participants. MA retention efforts will be strengthened and "a maximum effort will be exerted to fill the vacancies," Colonel Walsh told AIR FORCE Magazine.

The involvement of MAs in performing active force mission requirements will contribute greatly to achieving mobilization readiness, Reserve officials said.

General Jones, meantime, called on each commander to give his "personal support" to the new program.

USAF Big Manpower Loser

Air Force closed out FY '75 (on June 30) with 612,751 military members, including 104,961 officers. The net loss for the twelve-month period: a whopping 31,219 persons, compared to a 7,800-man loss for the Navy and actual increases for the Army and Marine Corps.

And during FY '76? You guessed it; while the other services appear virtually assured of no cuts, Air Force will drop to 590,000 members—and possibly fewer. For Congress, in approving the recent military procurement bill, gave the Defense Secretary authority to distribute 9,000 military personnel losses as he sees fit. The lawmakers gave the Secretary similar authority with 23,000 civilian personnel reductions. He can apply them among the services as he wishes, subtracting from the number the Pentagon sought approval for (251,300 in the Air Force).

Flyers Can Leave, Return Later

Headquarters expects up to 650 young rated officers to leave active duty this fiscal year under PALACE FURLOUGH, a new exit route first publicly disclosed in the July "Bulletin Board." Full details have now been worked out. FURLOUGH will allow FY '70–73 year group pilots and navigators in overmanned weapon systems to separate with a guarantee that they can, at their option, return to active duty three to four years later.

The program will help reduce the current overage of rated officers and may ease what is now predicted as a rated shortage around FY '80. However, some officials feel that only twenty to twenty-five percent of those electing the unique exit route will chose to return.

But if 400 to 650 officers do depart under FURLOUGH in FY '76, as Hq. USAF predicts, that many fewer officers will have to be RIFed. The project will also smooth out the year groups and remove some promotion snags, USAF says.

Regular officers who leave must surrender their Regular commissions. If they return, they will compete for Regular in their then-new year group. Some Air Force Academy graduates as well as certain AFROTC four-year scholarship officers are ineligible for the program.

Short Bursts

The House Ways and Means Committee is working on "tax reform" legislation that may include reduction or elimination of tax exemption for military members retired for disability. The retiree "sick-pay" exclusion is also in jeopardy. The Committee last year considered similar actions, but dropped them when the slumping economy captured its full attention. Now the old proposals, which AFA and other military associations strenuously opposed, have been dusted off. AFA still opposes them.

The Defense Department has reversed itself on the close-out of dependent dental care at Elmendorf and Eielson AFBs, Alaska (*see last month's "Bulletin Board"*). "New data," Defense now says, reveals there are too few civilian dentists in the frosty state, therefore military kin care continues. (Loud objections from the military community also may have had something to do with the reversal.)

USAF has consolidated temporary promotion and Regular commissioning boards. For example, when a board considers lieutenants for temporary captain, it will also

weigh them for augmentation. The move will save money, manpower, and paperwork. And it will eliminate those rare cases, embarrassing to the service, where persons have been rejected for promotion shortly after they were picked for Regular, or vice versa. The mechanics of the change require reshuffling of the times some non-Regulars are considered for Regular. CBPOs have full details.

The Pentagon is starting to require everyone enlisting or reenlisting to sign a contract acknowledging they understand that pay or other conditions of service may "change without notice." The signing, on new DD Form 4, begins when old enlistment forms are used up.

Senior Staff Changes

RETIREMENTS: M/G Richard G. **Cross,** Jr.; M/G Harry M. **Darmstandler;** M/G Peter R. **DeLonga;** M/G William A. **Dietrich;** M/G Lawrence J. **Fleming;** M/G Jack K. **Gamble;** B/G John H. **Germeraad;** M/G Robert P. **Lukeman;** M/G Edward **Ratkovich;** B/G Leslie J. **Westberg;** M/G John H. **Wilkins.**

PROMOTIONS: To **Lieutenant General:** Wilbur L. **Creech;** Robert T. **Marsh;** George E. **Schafer.**

To **Major General:** Charles C. **Blanton;** Richard C. **Bowman;** Cecil E. **Fox;** Kermit C. **Kaericher;** Carl D. **Peterson;** Don D. **Pittman;** Gerald J. **Post;** Robert A. **Rushworth;** Hoyt S. **Vandenberg,** Jr.

To **Brigadier General:** William P. **Acker;** Stanley C. **Beck;** John H. **Bennett;** William E. **Brown,** Jr.; Charles L. **Donnelly,** Jr.; Eugene D. **Scott;** Robert L. **Thompson,** Jr.; Everett L. **True;** Robert F. C. **Winger.**

To be **Major General,** Air National Guard: John A. **Johnston;** Billy M. **Jones.**

To be **Major General,** Air Force Reserve: Edwin R. **Johnston.**

To be **Brigadier General,** Air National Guard: J. E. **Gardner;** Paul E. **Hoover;** Walter C. **Leonardo;** Lawrence A. **Quebbeman;** Roberto R. **Vargas.**

CHANGES: M/G Thomas A. Aldrich, from DCS/Plans, Hq. MAC, Scott AFB, Ill., to Cmdr., 22d AF, MAC, Travis AFB, Calif., replacing M/G John F. Gonge . . . **M/G Benjamin R. Baker,** from Dir. of Med. Plans & Resources, OTSG, Hq. USAF, Washington, D. C., to Dep. Surg. Gen. of the AF, Hq. USAF, Washington, D. C., replacing L/G George E. Schafer . . . **B/G Robert W. Bazley,** from Cmdr., 323d TFW, Mather AFB, Calif., to IG, Hq. USAFE, Ramstein AB, Germany, replacing B/G William C. Norris . . . **B/G Stanley C. Beck,** from Cmdr., Det. 800, AFROTC, Univ. of Tenn., Knoxville, Tenn., to Comdt. of Cadets, USAF Academy, Colo., replacing M/G Hoyt S. Vandenberg, Jr.

M/G Richard C. Bowman, from Dep. Def. Adviser, NATO, Brussels, Belgium, to Dir., European Rgn., OASD (ISA), Washington, D. C. . . . **M/G David D. Bradburn,** from Dir. of Sp. Projects, SAF (with additional duty as Dep. Cmdr. for Satellite Programs, SAMSO), Los Angeles, Calif., to V/C, ESD, AFSC, Hanscom AFB, Mass., replacing B/G Phillip N. Larsen . . . **M/G (L/G selectee) Devol Brett,** from Chief, US Mil. Assistance Advisory Gp., Teheran, Iran, to US Rep., Permanent Mil. Deputies Gp., CENTO, Ankara, Turkey . . . **B/G Bruce K. Brown,** from Dep. Dir., J-3 (NMCC), Joint Staff, OJCS, Washington, D. C., to Cmdr., 14th Aerospace Force, ADCOM, Ent AFB, Colo., replacing M/G James E. Paschall.

M/G (L/G selectee) Charles E. Buckingham, from C/S, Hq. AFLC, Wright-Patterson AFB, Ohio, to Comptroller, Hq. USAF, Washington, D. C., replacing retiring L/G Joseph R. DeLuca . . . **Col. (B/G selectee) Kenneth D. Burns,** from V/C, USAFSS, Kelly AFB, Tex., to Cmdr., USAFSS, San Antonio, Tex., replacing M/G Howard P. Smith, Jr. . . . **B/G Keith L. Christensen,** from Asst. DCS/Ops., Hq. MAC, Scott AFB, Ill., to V/C, 21st AF, MAC, McGuire AFB, N. J., replacing B/G Theodore P. Crichton . . . **B/G Lynwood E. Clark,** from Cmdr., 327th Air Div., PACAF, Taipei AS, Taiwan, to Cmdr., 313th Air Div. and 18th TFW, PACAF, Kadena AB, Japan, replacing B/G Clyde F. McClain . . . **B/G John W. Collens III,** from Cmdr., AWS, MAC, Scott AFB, Ill., to DCS/Plans, Hq. MAC, Scott AFB, Ill., replacing M/G Thomas A. Aldrich . . . **B/G Theodore P. Crichton,** from V/C, 21st AF, MAC, McGuire AFB, N. J., to Cmdr., 435th TAW, MAC, Rhein-Main AB, Germany.

B/G Sidney L. Davis, from Asst. DCS/Ops. for Con. & Spt., Hq. TAC, Langley AFB, Va., to Dep. Cmdr., 5th ATAF, Vicenza, Italy, replacing B/G Carl S. Miller . . . **B/G Clyde R. Denniston, Jr.,** from Dir., J-2, US Readiness Comd., MacDill AFB, Fla., to IG, Hq. SAC, Offutt AFB, Neb., replacing B/G Don D. Pittman . . . **B/G Garth B. Dettinger,** from Comd. Surg., Hq. ATC, Randolph AFB, Tex., to Dir. of Med. Plans & Resources, OTSG, Hq. USAF, Washington, D. C., replacing M/G Benjamin R. Baker . . . **Gen. Richard H. Ellis,** from Vice Chief of Staff, Hq. USAF, Washington, D. C., to Cmdr., Allied Air Forces Central Europe, and CINC, USAFE, replacing retiring Gen. John W. Vogt, Jr.

