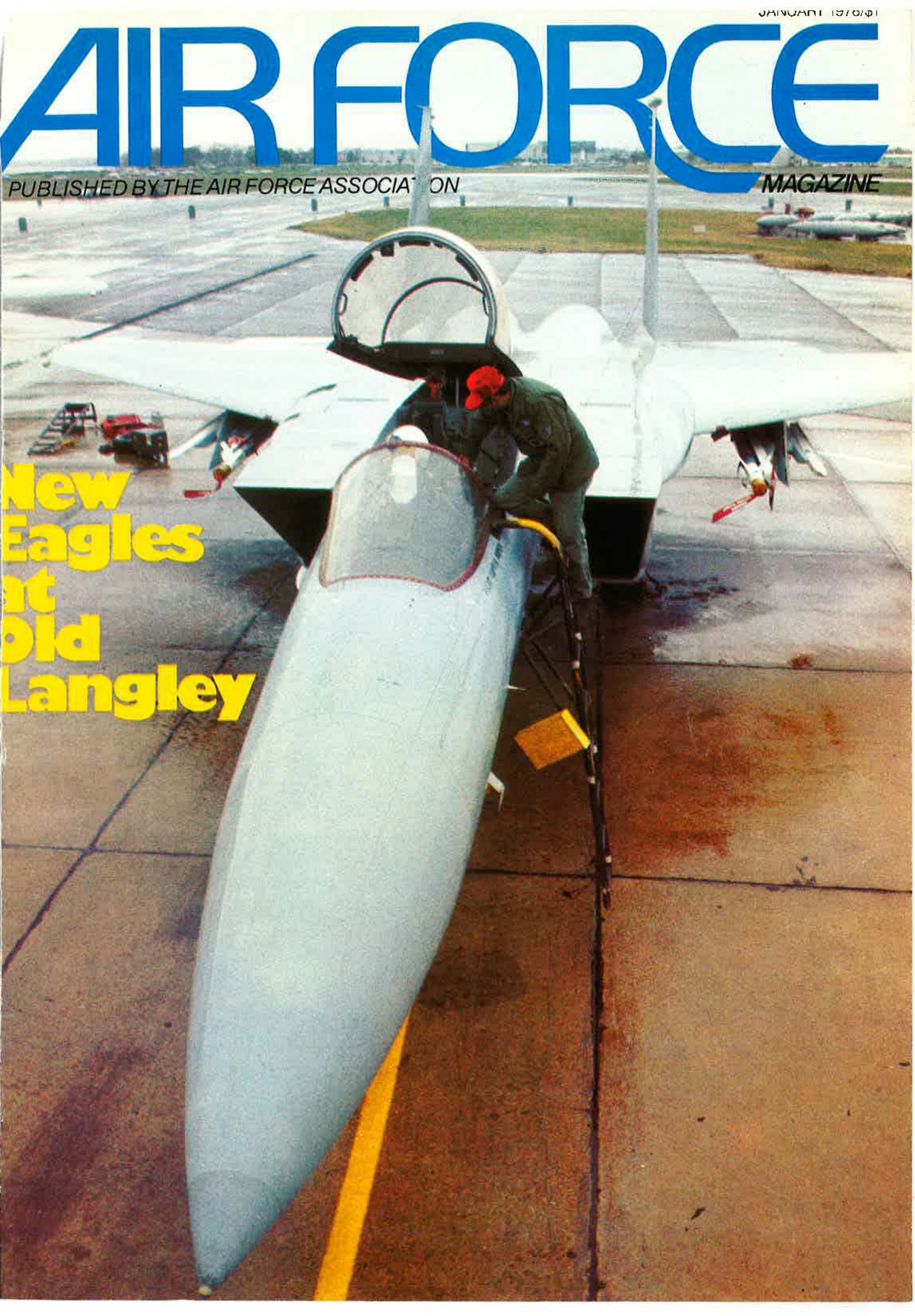
JANUARY 1978/$1

AIR FORCE

PUBLISHED BY THE AIR FORCE ASSOCIATION MAGAZINE



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AIR FORCE MAGAZINE
PUBLISHED BY THE AIR FORCE ASSOCIATION

JANUARY 1978
VOLUME 61, NUMBER 1

This Month

ABOUT THE COVER

While on a field trip, Bill Ford, AIR FORCE Magazine's Air Director, caught this F-15 Eagle, USAF's newest air-superiority fighter, on a wet ramp at Langley AFB, USAF's oldest continuously active base and home of TAC's 1st Tactical Fighter Wing. Crew Chief SSgt. Miguel Calderon helps Capt. Robert Landry strap in for a training mission.

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IN THE LONG RUN, THE BE

The Boeing AMST is designed to carry all the Army's major combat vehicles, including the 120,000-pound main battle tank, into forward battle areas. That's the short-haul story.

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AN EDITORIAL

Prudence, Parity, and Priorities

By John L. Frisbee, EXECUTIVE EDITOR

Washington, D. C., December 12, 1977

TOWARD the end of January, the Carter Administration will reveal the first defense budget for which it is solely responsible. For reasons that we will come to later, the forthcoming FY '79 budget will, in our judgment, be the most important in many years. To see why calls for a look back over the past twelve months.

On January 17, 1977, then Secretary of Defense Donald Rumsfeld presented the Ford Administration's Report to the Congress on the FY '78 defense budget. The report requested Total Obligational Authority of $123.1 billion—a projected 6.3 percent real growth over the previous year, which, in turn, had shown a real increase of nearly six percent over FY '76, even after congressional cuts of more than $3 billion.