M/G Cecil E. Fox, from IG, Hq. ATC, Randolph AFB, Tex., to Cmdr., Sheppard TTC, ATC, Sheppard AFB, Tex., replacing M/G Raymond B. Furlong . . . **M/G (L/G selectee) Raymond B. Furlong,** from Cmdr., Sheppard TTC, ATC, Sheppard AFB, Tex., to Cmdr., AU, Maxwell AFB, Ala., replacing L/G F. Michael Rogers . . . **M/G (L/G selectee) John F. Gonge,** from Cmdr., 22d AF, MAC, Travis AFB, Calif., to V/C, Hq. MAC, Scott AFB, Ill., replacing L/G (General selectee) Daniel James, Jr. . . . **B/G Harold E. Gross,** from DCS/Compt., Hq. SAC, Offutt AFB, Neb., to Cmdr., 4th Air Div., SAC, F. E. Warren AFB, Wyo., replacing B/G Melvin G. Bowling.

L/G Robert E. Hails, from V/C, Hq. TAC, Langley AFB, Va., to DCS/S&L, Hq. USAF, Washington, D. C., replacing retiring L/G William W. Snavely . . . **M/G Eugene L. Hudson,** from Dir., Log. Plans & Programs, DCS/S&L, Hq. USAF, Washington, D. C., to Asst. DCS/S&L, Hq. USAF, Washington, D. C., replacing M/G (L/G selectee) George Rhodes . . . **L/G (General selectee) Robert E. Huyser,** from DCS/P&O, Hq. USAF, Washington, D. C., to Dep. CINC, US European Command, Vaihingen, Germany, replacing Gen. George J. Eade.

Col. (B/G selectee) Charles C. Irions, from Cmdr., 375th Aeromed. Airlift Wg., Hq. Scott AFB, Ill., to DCS/Ops., Hq. MAC, Scott AFB, Ill., replacing B/G Harry A. Morris . . . **B/G Paul A. Kauttu,** from V/C, USAFTFWC, TAC, Nellis AFB, Nev., to V/C, 9th AF, TAC, Shaw AFB, S. C., replacing M/G Jack Bellamy . . . **M/G Larry M. Killpack,** from V/C, 12th AF, TAC, Bergstrom AFB, Tex., to V/C, Hq. ATC, Randolph AFB, Tex. (previously announced as Cmdr., Keesler TTC, ATC, Keesler AFB, Miss.), replacing retiring M/G Henry Warren . . . **B/G John E. Kulpa, Jr.,** from Prin. Dep. for Plans to the Dep. Dir. for the Intel. Community, CIA, McLean, Va., to Dir. of Sp. Projects, SAF (with additional duty as Dep. Cmdr. for Satellite Programs, SAMSO), Los Angeles, Calif.,

The Air Force Reserve wound up FY '75 with 51,135 members (Selected Reservists), only 500 below budgeted strength. And AFRES recruiting and retention are improving, officials reporting a first term re-up rate of forty-two percent in June.

An unnecessary irritant has ended for USAF separatees. They no longer need return to their last base (to sign out) after completing terminal leave. They now turn in their ID cards before starting leave and receive a letter okaying active-duty privileges until the final leave day.

The Air University will conduct an academic conference on "The Role of the Military in Communist Societies" at Maxwell AFB, Ala., November 21–22. Military and civilian scholars will participate. Prof. Morris Janowitz will deliver the keynote address. For details, write Maj. W. H. Kincaid, Air Command and Staff College (EDCI), Maxwell AFB, Ala. 36112. ■

replacing M/G David D. Bradburn . . . **B/G Thomas E. Lacy,** from Dep. Cmdr., Field Comd., Def. Nuclear Agency, Kirtland AFB, N. M., to Cmdr., Field Comd., Def. Nuclear Agency, Kirtland AFB, N. M.

B/G Phillip N. Larsen, from V/C, ESD, AFSC, Hanscom AFB, Mass., to DCS/Systems, AFSC, Andrews AFB, Md., replacing M/G (L/G selectee) Robert T. Marsh . . . **M/G (L/G selectee) George G. Loving, Jr.,** from JCS Rep. for Mutual and Balanced Force Reduction, Organization of the JCS, Washington, D. C., to Cmdr., 6th ATAF, Izmir, Turkey, replacing L/G Sanford K. Moats . . . **B/G Lyle E. Mann,** from DCS/Intel., Hq. PACAF, Hickam AFB, Hawaii, to C/S, Hq. PACAF, Hickam AFB, Hawaii . . . **Gen. William V. McBride,** from Cmdr., Hq. AFLC, Wright-Patterson AFB, Ohio, to Vice Chief of Staff, Hq. USAF, Washington, D. C., replacing Gen. Richard H. Ellis . . . **B/G Clyde F. McClain,** from Cmdr., 313th Air Div. and 18th TFW, PACAF, Kadena AB, Japan, to V/C, 12th AF, TAC, Bergstrom AFB, Tex., replacing M/G Larry Killpack.

B/G Carl S. Miller, from Dep. Cmdr., 5th ATAF, Vicenza, Italy, to Cmdr., CAP-USAF, Maxwell AFB, Ala., replacing retiring B/G Leslie J. Westberg . . . **B/G Billy M. Minter,** from Dep. Dir., J-4, US European Comd., Vaihingen, Germany, to DCS/Log., USAFE, Ramstein AB, Germany, replacing retiring M/G Peter R. DeLonga . . . **M/G Charles F. Minter, Sr.,** from Cmdr., 3d Air Div., SAC, Andersen AB, Guam, to Dir. Log. Plans & Programs, DCS/S&L, Hq. USAF, Washington, D. C., replacing M/G Eugene L. Hudson . . . **L/G Sanford K. Moats,** from Cmdr., 6th ATAF, Izmir, Turkey, to V/C, Hq. TAC, Langley AFB, Va., replacing L/G Robert E. Hails . . . **M/G (L/G selectee) Thomas W. Morgan,** from Cmdr., AF Special Weapons Center, AFSC, Kirtland AFB, N. M., to Cmdr., SAMSO, AFSC, Los Angeles, Calif., replacing retiring L/G Kenneth W. Schultz.

B/G Harry A. Morris, from DCS/Ops., Hq. MAC, Scott AFB, Ill., to C/S, Hq. MAC, Scott AFB, Ill., replacing retiring M/G William A. Dietrich . . . **B/G Edward J. Nash,** from Cmdr., 62d MAW, MAC, McChord AFB, Wash., to IG, Hq. MAC, Scott AFB, Ill., replacing B/G John Germeraad . . . **B/G William C. Norris,** from IG, Hq. USAFE, Ramstein AB, Germany, to Cmdr., HQ COMD, Bolling AFB, D. C., replacing M/G M. R. Reilly . . . **M/G James E. Paschall,** from Cmdr., 14th Aerospace Force, Hq. ADCOM, Ent AFB, Colo., to V/CINC, ADCOM, Ent AFB, Colo., replacing retiring L/G Royal N. Baker . . . **M/G Charles C. Pattillo,** from Cmdr., Lowry TTC, ATC, Lowry AFB, Colo., to V/CINC, PACAF, Hickam AFB, Hawaii (previously announced as V/C, Hq. ATC, Randolph AFB, Tex.) . . . **L/G John W. Pauly,** from Asst. to Chairman, JCS, Washington, D. C., to DCS/P&O, Hq. USAF, Washington, D. C., replacing L/G Robert E. Huyser.

B/G Don H. Payne, from DCS/Pers., Hq. TAC, Langley AFB, Va., to IG, Hq. PACAF, Hickam AFB, Hawaii, replacing M/G Richard H. Schoeneman . . . **B/G Earl G. Peck,** from Chief, Office of AF History, Hq. USAF, Washington, D. C., to DCS/Pers., Hq. SAC, Offutt AFB, Neb., replacing B/G Richard N. Cody . . . **Col. (B/G selectee) Andrew Pringle, Jr.,** from Sp. Asst. to Cmdr., Hq. ATC, Randolph AFB, Tex., to IG, Hq. ATC, Randolph AFB, Tex., replacing B/G (M/G selectee) Cecil E. Fox . . . **M/G M. R. Reilly,** from Cmdr., HQ COMD, Bolling AFB, D. C., to Cmdr., AF Contract Mgt. Div., AFSC, Kirtland AFB, N. M., replacing M/G Abraham J. Dreiseszun . . . **B/G Thomas F. Rew,** from Cmdr., 45th Air Div., SAC, Pease AFB, N. H., to Cmdr., 3d Air Div., SAC, Andersen AB, Guam, replacing M/G Charles F. Minter, Sr. . . . **B/G Robinson Risner,** from Cmdr., 832d Air Div., TAC, Cannon AFB, N. M., to V/C, USAFTFWC, TAC, Nellis AFB, Nev., replacing B/G Paul A. Kauttu.

M/G Ray A. Robinson, Jr., from Cmdr., 21st NORAD Region, Hancock Field, N. Y., to C/S, Allied AF Southern Europe, Naples, Italy, replacing M/G Ernest T. Cragg . . . **L/G (General selectee) F. Michael Rogers,** from Cmdr., AU, Maxwell AFB, Ala., to Cmdr., Hq. AFLC, Wright-Patterson AFB, Ohio, replacing Gen. William V. McBride . . . **B/G Richard G. Rumney,** from DCS/Pers., Hq. AFSC, Andrews AFB, Md., to Prin. Dep. for Plans to the Dep Dir. for the Intel. Community, CIA, McLean, Va., replacing B/G John E. Kulpa, Jr. . . . **M/G Kendall Russell,** from Dir. of Dev. & Acq., DCS/R&D, Hq. USAF, Washington, D. C., to Asst. DCS/R&D, Hq. USAF, Washington, D. C., replacing M/G (L/G selectee) Alton D. Slay . . . **L/G George E. Schafer,** from Dep. Surg. Gen., Hq. USAF, Washington, D. C., to Surg. Gen., Hq. USAF, Washington, D. C., replacing L/G Robert A. Patterson.

M/G Richard H. Schoeneman, from IG, Hq. PACAF, Hickam AFB, Hawaii, to Cmdr., 21st NORAD Region, Hancock Field, N. Y., replacing M/G Ray A. Robinson, Jr. . . . **M/G William M. Schoning,** from Cmdr., 1st Strat. Aerospace Div., SAC, Vandenberg AFB, Calif., to Dir., Inter-American Def. College, Ft. McNair, Washington, D. C. . . . **M/G Winfield W. Scott, Jr.,** from V/C, Sacramento ALC, AFLC, McClellan AFB, Calif., to Cmdr., Keesler TTC, ATC, Keesler AFB, Miss., replacing L/G Bryan M. Shotts . . . **B/G Stuart H. Sherman, Jr.,** from DCS/Engrg. & Svcs., Hq. SAC, Offutt AFB, Neb., to Cmdr., 1st Strat. Aerospace Div., SAC, Vandenberg AFB, Calif., replacing M/G William M. Schoning . . . **M/G (L/G selectee) Alton D. Slay,** from Asst. DCS/R&D, Hq. USAF, Washington, D. C., to DCS/R&D, Hq. USAF, Washington, D. C., replacing L/G (General selectee) William J. Evans.

M/G Howard F. Smith, Jr., from Cmdr., USAFSS, San Antonio, Tex., to Dir., J-2, US European Comd., Vaihingen, Germany, replacing retiring M/G Edward Ratkovich . . . **M/G (L/G selectee) William Y. Smith,** from Dir. of Policy Plans & Nat. Security Council Affairs, Office of Asst. Sec. Def. (International Security Affairs), Washington, D. C., to Asst. to Chairman, JCS, Washington, D. C., replacing L/G John W. Pauly . . . **B/G (M/G selectee) Benjamin F. Starr, Jr.,** from Cmdr., 63d MAW, MAC, Norton AFB, Calif., to Dir. of Transportation, DCS/S&L, Hq. USAF, Washington, D. C., replacing retiring M/G Paul F. Patch . . . **B/G John C. Toomay,** from Dep. Dir., Dev. & Acq., DCS/R&D, Hq. USAF, Washington, D. C., to Dir., Dev. & Acq., DCS/R&D, Hq. USAF, Washington, D. C., replacing M/G Kendall Russell . . . **B/G Fred A. Treyz,** from Dep. Dir. for Ops., Pacific Comd., Honolulu, Hawaii, to Dep. Dir., J-3 (NMCC), Joint Staff, OJCS, Washington, D. C., replacing B/G Bruce K. Brown.

Col. (B/G selectee) Everett L. True, from AF Member, Chairman's Staff Grp., OJCS, Washington, D. C., to V/C, Sacramento ALC, AFLC, McClellan AFB, Calif., replacing M/G Winfield W. Scott, Jr. . . . **M/G Hoyt S. Vandenberg, Jr.,** from Comdt. of Cadets, USAF Academy, Colo., to Chief, MAAG, Teheran, Iran . . . **B/G Alonzo J. Walter, Jr.,** from Asst. DCS/P&O for Ops., Hq. PACAF, Hickam AFB, Hawaii, to Dep. Dir., J-3, US European Comd., Vaihingen, Germany . . . **B/G Jasper A. Welch, Jr.,** from Asst. for Strat. Initiatives, DCS/P&O, Hq. USAF, Washington, D. C., to ACS/Studies & Analysis, Hq. USAF, Washington, D. C., replacing retiring M/G Robert P. Lukeman . . . **B/G Joseph E. Wesp,** from Cmdr., USAF Med. Center, AFLC, Wright-Patterson AFB, Ohio, to Comd. Surg., Hq. ATC, Randolph AFB, Tex., replacing B/G Garth B. Dettinger. ■

Airman's Bookshelf

Can Escalation be Controlled?

The Road to Total War, by Frederick M. Sallagar. Van Nostrand Reinhold Co., New York, N. Y., 1974. 197 pages with appendices and index. $11.95.

World leaders and decision-makers who think they can control events should read Frederick M. Sallagar's *The Road to Total War,* the story of air escalation in Europe in World War II. It describes how, on both sides, one step (perhaps the last?) led to another, how men always seemed prisoners of circumstance and events. The author's primary objective is to provide insights that might prevent escalation in future war. The ultimate question is: Could escalation to general nuclear war be avoided?

Examination of the origins of strategic bombardment is related to this question. After their experience in World War I, the victors were determined to avoid trench carnage in any future war. Between the wars, RAF Air Marshal Hugh M. Trenchard, among others, emphasized striking the enemy's will to resist. In future war, Trenchard warned, all available weapons would be used. British officials were convinced civilian morale was especially vulnerable to bombing.

Fortunately, Britain and the United States pursued some degree of bomber development. After 1936, Germany concentrated on tactical support and fighter aircraft. Hitler was primarily oriented toward mobile ground tactics—blitzkrieg of infantry and armored forces supported by aircraft. Poland was a victim of such tactics.

The London blitz—a phase of the Battle of Britain—began in September 1940 when Hitler, postponing "Sea Lion" (the invasion of England), tried instead for quick victory. This terror assault hardened British resolve and was the start of indiscriminate air warfare. Fortunately for Britain, the German all-out air attack was not concentrated, Göring having dispersed his forces, wanting to do too much in a short time. But it made the British determined to pay the Germans back in kind.

The RAF found daylight precision bombing too costly and changed to area night bombing, despite the air planners and Ministry of Economic Warfare idea that German oil production should be the top-priority target. By 1942, Bomber Command, under Air Marshal Arthur Harris, began sustained area bombing to destroy civilian morale. On May 30, 1942, Harris launched more than 1,000 bombers against Cologne, making 45,000 Germans homeless. "The whirlwind," notes Sallagar, "had struck."

Meanwhile, in 1942, the US Eighth Air Force built up slowly. Then the invasion of North Africa ("Torch") drew off most of its forces. The British exerted pressure to convince the Americans they should join the night offensive. If this were done, Harris thought Germany could be knocked out. In January 1943, this issue was confronted at Casablanca.

Maj. Gen. Ira C. Eaker told Prime Minister Churchill (who thought the American effort inadequate) that VIII Bomber Command had been hampered by lack of long-range fighter escort, commitment to "Torch," and poor weather. Crucial time would be lost if the VIII Bomber Command had to be retrained for night missions. Churchill accepted this. The Combined Chiefs of Staff then issued a directive for the joint bomber offensive.

By early 1944, long-range escorts helped carry the battle to the Luftwaffe. And though strategic bombers supported "Overlord," Gen. Carl Spaatz won his point that if a concerted attack were mounted against oil, the Luftwaffe could be flushed and defeated. This proved to be the case.

Sallagar observes that Maj. Gen. Curtis LeMay's area bombing of Japan "had the same objective as Sir Arthur Harris' . . . and was undertaken for the same reason, namely, that selective attacks against military objectives had proved ineffective owing to operational limitations."

In the end, Churchill turned against Harris. Why? Sallagar thinks that "Allied leaders may not have wished to be reminded that they had been forced to subordinate their moral scruples to the exigencies of a total war." Yet, that is what Trenchard had prophesied in 1928.

Sallagar emphasizes wars are almost never fought according to plan. The air offensive was conducted under serious limitations. Air strategy was shaped by existing conditions and available forces. Escalation to total war "was not planned so much as it happened."

In the future, fear of retaliation hopefully will prevent a decision to start nuclear war. Could escalation beyond the flash point be prevented? "It will depend," observes Sallagar, "on whether decision-makers . . . understand . . . escalation well enough to avoid the mistakes into which they may be tempted by the unfamiliar problems of a 'controlled general war.' If they are willing to learn from the past, they will find that these problems are not without precedent."

To a historian, that is a large "if."

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

Pilot Reports

Flying Combat Aircraft of the USAAF–USAF, edited by Robin Higham and Abigail T. Siddall. Iowa State University Press, Ames, Iowa, 1975. 159 pages. $7.95.

This book contains "pilot report" articles on twenty-one AAF and USAF aircraft, the Spitfire VIII, and the CG-4A glider, all written by serving or former Air Force pilots. One of the editors, Robin Higham, who did the piece on the C-47, is also editor of *Aerospace Historian,* sponsor of the book and official journal of the Air Force Historical Foundation. Aircraft covered, in addition to the Spit and CG-4, are the B-25, B-26, B-29, B-58, P-38, P-39, P-51, F-80, F-84, F-86, F-105, F-106, F-111, O-2A, OV-10, C-46, C/AC-47, C-54,

and the Republic XR-12 recce aircraft that never went into production.

This reviewer, who has flown several of these aircraft, will vouch for the accuracy and authenticity of those particular views from the cockpit. The authors not only describe their birds, but also tell exactly how they flew—the good characteristics and the bad. The quality of writing is uniformly high, and in the case of those aircraft that saw combat, articles are liberally laced with wartime experiences.

Among the authors whose names will be familiar to most readers are retired Maj. Gen. Haywood Hansell, a wartime commander of the XXI Bomber Command, who writes about the B-29. The F-106 is covered by a father-and-son team, Maj. Gen. Jack Gamble, former head of Alaskan Air Command, and Capt. Patrick Gamble. One of the most interesting chapters is a comparison of the Spitfire VIII and the P-51, written by retired Maj. Gen. Charles McCorkle, who was an ace in both fighters.

Flying Combat Aircraft is attractively done in large format with many excellent photos. Recommended for your own library and for the Christmas shopping list. A good book for $7.95 is a find these days.