Mr. Rumsfeld reported that the annual rate of increase in Soviet defense expenditures from 1970–75 had [illegible] to five percent, "with relatively higher growth rates occurring in the latter half of the period." There appeared, he said, to have been an acceleration in the growth of Russian defense outlays. The dollar cost of Soviet defense programs was estimated to be something more than $30 billion above that of the US.

Estimating the size or growth rate of any element of the Soviet budget, or converting it to dollar costs, is, as we all know, a tricky business, full of uncertainties. But there is more certainty about what the Soviets do with many of their defense rubles. Within a fairly narrow margin for error, Mr. Rumsfeld could report that Soviet armed forces had expanded from 3,600,000 to 4,100,000 between 1967 and 1977. (US military manpower declined from 3,500,000 to 2,100,000 in the same period.)

In those years, the USSR had developed more new weapon systems than the US in every category save helicopters. In nearly every type of weapon associated with land warfare, plus several related to control of the seas, the Soviets enjoyed a numerical lead. In some areas, such as air defense and intercontinental missiles, that lead was—and remains—wide.

To counter the explosive growth in Soviet military capabilities, Mr. Rumsfeld judged that "even more effort will be required in the coming years."

Three days later, Jimmy Carter was inaugurated as our thirty-ninth president, pledged not to increase the defense budget, but to cut it by $5 billion. A month later, President Carter's new Secretary of Defense, Harold Brown, appeared before Congress to discuss the FY '78 defense budget as amended by the Carter Administration. Dr. Brown observed that "unlike the Soviets, we have been living off the investments [in equipment] we made in the late 1950s and early 196[illegible] . . . We have some catching up to do."

The amended budget request was for $120.4 billion well short of the $5 billion cut Candidate Carter talk about but still $2.7 billion lower than the Ford budg Secretary Brown judged that it would, however, "p vide for real but prudent growth in the resourc allocated to defense."

With subsequent DoD actions such as cancellati of B-1 production, and congressional slashes of sor $3 billion, Total Obligational Authority of the FY budget will come out at about $116.7 billion. The Pre dent's promised $5 billion cut will have been achieve but well over half of it by congressional action. Facto ing in inflation, the FY '78 budget shows less than o percent real growth over FY '77.

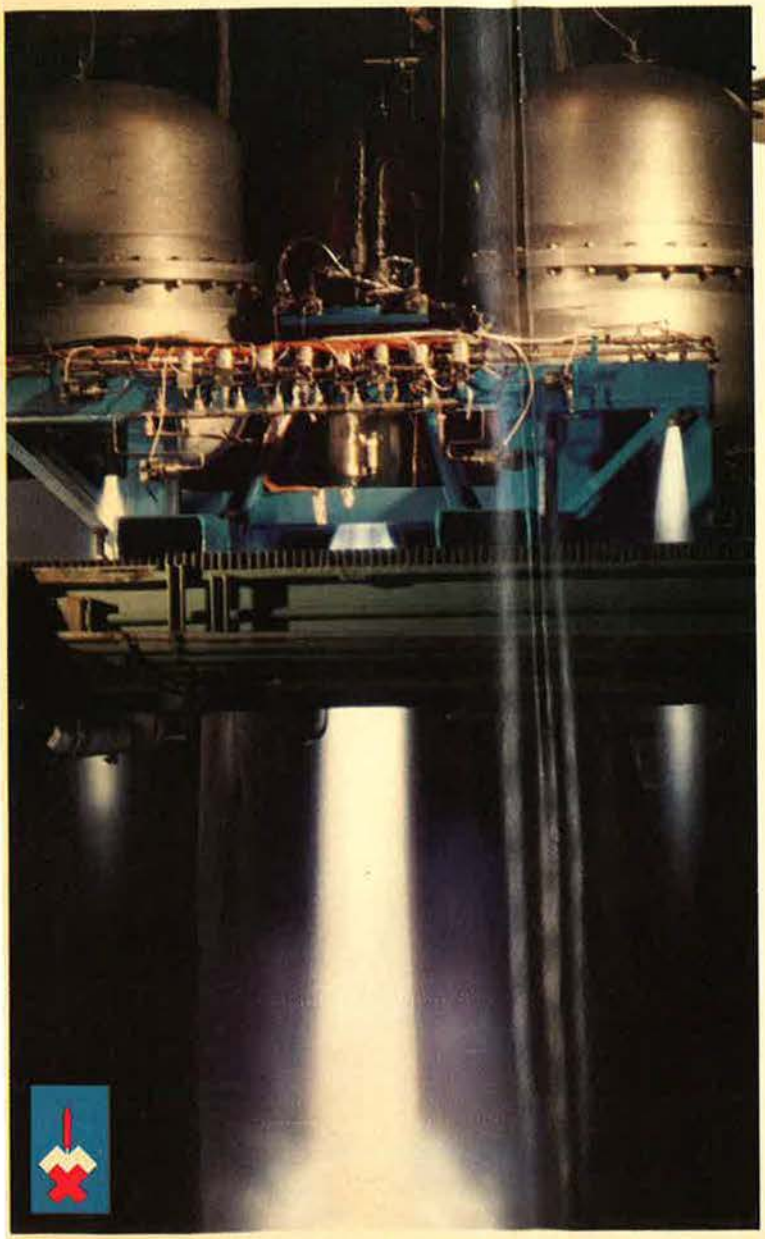
In the months since the amended budget was a nounced, the President and several senior officia [illegible] growing concern about NATO's defe rent capability and puzzlement over the purpose of th now-acknowledged Soviet arms buildup. Secreta Brown revealed in September that the Soviets not on are deploying fourth-generation ICBMs at a rate 100–150 a year, but also are developing one mobi and four new silo-based ICBMs.