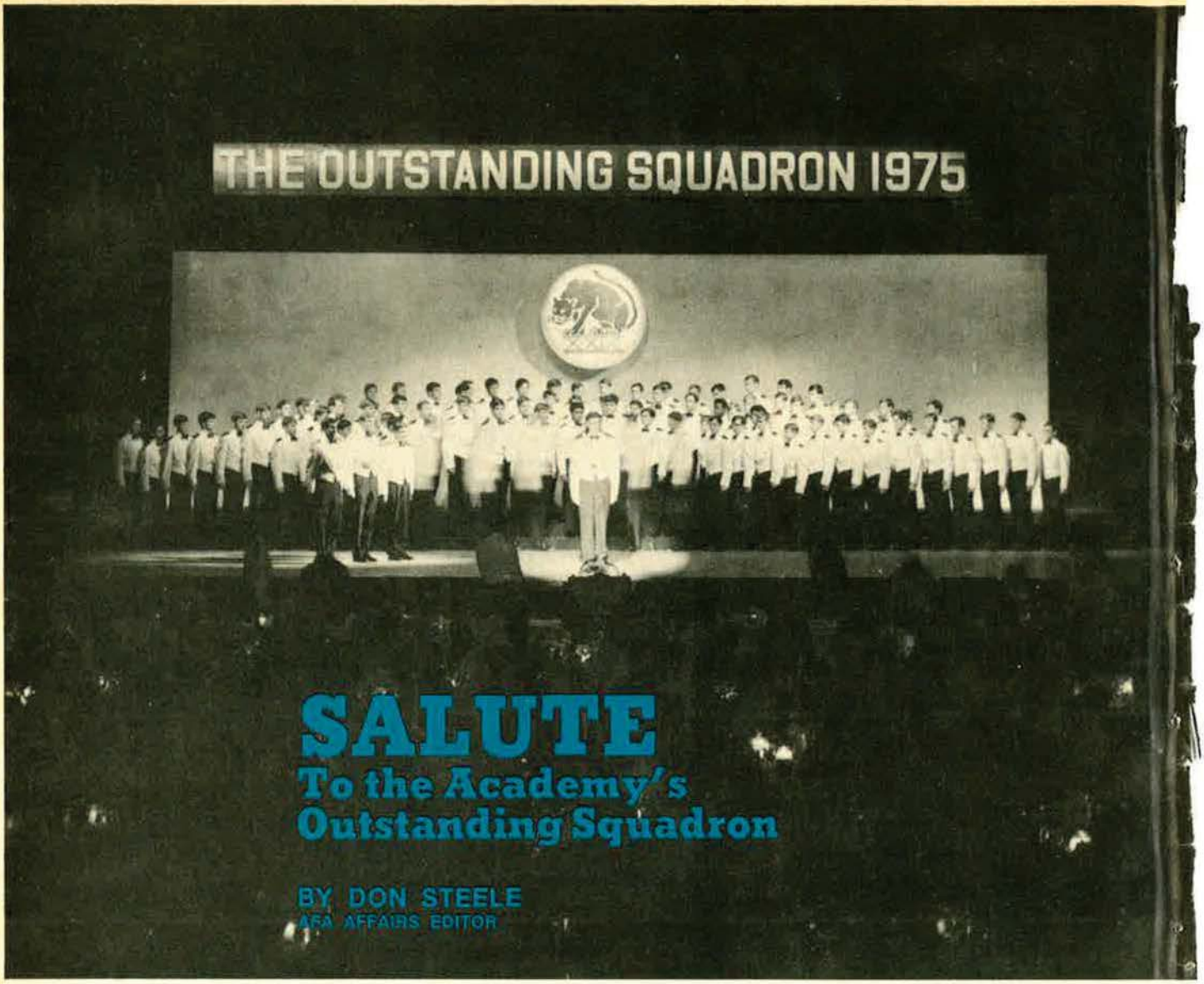
—Reviewed by John L. Frisbee, Executive Editor of this magazine.

New Books in Brief

Aircraft in Profile, Vol. 14, edited by Charles W. Cain. This volume of the *Aircraft in Profile* series covers in detail the Martin B-57/RB-57F; de Havilland D. H. 9A; Douglas R4D (the Navy's version of the C-47); Vought-Sikorsky OS2U Kingfisher; Grumman A-6A/E and the EA-6A/B variants; and the Concorde. Each aircraft is covered by an aviation expert who recounts the developmental and operational history of his aircraft and provides voluminous statistical data. There are many photographs (thirty-nine in the case of the B-57, for example) and full color drawings of each aircraft. Doubleday & Co., New York, N. Y., 1975. 160 pages. $11.95.

Civil Aircraft of the World, by John W. R. Taylor and Gordon Swanborough. Complete reference source on civilian aircraft ranging from the Concorde to single-engine utility and business aircraft and civilian helicopters. Bristles with facts and figures, with photos and three-view drawings of the world's major airliners in service or under development, third-level airliners, air taxis, larger utility and business twins, as well as club, touring, private, and agricultural aircraft. Charles Scribner's Sons, New York, N. Y., 1975. 168 pages. $6.95.

Fire and Fall Back, by Glenn E. McClure. A fast-paced adventure story of Casey Vincent's years in the World War II CBI Theater, based on his personal war diaries. The title is from Chapter Ten, which covers the withdrawal of Claire Chennault's Flying Tigers from Eastern China as Chiang Kai-shek's ground armies "fell back" in the face of the Japanese *Ichi Go* Campaign. Casey Vincent was Milton Caniff's prototype for "Col. Vince Casey" and later "General Shanty Town" in the Steve Canyon comic strip. At twenty-nine, he was the second youngest general in the US Army since the Civil War. Includes supplementary information from official records and personal interviews, maps, and seventy-four photographs. Barnes Press, Universal City, Tex., 1975. 256 pages. $9.95.



SALUTE
To the Academy's Outstanding Squadron

BY DON STEELE
AFA AFFAIRS EDITOR

The cadets of 1975's Outstanding Squadron, the 29th Squadron, assembled on stage to be introduced to the some 550 guests who gathered in Colorado Springs to salute them for their outstanding accomplishments.

For the past sixteen years, one of the highlights of the June Week graduation festivities at the Air Force Academy has been the Outstanding Squadron Dinner, cosponsored by the Air Force Association and its Colorado Springs Chapter.

Aerospace and AFA leaders from throughout the country and their ladies, leaders in the Colorado Springs community and their ladies, and fathers, mothers, sisters, brothers, and girl friends of the cadets attended this year's formal dinner in the International Center at The Broadmoor Hotel in Colorado Springs to salute the 29th Cadet Squadron—the Air Force Academy's Outstanding Squadron for 1975.

Retired Air Force Maj. Gen. M. J. Ingelido, President of AFA's Colorado Springs Chapter, was toastmaster. "Quarterbacking" the event, as master of ceremonies, was Roger Staubach, better known to football fans as "Roger the Dodger," the scrambling quarterback and passing artist of the Dallas Cowboys.

In his remarks, Lt. Gen. James R. Allen, Superintendent of the Air Force Academy, said, ". . . this is the first one [Outstanding Squadron Dinner] I've had the good fortune to attend, but I must say it is one of the finest affairs of its type I've ever seen, and, speaking for the staff, faculty, and the cadet wing, present and previous, including the 8,600 graduates, our appreciation to the Air Force Association for this magnificent affair."

Maj. Gary L. R. Anderson, a member of the Academy's History Department faculty, a 1964 graduate of the Academy, and a member of the Outstanding Squadron in 1961, 1962, and 1964, while a cadet in the 13th Squadron, also spoke briefly.

Gen. David C. Jones, USAF Chief of Staff, was the principal speaker of the evening. In his address, General Jones said, "To the 29th, my appreciation for the great job you have done. You've deserved this honor. You can be proud of it. You not only won in tough competition, but in a way that epitomizes what

Standing by the Air Force Association's trophy for the Outstanding Squadron of the Air Force Academy are, from left, AFA Board Chairman Martin M. Ostrow; Cadet Lt. Col. Christopher A. Fillar, the 29th's Spring Commander; Cadet Lt. Col. William O. Ashcraft, Fall Term Commander of the 29th; Cadet Lt. Col. Kimberly C. Schwarz, the Winter Commander; and AFA National President Joe L. Shosid.

During the program, Gen. David C. Jones, USAF Chief of Staff, made a surprise announcement, unprecedented in the history of the dinner, that the No. 1 cadet in the graduation order of merit for the Class of 1975 was a member of the Outstanding Squadron. General Jones, left, and Lt. Gen. James R. Allen, center, Superintendent of the Academy, congratulate Cadet William E. Davis after the announcement of his standing in the Class of 1975.

Principals in the program included, from left, Gen. David C. Jones, USAF Chief of Staff, the principal speaker; Roger Staubach, the master of ceremonies; AFA President Joe L. Shosid, who presented the Outstanding Squadron Trophy; and retired Maj. Gen. M. J. Ingelido, the toastmaster and President of AFA's Colorado Springs Chapter.

During the predinner reception, Brig. Gen. Earl G. Peck, right, Chief, Office of Air Force History, visits with Fern Kinion, right center, Cadet Awards Specialist at the Academy; and Col. Carl G. Baily, Deputy Commandant of the Cadet Wing, and Mrs. Baily.

we're trying to do in the Air Force. We're trying to work for high standards, good discipline, and concern for the individual, and all of this takes teamwork. And, you certainly had a great deal of teamwork in winning this honor.

"We are proud of the Air Force Academy, and we're also proud of the Air Force Association. Our thanks to you, Marty [Ostrow] and Joe [Shosid], and to my old friend and National War College classmate, Mike Ingelido, and to all the supporters and friends of the Air Force Association here this evening. You do a great job not only in supporting the Air Force, but in supporting your country, this great nation of ours."

AFA's President Joe L. Shosid then presented the AFA's Outstanding Squadron Trophy for 1975 to the squadron's three cadet commanders—Cadet Lt. Cols. William O. Ashcraft, Kimberly C. Schwarz, and Christopher A. Fillar. Each cadet commander received a life membership in the Air Force Association, and each member of the squadron received a pair of cufflinks bearing the seal of the Air Force Academy and the emblem of the Air Force Association. Cadet Schwarz responded in behalf of the 29th Squadron.

Among the some 650 persons who attended the dinner were Medal of Honor winner Maj. James P. Fleming, a Military Training Instructor at the Academy; Gen. Lucius D. Clay, Jr., Commander of Aerospace Defense Command, and Commander in Chief of Continental Air Defense Command and North American Air Defense Command; Lt. Gen. James E. Hill, Commander, Alaskan Command; retired Lt. Gen. Albert P. Clark, a former Superintendent of the Academy; Maj. Gen. Jack K. Gamble, Commander, Alaskan Air Command; Maj. Gen. Lucius Theus, Commander, Air Force Accounting and Finance Center; Brig. Gen. William T. Woodyard, Dean of the Air Force Academy; Brig. Gen. Hoyt S. Vandenberg, Jr., Commandant of Cadets; Col. Francis E. Merritt, Director of Athletics; and, representing all the Air Force Association leaders, AFA Board Chairman Martin M. Ostrow.

For the first time, there was music for dancing after the dinner. Those who have attended many of these dinners agree that the 1975 Outstanding Squadron Dinner was one of the finest in the sixteen-year history of this event. ■

Aerospace Education Foundation (AFA) Honor Roll of Jimmy Doolittle Fellows

In this first Honor Roll of Jimmy Doolittle Fellows, the Foundation proudly recognizes the individuals, corporations, groups, etc., who are responsible for the expansion of the Foundation's unique program . . . which already has made available Air Force courses to more than 300 schools in 45 states.

Each name on this Honor Roll represents a tax-deductible $1,000 contribution to the Aerospace Education Foundation. A Jimmy Doolittle Fellow receives a 12" by 7" Hawaiian walnut plaque featuring a bronze medallion bearing the Doolittle portrait. In addition, a bronze plate identifies the Fellow by name and year of affiliation. The plaque is designed for easy removal of the bronze medallion, on the back of which is this inscription:

"A Jimmy Doolittle Fellow supports advancement of education through transfer to the nation's schools of instructional systems based on applying aerospace technology to curriculum development, thereby enhancing the U. S. Air Force public image."

Mrs. Joe Doolittle, the General's wife, was the first Jimmy Doolittle Fellow. Others are listed below in the order of their affiliation. The first fifteen were 1974 Charter Fellows.

To help in this cause, send your tax-deductible $1,000 to the Aerospace Education Foundation (AFA), 1750 Pennsylvania Avenue, N.W., Washington, D. C. 20006.

Details on the Jimmy Doolittle Fellow Program and plaque were presented in the March 1975 issue of this magazine.

HONOR ROLL

	Name	Sponsored By	State
1.	Mrs. James H. Doolittle	AEF/AFA Trustees and Staff	California
2.	Utah Air Force Association	Utah AFA	Utah
3.	Lt. Gen. James T. Stewart	Wright Memorial Chapter, AFA	Ohio
4.	Maxwell A. (Mac) Kriendler (In Memoriam)	Jack Gross	New York
5.	Joe Higgins	Self	California
6.	Arthur Kates	Self	California
7.	Samuel M. Hecht	Self	Maryland
8.	George D. Hardy	Self	Maryland
9.	Bob Hope	Self	California
10.	Fred Hummel (Deceased—1975)	Self	Virginia
11.	Dr. Dan Callahan	Self	Georgia
12.	Dr. Wayne O. Reed (In Memoriam)	AEF Trustees	District of Columbia
13.	Willard F. Rockwell, Jr.	Rockwell International Corp.	California
14.	Governor Mills E. Godwin, Jr.	Virginia AFA Chapters	Virginia
15.	Judge John G. Brosky	Friends and Associates	Pennsylvania
16.	Charles Kuhn	Weil McLain Company	Texas
17.	Northrop Corporation	Northrop Corp.	California
18.	Jon R. Donnelly	Richmond Chapter, AFA	Virginia
19.	Neil November	Mrs. Neil November and Friends	Virginia
20.	Dana B. Hamel	Gordon Willis	Virginia
21.	William W. Spruance	Self	Delaware
22.	Arthur C. Storz, Sr.	Arthur C. Storz, Jr.	Nebraska
23.	Senator Barry Goldwater	Nation's Capital Chapter, AFA	Arizona
24.	James H. Straubel	William W. Spruance and Joe Higgins	Virginia
25.	Theodore O. Wright	Self	Washington

Mrs. James H. Doolittle

Utah Air Force Association

Lt. Gen. James T. Stewart

Maxwell A. (Mac) Kriendler
(In Memoriam)

Joe Higgins

Arthur Kates

Samuel M. Hecht

George D. Hardy

Bob Hope

Fred Hummel (Deceased)

Dr. Dan Callahan

Dr. Wayne O. Reed
(In Memoriam)

Willard F. Rockwell, Jr.

Governor Mills E. Godwin, Jr.

Judge John G. Brosky

Charles Kuhn

NORTHROP

Northrop Corporation

Jon R. Donnelly

Neil November

Dana B. Hamel

William W. Spruance

Arthur C. Storz, Sr.

Senator Barry Goldwater

James H. Straubel

Theodore O. Wright

In December,
AIR FORCE Magazine
proudly presents...

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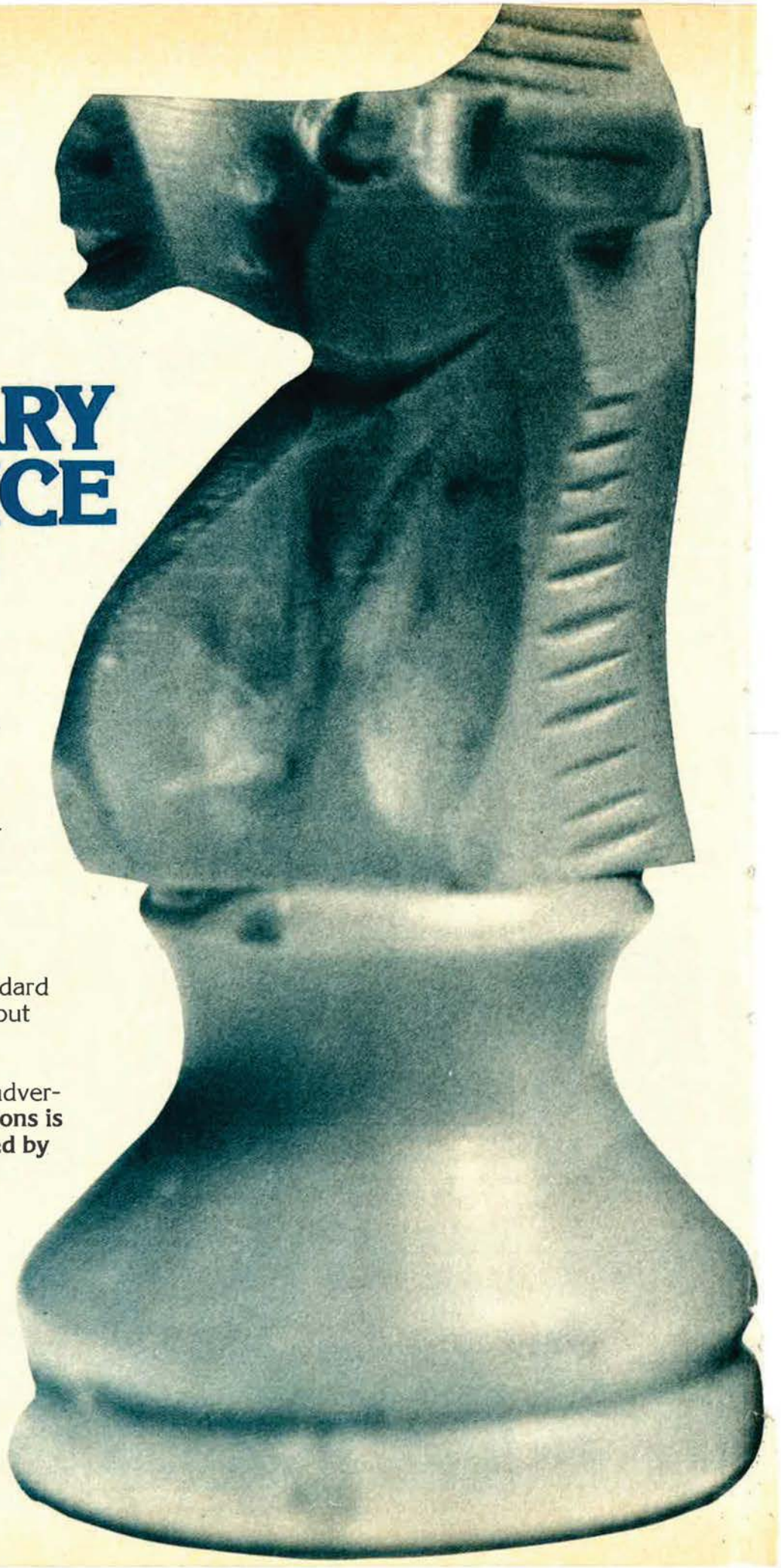
THE MILITARY BALANCE 1975/76



For the fifth consecutive year, under an exclusive arrangement, AIR FORCE Magazine presents the Institute's major report, "The Military Balance 1975/76", a comprehensive country-by-country analysis of the military forces of the world.