Both the President and Dr. Brown have announc the intention to increase defense spending by appro mately three percent a year in real terms. At least part, that is a *quid pro quo* offered our NATO alli for a comparable move. There is uncertainty in son quarters whether the Administration means a three pe cent increase in the total US defense budget, or or in that part directly related to our NATO-assign forces. We may not know for several weeks.

The extraordinary significance of the new budg lies partly in the fact that it will be the Carter A ministration's first comprehensive statement of its d fense policy and the relation of that policy to natior objectives. It will provide a measure of the realis somewhat lacking a few months ago, with which Sov actions and intentions now are viewed. Perhaps mo important, it will tell our NATO allies whether t Administration (and subsequently the Congress) serious in its promise of a three percent increase, whether it is indulging in budgetary gimmickry. the latter turns out to be true, the future of NATO w be in doubt.

For our part, we question whether three percent r growth is enough to ensure continued parity with t USSR. But at the least, three percent is better th one.

ROCKETDYNE IS READY FOR THE MX STAGE IV SYSTEM.



Rockwell International

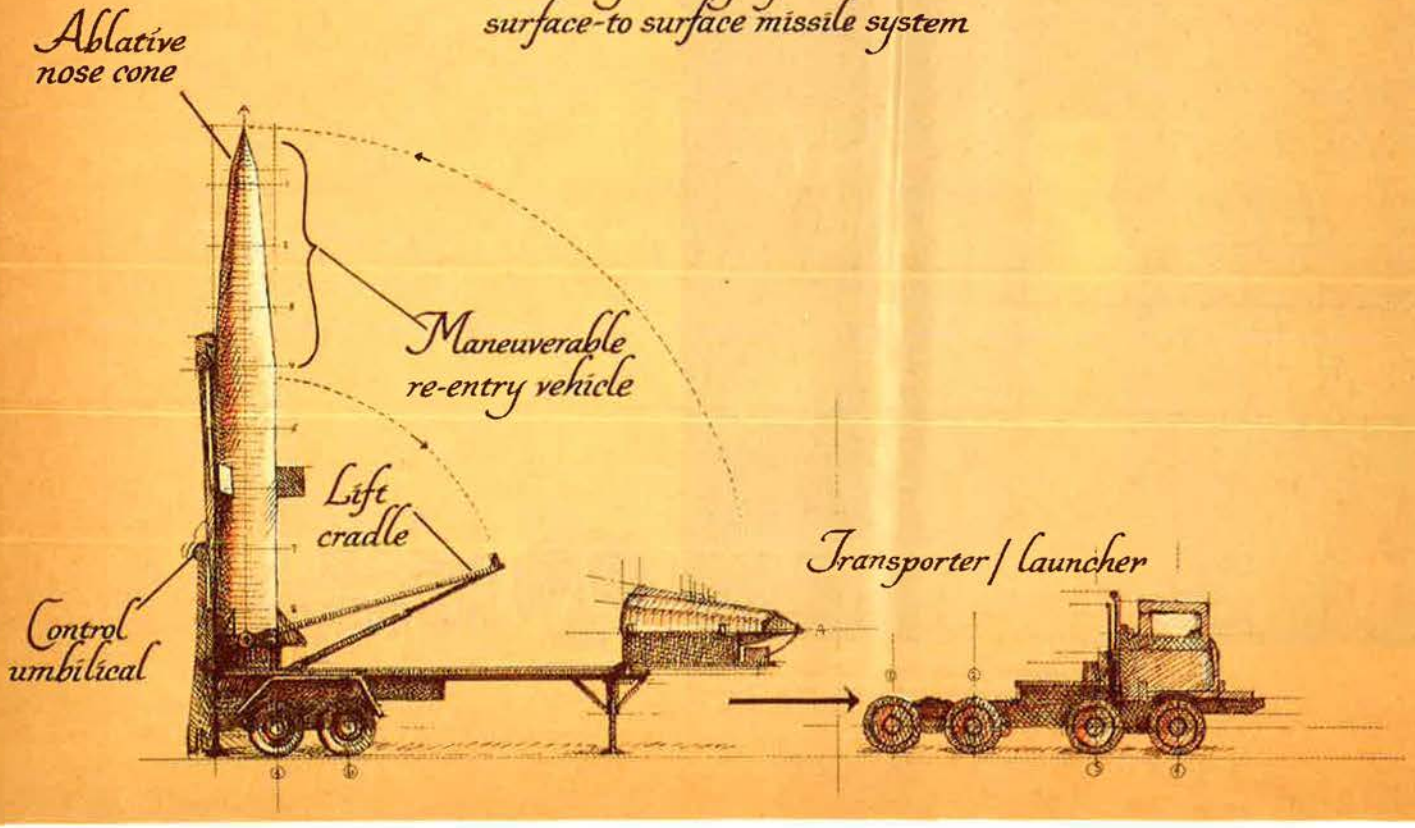
Rocketdyne Division, Rockwell International,
6633 Canoga Avenue, Canoga Park, CA 91304.

How do you develop one major tactical system after another?

One technological innovation after anothe

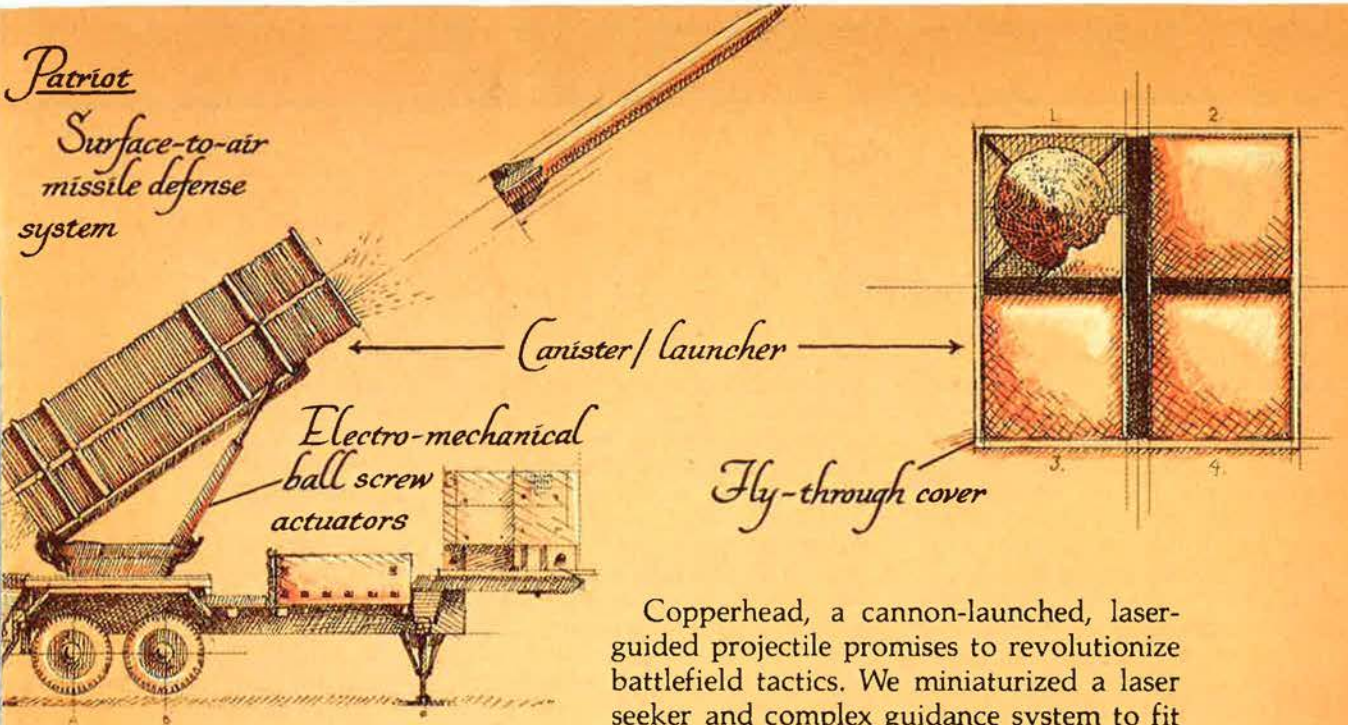
Pershing II

Two-stage, solid propellant mobile surface-to surface missile system



Patriot

Surface-to-air missile defense system



or 31 years we've been busy developing and roving the advanced technologies required or many of our country's complex defense ystems. Through innovative thinking and ur cumulative experience over the years e've developed a number of sophisticated olutions to tactical battlefield problems.

Pershing, Patriot and Copperhead are ood examples of this technical evolution.

The Pershing surface-to-surface missile is he Army's most powerful tactical nuclear eapon. For 15 years, through planned odular improvement, we've advanced the ate-of-the-art with improved mobility, ster reaction time and, in Pershing II, with remarkably precise terminal-guidance and ontrol system. Its unerring accuracy means ewer missiles to perform a mission.

Patriot is the Army's air defense weapon or the 1980s and beyond. As developer of he missile, canister and launcher for this impressive mobile system, we made new strides missile airframe, flight controls, autopilot nd propulsion technology. Equipped with a nique guidance system, and ability to outmart electronic countermeasures, Patriot ill be a vital element in battlefield air efense.

Copperhead, a cannon-launched, laser-guided projectile promises to revolutionize battlefield tactics. We miniaturized a laser seeker and complex guidance system to fit the cramped space of an artillery shell, and yet withstand the shock of firing. This advancement gives field artillery using ground and airborne controllers a first round accuracy, day and night, against moving or stationary targets. Now, a new version is being developed for the Navy to use at sea.