Widely read and often referred to, this issue has traditionally become a standard working reference throughout the year.

You can be a part of this important issue with your advertising. **Closing for reservations is October 24. Copy is required by November 5.**

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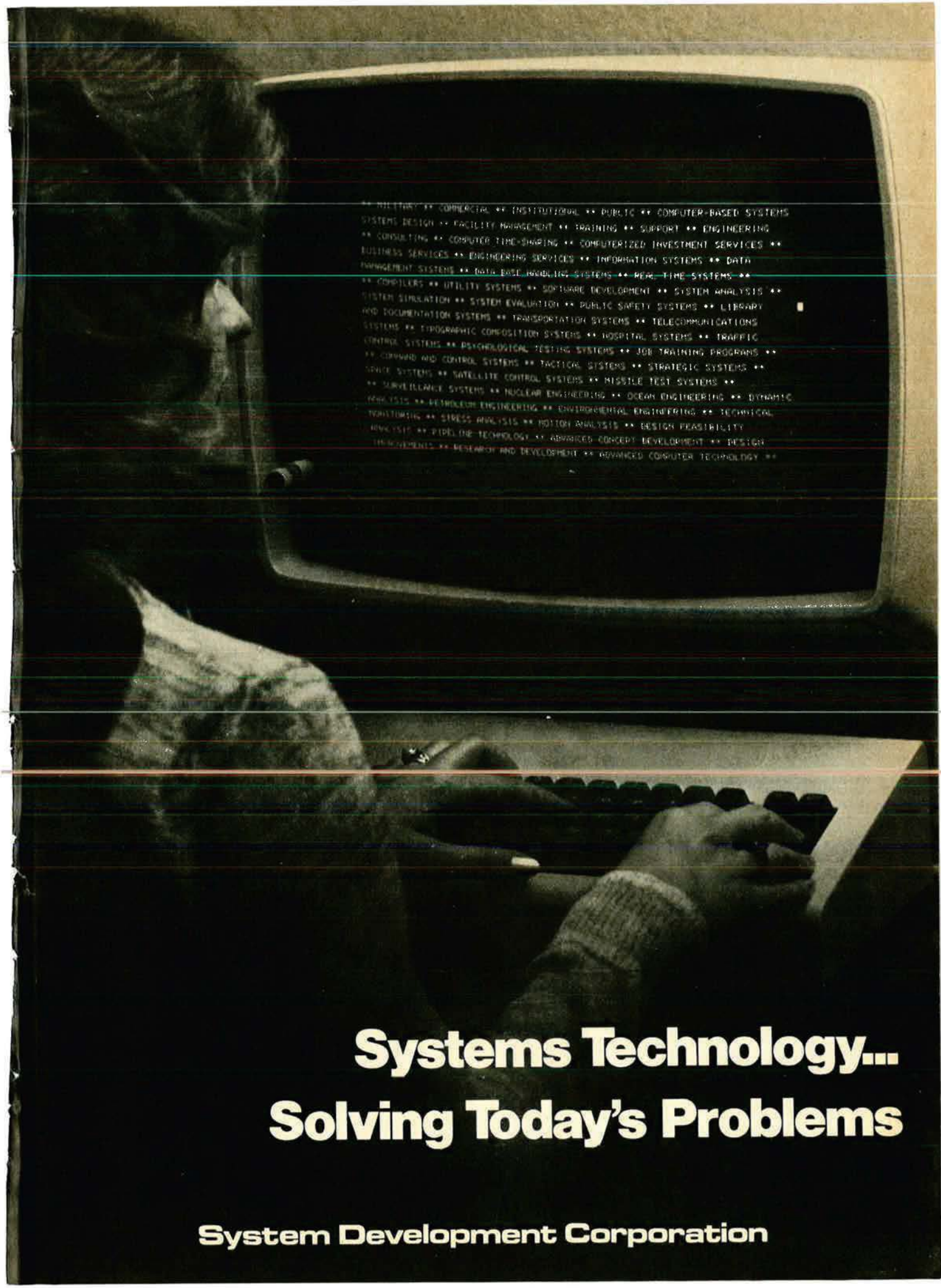
MAGAZINE



Systems Technology... Solving Today's Problems

System Development Corporation

By Don Steele
AFA AFFAIRS EDITOR

THE COLORADO STATE ORGANIZATION . . .
cited for consistent and effective programming in support of the missions of AFA and its Aerospace Education Foundation, exemplified in its two Aerospace Education Workshops for educators.

During the past operating year, the Colorado State AFA has sponsored two Aerospace Education Workshops under the guidance of its Director of Aerospace Education, Noel A. Bullock. Twenty-two educators attended the first nine-week course. The sixty participants in the second workshop, a three-week course held in June and July, are shown during a field trip to the Air Force Academy in Colorado Springs. Both workshops were accredited by Adams State College for up to nine credit hours. In recognition of the State AFA's consistently effective programming in support of AFA and its Aerospace Education Foundation, AFA President Joe L. Shosid names the Colorado State AFA as "AFA's Unit of the Month" for September.

The National Aerospace Education Association (NAEA) recently named Noel A. Bullock, Director of Aerospace Education for the Colorado State AFA, as the National Workshop Director of the Year. Jack Sorenson, left, NAEA President, presents Mr. Bullock the award, as AFA's Executive Director, James H. Straubel, right, looks on. Mr. Bullock, who was the Colorado State AFA's 1975 "Man of the Year" and is President of AFA's Blue Barons Chapter, has directed fifty-seven continuous Aerospace Education Workshops over a twenty-two-year period.

The record attendance at the 1975 AFA Nominating Committee Meeting in Colorado Springs, Colo., on May 31, included fourteen former AFA National Presidents and/or Board Chairmen. They are, from left, Jess Larson, George D. Hardy, Martin M. Ostrow, John R. Alison, Arthur F. Kelly, Joe L. Shosid, James H. Doolittle, Jack B. Gross, J. B. Montgomery, Thomas G. Lanphier, Jr., Howard T. Markey, and James M. Trail. Also present at the meeting, but not in the picture, were Joe Foss and John P. Henebry. (Photo by John G. Brosky)

During the Aerospace Education Foundation's Board of Trustees Meeting in Colorado Springs, Colo., on May 31, retired USAF Lt. Gen. James H. "Jimmy" Doolittle, AFA's first National President and a member of the Foundation's Board, made a surprise presentation to AFA Executive Director James H. Straubel of a plaque designating him a Jimmy Doolittle Fellow of the Aerospace Education Foundation. The award was sponsored by AFA National Directors William W. Spruance and Joe Higgins. Shown are, from left, General Doolittle, Mr. Straubel, General Spruance, Mr. Higgins, and George D. Hardy, Chairman of the Foundation's Board of Trustees. (Photo by John G. Brosky)

The Nation's Capital Chapter of Washington, D. C., recently sponsored a luncheon honoring Sen. Barry Goldwater (R-Ariz.). More than 200 leaders of Congress, the Air Force, aerospace industry, and AFA attended the luncheon in the Dirksen Senate Office Building. During the program, Gen. David C. Jones, left, USAF Chief of Staff, presented Senator Goldwater a Jimmy Doolittle Fellow plaque designating him a Jimmy Doolittle Fellow of the Aerospace Education Foundation. The award was sponsored by the Chapter. AFA President Joe L. Shosid was a head-table guest.

The Oklahoma State AFA's 1975 Convention was hosted by the Gen. Thomas P. Gerrity Chapter and held in the Tinker AFB Officers' Club. The Hon. Tom Steed, US Congressman from Oklahoma's Fourth District, was the guest speaker at the convention luncheon. During the program, Ivan H. Nelson, President of the host Chapter, presented Chapter awards of appreciation to Col. James A. Mullins, USAF (Ret.); Vernon Frame; and Col. Edward L. Uher. In the photo, Mr. Nelson, left, presents an award to Colonel Mullins. Shown at the head table are, from left, Chapter Secretary Gaylord Giles; Oklahoma State AFA President David Blankenship, who was reelected at the business session; Stanley Campbell, Vice President for AFA's Southwest Region; and Don Steele, AFA's Assistant Executive Director/Field Operations, who conducted an AFA Leaders' Workshop during the convention.

Four persons from Wright-Patterson AFB were honored at the Ohio State AFA's 1975 Convention in Springfield. Lt. Gen. James T. Stewart, right, Commander, Aeronautical Systems Division (AFSC), received the State AFA's annual Aerospace Power Award; Gen. William V. McBride, second from right, then Commander, Air Force Logistics Command, now Vice Chief of Staff, USAF, received its Presidential Citation; SMSgt. David H. Van Meter, left, was awarded a Certificate of Appreciation; and John McCollom, assistant director of the Specialized Aircraft Program Office in ASD, was named the Ohio State AFA's "Man of the Year." The awards were presented by Robert Hunter, center, Ohio State AFA President. (Official USAF photo)

Gen. David C. Jones, USAF Chief of Staff, was the guest speaker at the Texas State AFA's 1975 Convention Banquet, held recently in San Antonio. During the program, State President Vic Kregel presented the State AFA's "Nurse of the Year" award to Capt. Catherine G. Cox, Chief Hemodialysis Nurse at Wilford Hall USAF Medical Center. Seventeen other Texas State AFA awards were presented during the banquet.