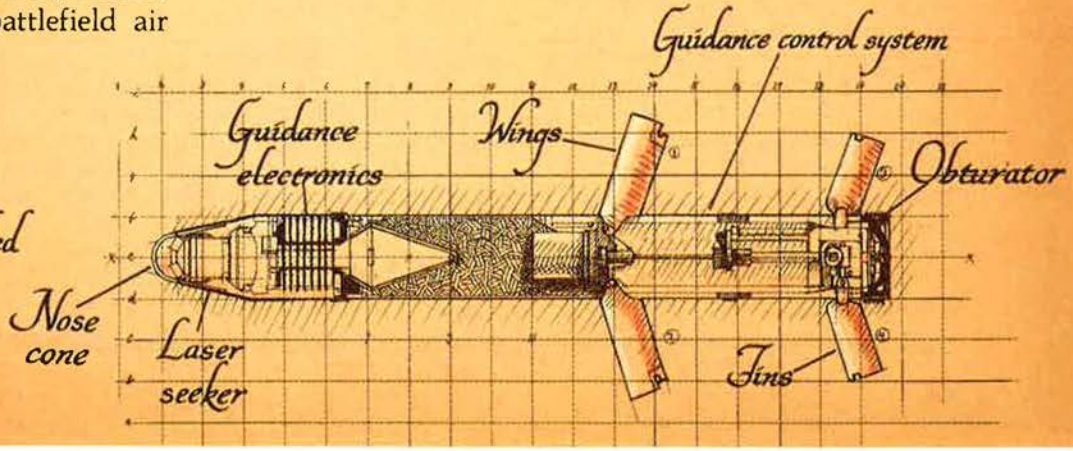
The advanced technologies we've developed for these systems, and for the more than 25 other missile systems we've produced and tested, have made Martin Marietta Aerospace the leader in its field. And the aerospace company preeminently qualified to design and build the next generation of battlefield interdiction and tactical air defense systems.

MARTIN MARIETTA

Martin Marietta Aerospace
6801 Rockledge Drive, Bethesda, Maryland 20034

Copperhead

Cannon launched, guided projectile



Airmail

Not the Ultimate Weapon

Edgar Ulsamer's well-reasoned article concerning the neutron bomb ["Exotic New Weapons: Reality or Myth?", September '77 issue] as a media event amply demonstrates that the bomb is but a logical extension of nuclear weaponry already in existence. He points out, correctly, that the media is off base in its treatment of the development of the bomb as the "ultimate" weapon. But false arguments about radiation and blast effects featured in the media are but one facet of the problem. Opponents to the continuation of the project also insist that the NATO conventional forces are either sufficiently strong to resist a sudden attack by the Warsaw Pact countries or that the NATO countries can build to the needed strength. The trouble with these arguments is that they are based on a series of myths.

One myth is that NATO can react quickly and with sufficient coordination to stop a strong drive on any front that a powerful enemy might choose. But this presupposes errorless intelligence and letter-perfect NATO response. NATO intelligence capability has proved to be very faulty in the past—most noticeably during the Hungarian and Czechoslovakian crises—and there is no reason to expect that it could do better in the future. It should also be obvious that the force coordination needed to stop a drive quickly has already been a problem with the Western bloc—even when the need for coordination was at its highest during the two World Wars.

Further, the NATO Pact forces are essentially defensive. This means that even *if* they were sufficiently strong to stop an offensive drive with conventional forces, they must first give ground to the enemy or resort immediately to tactical nuclear weapons. That we would use the presently deployed nuclear bombs quickly is a second myth. The current weapons are so highly destructive that we would undoubtedly wait to see what the outcome of the battle might be. Any delay, however, would place enemy troops on friendly territory and thus rule out any use of the tactical nuclear forces.

The third myth is that after absorbing a Warsaw Pact conventional attack, a NATO counteroffensive would be mounted. The World War II mentality as the basis of such an assumption fails to take into account the hard realities of a nuclear age. If confronted with a stalled offensive, the other side could merely call for a cease-fire knowing full well that the mere threat to use their own tactical nuclear bombs while occupying friendly territory would deter the Western nations from trying a counterdrive.

How would the neutron bomb affect the equation? First, the immediate use of tactical nuclear weapons will be seen by the USSR and its allies as a real option that the West might exercise. Second, even if the other side is convinced that the West might hesitate to use the bomb to try to stop a quick conventional offensive, they can never be sure that we would not mount a counteroffensive using a bomb that can be targeted against occupied areas where friendly peoples can be warned to evacuate.

There can be little doubt as to why the Soviets have propagandized strongly against the neutron bomb. Even if the USSR should also develop the weapon, its current strategy of building overwhelming conventional forces aimed at the heart of Europe would be neutralized. It's a pity that well-intentioned people in this country have fallen for the ploy.

Prof. Armand J. Galfo
College of William & Mary
Williamsburg, Va.

Reporter on the Scene

Re Claude Witze's "Wayward Press" [October '77 issue] story on the press and the Tet Crisis. Peer pressure was a major cause of the bad reporting from Vietnam. Most correspondents would not challenge the pseudo-sophisticated "opinion-makers" in the Saigon press corps and the media back home. No insecure teenager ever went along more completely with the "In" crowd.

I covered Vietnam four times—1962, 1964, the Communist Easter offensive, and the 1968 Tet truce attack—the latter from inside Hué, Saigon, and elsewhere. I tried in vain to get smirking journalist colleagues—many of whom held career American military men in contempt—to even consider the clear evidence that we were winning (within the limits placed by politicians). The mere discussion of such heretical thoughts guaranteed ridicule, so they blocked them from their minds. And from the American people.

Today, those who are warning of the grave danger to our very survival from communism face the same abuse.

Charles Wiley
Parlin, N. J.

Outstanding Airman Support

After reading Capt. Anthony Lynn Batezel's article, "The Twelve Isaiahs" (*November '77 issue, p. 41*), I would like to publicly thank the Air Force Association and all of its members for the most memorable week of our lives. I speak on behalf of the other eleven Outstanding Airmen in saying thank you, and we pledge our total support in the continuing success of the AFA Enlisted Advisory Council.

Your continued support of the Outstanding Airman Program indicates a genuine concern for the enlisted members of the United States Air Force.

SSgt. Ralph J. Gallegos
USAF Outstanding
Airmen of 1977
Hq. ARPC
Denver, Colo.

Success Story

I have been a member of AFA for years and have always appreciated AIR FORCE Magazine. But now that appreciation has turned into respect, admiration, and perhaps a little awe of the accuracy of both the facts and the predictions in your publication.

I just completed the Air War College correspondence course (with an overall grade of outstanding) and, being only a major, I was not eligible to join an on-base seminar, having to do all the research for some tough papers on my own. Your magazine was my seminar

group—and we beat the competition! Time and again I got ideas rom AIR FORCE, backed up my deas with it, refuted other so-called experts with it, and quoted often rom it. You got the proper credits. Without a question, your magazine was the finest source of defense nformation anywhere, and believe ne, I tried one hell of a lot of publications.

My final comment to the Commandant, AWC, in my end-of-course survey was: "Please urge all your students to join the AFA." Well done, and thanks.

Maj. Alexander S. Finta
Scott AFB, Ill.

Whatever Happened to Patriotism?

have followed with interest the recent articles, letters, etc., in AIR FORCE Magazine dealing with the subject of career motivation. With all of the emphasis on "career planning," "institution or occupation," and the other popular buzz words dealing with this subject, I think the following quote, attributed to Gen. George Kenney, gets to the heart of the matter as only he could:

"If you worry more about your career than about whether or not you are doing a good job for the Air Force, get out, and sell insurance, or real estate, or settle down on a farm, where your lack of courage and patriotism will not endanger the fate of your country and civilization."

It seems to me that says it all. Or am I just an old-fashioned relic from the brown-shoe Air Force days?

Col. Robert F. Myers, USAF (Ret.)
Marietta, Ga.

For Love of Flying

Re the Editors' comment on page of the October '77 issue, I can't believe that flying pay is necessary to get the best of rated talent.

I am sure that all the quality the Air Force could want lies in those who'd love to fly—like the early barnstormer gone military who exulted, "Not only will they give you an airplane to fly but they'll pay you or doing it!"

David G. Smith
Camden, Me.

We suggest that readers keep their letters to a maximum of 500 words. The Editors reserve the right to excerpt or condense as required in the interests of space or good taste. Names will be withheld on request, but unsigned letters are not acceptable.

Message From Moscow

In August of last year, I sent a request for some assistance in helping us here in Moscow celebrate the USAF's thirtieth anniversary. In a very kind gesture, AFA sent to me a number of copies of the September issue of AIR FORCE Magazine, which I proudly distributed to the members of the Moscow Air Attachés' Association. This Association consists of the principal and assistant air attachés of some thirty countries who are accredited to the Soviet Union and who serve here in Moscow. They were delighted with the magazines.

I had intended to host the September luncheon of the Association in my quarters in the Embassy on the anniversary of the founding of USAF, but as you are aware, a severe fire on August 26 did major damage to my apartment. On the day following the fire, the President of the Association, Brig. Gen. Ake Lonnberg, of the Swedish Air Force, kindly offered me the use of his quarters to host the luncheon. The luncheon was held on September 16 and was a complete success. I am enclosing a picture taken at that event. . . . I thought this photograph might be of interest . . . as evidence of the extreme interest which our colleagues in other air forces have, not only in the USAF itself but in your fine publication. I could not have selected a finer gift and my sincere thanks go to AFA for its superb assistance and support.

Maj. Edward L. (Ted) Warner III, and Maj. Fred C. Boli, the Assistant Air Attachés here in Moscow, along with Maj. David L. Miller and Capt. Matthew K. Ligocki, who have since rotated to other assignments, join me in sincere thanks for giving us a special day among our attaché colleagues.

Col. Charles W. Roades, USAF
Air Attaché
Defense Attaché Office
Embassy of the United States of America
Moscow, USSR

—PHOTO BY TSGT. MORRIS LARRY, USAF USDAO, MOSCOW

At a luncheon last fall celebrating USAF's thirtieth anniversary, members of the Moscow Air Attachés' Association discuss the September issue of AIR FORCE *Magazine. From left, Brig. Gen. Ake Lonnberg, Swedish Air Force; Col. Charles W. Roades, USAF; and Squadron Leader S. K. Panawat, Indian Air Force.*

Gentile's "Broken" Plane

I write in the hope that some readers may be able to help me. In association with the East Anglian Aviation Society and The Friends of the Eighth, I am engaged in tracking down a "legend."

On April 13, 1944, the ace of the 336th Fighter Squadron, 4th Fighter Group, Don Gentile, "broke" his P-51B 43-691 VF-T *Shangri-La* while in the circuit at Debden.

Over the years many rumors and stories have developed concerning the eventual fate of the aforementioned airframe. The most popular story is that the aircraft was buried locally. The hope is that someone can confirm whether or not this is true, and if true, give the location, more or less, of the aircraft. If we can find it, it is our intention to

Airmail

recover the P-51 and restore it to as near its original state as possible as a memorial to those who served in the fighter squadrons of the Eighth Air Force.

Sqdn. Leader R. E. Leach, RAF
Officers' Mess
RAF, Scampton
Lincoln, England

Eighth AF Photo Album

The *8th AF News* has announced that the *Eighth Air Force Photo Album* is in the prepublication stage. As soon as indications of sufficient support for the book are received, it will be released to the publishers. Plans are aimed at a mid-spring 1978 publishing date.

The book will contain more than 1,000 photographs (many never before published). Primary thrust of the book will be to picture life in the air and on the ground, people of all ranks (portraits are out), and all others who made a flying unit tick. Air Depots and Air-Sea Rescue operations will be included.