AFA News

Majs. James V. Sullivan and Noel F. Widdifield, SR-71 pilot and reconnaissance systems officer, respectively, who last September set a world speed record on a flight from New York to London, were guest speakers at a recent dinner meeting sponsored by the Fresno Chapter, Calif. Shown in the photo are, from left, Major Sullivan; Col. Gregory "Pappy" Boyington, USMC (Ret.), Medal of Honor recipient and WW II ace; Chapter President John R. "Ted" Feasel; and Major Widdifield.

Head-table guests at the Massachusetts State AFA's 1975 Convention Banquet included, standing from left, AFA Board Chairman Martin M. Ostrow, who was the guest speaker; Rev. Msgr. Rosario L. U. Montcalm, Col., USAF (Ret.), the State AFA's Chaplain and a former AFA National Chaplain; seated from left, Joseph E. Assaf, a permanent AFA National Director; Col. Sigurd L. Jensen, Jr., Commander, 3245th Air Base Group, L. G. Hanscom AFB; and Andrew W. Trushaw, Jr., Vice President for AFA's New England Region. Maj. Gen. Wilbur L. Creech, Commander, Electronic Systems Division (AFSC), was a special guest at the convention banquet. (Photo by Felix Seligman)

During the Texas State AFA's 1975 Convention Awards Banquet, AFA President Joe L. Shosid, left, presented AFA's Air Training Command Technical Training Instructor of the Year award to TSgt. Jeremiah H. Needham, an instructor at the USAF School of Applied Aerospace Science at Chanute AFB, Ill. Mr. Shosid presented five other national AFA awards during the program and was the speaker at the convention luncheon.

The Sacramento Chapter's recent dinner meeting in the Mather AFB Officers' Club featured an address by Brig. Gen. Robert W. Bazley, Commander, 323d Flying Training Wing at Mather. General Bazley's subject was "The USAF Navigator Today." During the program, Erlon Perkins, left, received a gold-leafed pan, the kind used for panning gold, from Chapter President Robert W. Cochran, right, in appreciation of his more than twenty years of service to the Chapter as its Treasurer. Chapter checks for $250 each were presented to the NCO Wives Clubs at Mather and McClellan AFBs, the Cameron Park and McClellan AFB Air Explorers Posts, and the Sacramento Valley Group Four Civil Air Patrol.

Lt. Gen. James T. Stewart, left center, Commander, Aeronautical Systems Division (AFSC), presents a check for $2,300 to Col. Bernie S. Bass, Director of the Air Force Museum. The money was donated by Air Force and industry personnel who played in the recent ASD/AFA Air Force Museum Benefit Golf Tournament. Norman "Dutch" Hellman, left, is Vice President, Wright Memorial Chapter, a cosponsor of the event; and John McCollom, right, is assistant director of ASD's Specialized Aircraft Program Office and Tournament Chairman. Nearly $15,000 has been donated to the Museum in the five years the tournament has been held. (Official USAF photo)

Sixteen USAF, Army, and Navy JROTC drill teams competed in the 1975 Florida State University (FSU) Drill Meet. Members of the Paul T. Suttle Squadron of the Arnold Air Society and Angel Flight assisted with the arrangements. Here, Col. Charles Wilson, PAS at FSU, presents the Commanders' Trophy to J. Kirchoff, Cadet Commander of the Northside High School AFJROTC Drill Team, Warner Robins, Ga., as the "top drill team commander." Herbert M. West, Jr., seated, left center, Vice President for AFA's Southeast Region, presented the AFA plaque to the Northside Drill Team as the top AFJROTC team in the meet.

William R. Sifford, right, Immediate Past President of the Mobile Chapter, congratulates Brig. Gen. John R. Dyas, USAF (Ret.), following his installation as the new President of the Chapter. The Chapter's installation of officers was held in the US Coast Guard Aviation Training Center Officers' Club, Mobile, Ala.

Maj. Gen. Harry M. Darmstandler, at the podium, Special Assistant to the USAF Chief of Staff for B-1 Matters, was the guest speaker at a recent dinner sponsored by AFA's Tucson Chapter in the Davis-Monthan AFB Officers' Club. In his address, the General described the proposed B-1 bomber as a necessary new weapon "to provide this country with a continuing real and effective deterrent to nuclear attack." Others at the head table are, from left, Mrs. Leo Jordan, wife of the Chapter President; Tucson Mayor Lewis Murphy; and Mrs. Raymond Haupt, wife of the 12th Air Division Commander.

Gen. William V. McBride, then the Commander of the Air Force Logistics Command, now Vice Chief of Staff, USAF, was the guest of honor and speaker at the Pennsylvania AFA's 1975 Convention Banquet in Hershey. AFA President Joe L. Shosid was the convention luncheon speaker. Mr. Shosid, left center, is shown as he congratulated General McBride, right, on an outstanding address. Donald V. Snyder, left, Olmsted Chapter President and Convention Chairman, and Pennsylvania State AFA President Deane Sterrett, right center, also participated in the program.

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Insured's Age	Coverage	Extra Accidental Death Benefit*	Monthly Cost Individual Plan	Optional Family Coverage Spouse	Optional Family Coverage Each Child**	Monthly Cost Family Coverage
20-24	$66,000	$12,500	$10.00	$6,000	$2,000	$2.50
25-29	60,000	12,500	10.00	6,000	2,000	2.50
30-34	50,000	12,500	10.00	6,000	2,000	2.50
35-39	40,000	12,500	10.00	6,000	2,000	2.50
40-44	25,000	12,500	10.00	5,250	2,000	2.50
45-49	15,000	12,500	10.00	4,050	2,000	2.50
50-59	10,000	12,500	10.00	3,000	2,000	2.50
60-64	7,500	12,500	10.00	2,250	2,000	2.50
65-69	4,000	12,500	10.00	1,200	2,000	2.50
70-75	2,500	12,500	10.00	750	2,000	2.50
20-24	$100,000	$12,500	$15.00	$6,000	$2,000	$2.50
25-29	90,000	12,500	15.00	6,000	2,000	2.50
30-34	75,000	12,500	15.00	6,000	2,000	2.50
35-39	60,000	12,500	15.00	6,000	2,000	2.50
40-44	37,500	12,500	15.00	5,250	2,000	2.50
45-49	22,500	12,500	15.00	4,050	2,000	2.50
50-59	15,000	12,500	15.00	3,000	2,000	2.50
60-64	11,250	12,500	15.00	2,250	2,000	2.50
65-69	6,000	12,500	15.00	1,200	2,000	2.50
70-75	3,750	12,500	15.00	750	2,000	2.50

✻ A 15% dividend was declared for all 1974 participants, even further reducing net monthly cost of insurance!

*In the event of an accidental death occuring within 13 weeks of the accident, the AFA plan pays a lump sum benefit of $12,500 **in addition to** your plan's regular coverage benefit, except as noted under AVIATION DEATH BENEFIT, below.

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AVIATION DEATH BENEFIT: A total sum $15,000 under the Standard Plan or $22,500 under the High-Option Plan is paid for death which is caused by an aviation accident **in which the insured is serving as pilot or crew member of the aircraft involved.** Under this condition, the Aviation Death Benefit is paid in lieu of all other benefits of this coverage.

AFA's DOUBLE PROTECTOR is a **double opportunity** for you to get the life insurance coverage you want and need. AFA's **Standard Plan** is adequate for most families. But if you have a need for greater protection, you should select the **High Option Plan.**

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Wide Eligibility. All active duty, Ready Reserve and National Guard personnel under age 60, plus Academy and college or university ROTC cadets are eligible for this coverage. (Because of certain limitations on group insurance coverage, Reserve and Guard personnel who reside in Ohio, Texas, Florida and New Jersey should request information from AFA headquarters on a separate policy providing similar benefits.)

No War Clause, hazardous duty restriction or geographical limitation.

✻ **Reduction of Cost by Dividends.** While the payment of future dividends cannot be guaranteed, the net cost of this coverage has been reduced by dividends in 10 of the last 13 years.

Keep Your Coverage after Leaving Active Duty. Both the premium amount and schedule of benefits will remain the same.

Disability Waiver of Premium Benefits, if you become totally disabled for at least nine months, prior to age 60.

Full Choice of Settlement Options, including individualized arrangements for special situations.

Guaranteed Conversion Privilege. Coverage under the group program may be converted to any permanent plan of insurance offered by the Underwriter, **regardless of your health,** upon attainment of age 75 or termination of AFA membership.

Convenient Premium Payment Plans. Premium payments may be made by monthly government allotment, or direct to AFA in quarterly, semi-annual or annual installments.

EFFECTIVE DATE OF YOUR COVERAGE. All certificates are dated and take effect on the last day of the month in which your application for coverage is approved. Coverage runs concurrently with AFA membership. AFA Military Group Life Insurance is written in conformity with the insurance regulations of the State of Minnesota. The insurance will be provided under the group insurance policy issued by United of Omaha to the First National Bank of Minnesota as trustee of the Air Force Association Group Insurance Trust.

EXCEPTIONS. There are a few logical exceptions to this coverage. They are:

Group Life Insurance: Benefits for suicide or death from injuries intentionally self-inflicted while sane or insane shall not be effective until your coverage has been in force for 12 months.

The Accidental Death Benefit and Aviation Death Benefit shall not be effective if death results: (1) From injuries intentionally self-inflicted while sane or insane, or (2) From injuries sustained while committing a felony, or (3) Either directly or indirectly from bodily or mental infirmity, poisoning or asphyxiation from carbon monoxide, or (4) During any period a member's coverage is being continued under the waiver of premium provision, or (5) From an aviation accident, either military or civilian, in which the insured was acting as pilot or crew member of the aircraft involved, except as provided under AVIATION DEATH BENEFIT.