[illegible] for a descriptive brochure.

John H. Woolnough, Editor
8th AF News
P. O. Box 4738
Hollywood, Fla. 33023

Photos for Book

I am working on a book on the P-39 and P-63 and would like to borrow photos of these aircraft in Russian markings and photos of P-39s in North Africa and Italy.

Photos will be returned within two weeks after I receive them. Your help will be greatly appreciated.

E. F. Furler, Jr.
2831 Jarrard
Houston, Tex. 77005

Nose-Art Creators

I was in the Air Force in Foggia, Italy, in World War II, and would appreciate help in getting a listing of the names of artists and servicemen who created the art that was painted on our B-17 and B-24 bombers. My interest has been aroused by conversations of old veterans such as myself and photographs which appear from time to time in national magazines.

Would appreciate hearing from anyone with this information.

Roy E. McCoy
214—29th Ave.
San Mateo, Calif. 94403

Rescued Pilot

Recently I was visited by an elderly Chinese gentleman who was involved in the rescue of an American pilot during WW II. He is interested in contacting the pilot if he can be located.

The pilot, Lt. Robert Golbert, is believed to have been from Michigan. His aircraft was shot down near the village of Wai Chow, which is near the Hong Kong/China border. Lieutenant Golbert was wounded and was pursued by enemy forces. His rescue was effected by using a child to "break the ice," thus enabling friendly persons to communicate with him. Lieutenant Golbert told one of the Chinese who acted as interpreter to contact him if he ever came to the US.

Anyone knowing of Lieutenant Golbert's whereabouts contact

SSgt. Dan Altenes
USAF Recruiting Office
3730 Sepulveda Blvd.
Torrance, Calif. 90505
or
[illegible]
23206 Anza Ave.
Torrance, Calif. 90505

Sell or Trade

I am a collector of Air Force unit patches and am wondering if I may hear from any readers who are interested in either selling or trading current insignia.

Jon Letzkus
59 Dogwood Dr.
Clinton Hills
Triadelphia, W. Va. 26059

Insignia Collection

I am actively expanding my collection of unit insignia and would be very happy to receive patches from anyone who served in any USAAF or USAF organization from WW II to the present. I was a member of the 87th FIS during 1971–72, and would especially like to receive patches from anyone involved with this and any other ADCOM squadrons equipped with F-106 aircraft.

My collection will be displayed publicly and full credit will be given to each contributor.

David Freese
915 W. 4th St.
Cedar Falls, Iowa 50613

514th Bomb Squadron Members

I need to locate former Lt. Ralp Grace, USAAF, 514th Bomb Squad ron, 376th Bomb Group (H), or an other flying or headquarters per sonnel who saw service with thi unit in the Libyan Desert in 1943. am conducting a research projec which, when completed, will te the story of this fine unit's excellen contributions toward winning WW II in the sky.

Ralph L. Landry
7858 Graves Ave.
Rosemead, Calif. 9177

99th Bomb Group

I have been attempting to locat individuals who served with the 99t Bomb Group, Fifteenth Air Force during World War II. Thus far, o the 25,000 who served with the 99th I have located only twenty-five. M ultimate objective is to hold a re union. So all you other 99th BGer somewhere out there please get i touch with me.

Capt. Robert L. Wood, Jr.
USAF (Ret.)
605 North 5th Road
Arlington, Va. 22203

Childress Field

I need the help of Childress Arm [illegible] missioned an aerospace artist t paint a Beech AT-11 flying over Childress practice bombing target To assure the painting will be as au thentic as possible, I need photo graphs of Childress AAF-based AT 11s, of buildings and targets, and map of the bombing targets.

All photographs and material wi be promptly returned. Your assis tance will be appreciated.

W. G. Vogel
Class 45-1B
439 Windsor
Wichita, Kan. 6721

Walding Field Units

I would appreciate it if reader could help in locating informatio on USAAF units and members wh flew out of RAF Walding Field du ing WW II. A local history is bein prepared, and I would like to hea from anyone with information.

Steve Tatum
99 First Ave.
Springlands Estates, Sudbur
Suffolk, England

Scrapbook for the 490th

We here at the 490th Strategic Mis sile Squadron are in the process o

compiling a scrapbook of the past exploits of our predecessors in the 490th SMS and the 490th Bombardment Squadron. We would appreciate the donation of any memorabilia and anecdotes representative of the Squadron's glorious history. We feel these items would be invaluable in completing our scrapbook.

Anyone wishing to assist us should contact

Lt. Joe Baldwin
490th SMS
Malmstrom AFB, Mont. 59402
Phone: (406) 731-2936

Texas Airfield

Johnson Field, a United States Army Air Corps auxiliary field, was located adjacent to the Rio Grande in the Big Bend region of Texas. Operational from 1929 until 1943, this facility was used largely by personnel based at Kelly, Brooks, Dodd, and Randolph Fields.

The field was located on property owned by Elmo Johnson, a Big Bend rancher. Johnson and his wife, Ida, became favorites of the Air Corps personnel that visited Johnson Field. It has been reported that Mrs. Johnson's home cooking was one of the facility's main attractions.