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United of Omaha

Group Policy GLG-2625
United Benefit Life Insurance Company
Home Office: Omaha, Nebraska

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Rank Last First Middle

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Date of birth Mo. Day Yr.	Height Weight	Social Security Number

Please indicate category of eligibility and branch of service.

- ☐ Extended Active Duty
- ☐ Ready Reserve or National Guard
- ☐ Air Force
- ☐ Other _____ (Branch of service)
- ☐ Air Force Academy
- ☐ _____ Academy
- ☐ ROTC Cadet _____ Name of college or university

Name and relationship of primary beneficiary

Name and relationship of contingent beneficiary

This insurance is available only to AFA members

- ☐ I enclose $10 for annual AFA membership dues (includes subscription ($9) to AIR FORCE Magazine).
- ☐ I am an AFA member.

Please indicate below the Mode of Payment and the Plan you elect.

HIGH OPTION PLAN			STANDARD PLAN	
Members Only	Members and Dependents	Mode of Payment	Members Only	Members and Dependents
☐ $ 15.00	☐ $ 17.50	**Monthly** government allotment. I enclose 2 months' premium to cover the period necessary for my allotment to be established.	☐ $ 10.00	☐ $ 12.50
☐ $ 45.00	☐ $ 52.50	**Quarterly.** I enclose amount checked.	☐ $ 30.00	☐ $ 37.50
☐ $ 90.00	☐ $105.00	**Semiannually.** I enclose amount checked.	☐ $ 60.00	☐ $ 75.00
☐ $180.00	☐ $210.00	**Annually.** I enclose amount checked.	☐ $120.00	☐ $150.00

Names of Dependents To Be Insured*	Relationship to Member	Dates of Birth Mo. Day Yr.	Height Weight

Have you or any dependents for whom you are requesting insurance ever had or received advice or treatment for: kidney disease, cancer, diabetes, respiratory disease, epilepsy, arteriosclerosis, high blood pressure, heart disease or disorder, stroke, venereal disease or tuberculosis? Yes ☐ No ☐

Have you or any dependents for whom you are requesting insurance been confined to any hospital, sanitarium, asylum or similar institution in the past 5 years? Yes ☐ No ☐

Have you or any dependents for whom you are requesting insurance received medical attention or surgical advice or treatment in the past 5 years or are now under treatment or using medications for any disease or disorder? Yes ☐ No ☐

IF YOU ANSWERED "YES" TO ANY OF THE ABOVE QUESTIONS, EXPLAIN FULLY including date, name, degree of recovery and name and address of doctor. (Use additional sheet of paper if necessary.)

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Date _____, 19__ _____
Member's Signature

9/75
Form 3676GL App

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AFM-1

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OBJECTIVES

The Association provides an organization through which free men may unite to fulfill the responsibilities imposed by the impact of aerospace technology on modern society; to support armed strength adequate to maintain the security and peace of the United States and the free world; to educate themselves and the public at large in the development of adequate aerospace power for the betterment of all mankind; and to help develop friendly relations among free nations, based on respect for the principle of freedom and equal rights to all mankind.

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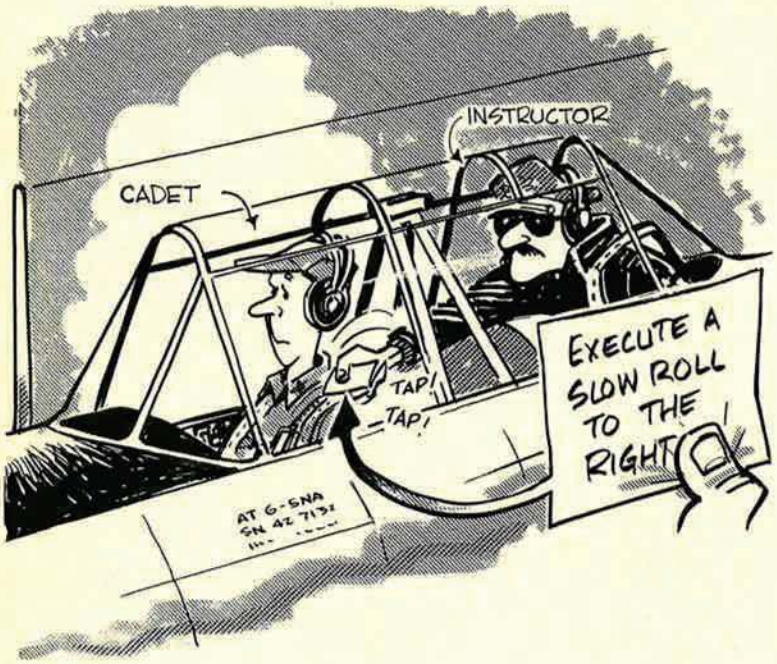
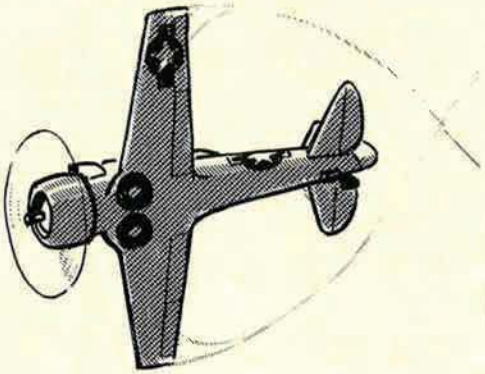
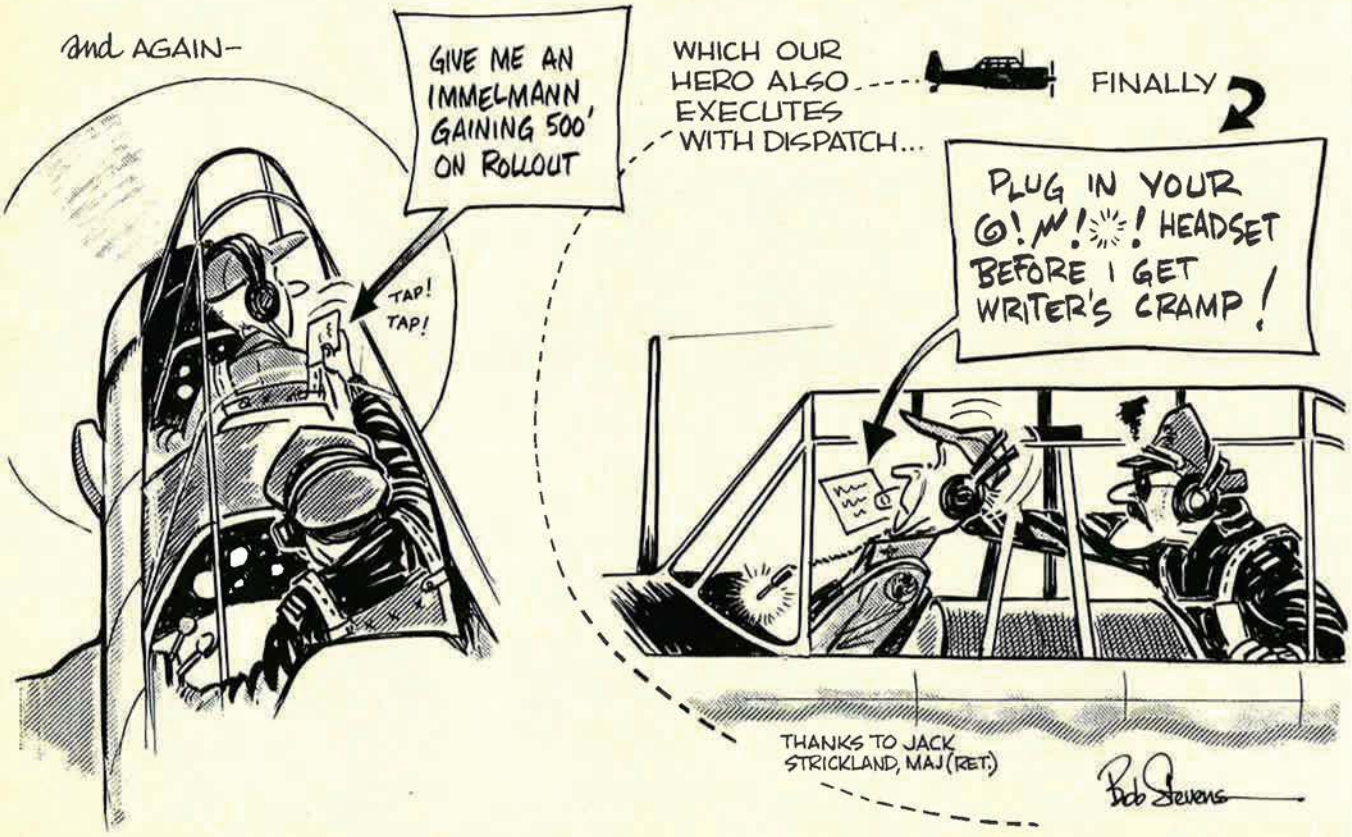


and OUR NEOPHYTE DUTIFULLY RESPONDS...



and AGAIN—



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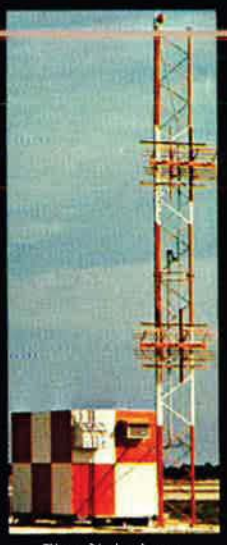

The Glideslope

The Localizer

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