I am writing a history of this unique facility and would like to correspond with anyone who has been to Johnson Field. Responses should be addressed to

Dr. Kenneth B. Ragsdale
Texas State Historical Association
2618 West 49½ St.
Austin, Tex. 78731

UNIT REUNIONS

th Air Force Tours

The traditional England tour of 8th AFers will be held July 3–9, 1978. Beginning in London, the tour will visit Cambridge, Duxford Airfield to see the 8th AF and Imperial War Museum exhibits, and the old WW II base in East Anglia, with our English friends as guides. A reunion banquet will be held Saturday, July 8, with our guides as guests. An add-on tour, July 10–24, will join other 8th AFers in Amsterdam to visit the Zuider Zee, the Rhine River, Koblenz, Heidelberg, Strasbourg, Zurich, Lucerne, Berne, and Paris. For details contact.

John H. Woolnough
Eighth Air Force Historical Society
Box 4738
Hollywood, Fla. 33023
Phone: (305) 961-1410

17th Bomb Group (M)

A reunion of the 17th Bomb Group (M) "The Daddy of Them All," is scheduled for Dayton, Ohio, July 20–23, 1978. Includes the 34th, 37th, 95th, and 432d Bomb Squadrons. All former members are urged to get in touch at once.

Ken Earl
1334 S. Pioneer Way
Moses Lake, Wash. 98837
Phone: (509) 765-1705

31st Fighter Group

A fall '78 reunion is being planned for former officers of the 31st Fighter Group. Current addresses of former officers and recommendations as to time and place urgently needed. Contact

Edwin Dalrymple
P. O. Box 4984
Austin, Tex. 78765
Phone: (512) 345-1479

Class 41-A

Some members of Flying Cadet Class 41-A are seriously considering a class reunion in San Antonio, Tex., during the early part of 1978. We need addresses and responses. Interested members please contact

Col. Robert F. Stafford, USAF (Ret.)
123 Seminary Dr.
Mill Valley, Calif. 94941
Phone: (415) 461-2020

49th Fighter Group

Members of the 49th Fighter Group, 7th, 8th, 9th Squadrons, and Headquarters, are holding a reunion in El Paso, Tex., and Holloman AFB, July 13–15, 1978. Please contact

Jack Fenimore
Rt. 5, Box 81
Evansville, Ind. 47630

65th Fighter Squadron

The 65th Fighter Squadron, 57th Fighter Group, 9th and 15th AFs, Africa and Italy, is planning a reunion for July 27–30, 1978, in Denver, Colo. (The 65th FS is the unit that served as model for the comic strip "Terry and the Pirates.") For details, former members are asked to send a stamped, self-addressed envelope to

E. H. Linder
Fox-Fire Apt. L6
Sulphur Springs Rd.
Greenville, S. C. 29611

91st Bomb Group (H)

The 91st Bomb Group (H) and support units, Station 121, Bassingbourn, England (1942–45), will return there "one more time" during May 14–28, 1978. Also, our national reunion will be held in Memphis, Tenn., July 19–22. For complete details, write

Bob Gerstemeier
930 Woodlawn Dr.
Lansdale, Pa. 19446

355th Fighter Group

The 355th Fighter Group, 8th AF, England, will hold their reunion in Orlando, Fla., June 22–25. Interested persons are asked to send a stamped, self-addressed envelope to

Gordon H. Hunsberger
75 Conger Rd.
Gilbertsville, Pa. 19525

369th Fighter Sqdn.

The 369th Fighter Squadron Association, 359th Fighter Group, WW II, AAF Station 133, 557 England, and supporting units —448th Air Service Group, 824th Air Engineering Squadron, 648th Air Materiel Squadron, and 3d Gunnery, Tow Target Flight—are holding a reunion at the Ramada Inn, 330 W. First St., Dayton, Ohio, August 10–12, 1978. Contact

Anthony Chardella
105 Mohawk Trail Dr.
Pittsburgh, Pa. 15235

401st Bomb Group (H)

The 401st Bomb Group (H), stationed at Deenethorpe, England, during WW II, will hold their reunion in St. Louis, Mo., on August 6–8. Please contact

Ralph "Rainbow" Trout
P. O. Box 22044
Tampa, Fla. 33622

434th Bomb Sqdn.

The 33d annual reunion of the 434th Bomb Squadron, 12th Bomb Group, WW II, will be held at the Stan Musial and Biggies St. Louis Hilton Inn, in St. Louis, Mo., June 28–July 1, 1978. Contact

W. Bruce Summers
916 Easy St.
Palmyra, Mo. 63461

456th Bomb Group

The 456th Bomb Group, 15th AF, formerly stationed in Stornara, Italy, is holding its 3d postwar reunion in Denver, Colo., June 15–18, 1978. All former members are asked to send a stamped, self-addressed envelope to

D. E. Schippers
16205 W. Rogers Dr.
New Berlin, Wis. 53151

466th Bomb Group

A 1978 update of the register of former members of the 466th Bomb Group, 8th AF, is planned. Those who have moved or who have not been on a recent 466th Register are asked to send their current address to

John H. Woolnough
466th Register
Box 4738
Hollywood, Fla. 33023

4751st Bomarc Wing/Test Staff

An April 27–30, 1978, reunion of the 4751st Bomarc Missile Wing/Test Staff will be held at Fort Walton Beach, Fla. Contact

Brig. Gen. James S. Creedon
8247 Taunton Pl.
Springfield, Va. 22152
or
Col. Jack Melcher
390 Gardner Dr.
Fort Walton Beach, Fla. 32548

SCIENCE/SCOPE

A new short-range missile seeker technology -- based on an M-band frequency of 94 GHz -- has been shown to penetrate adverse weather better than electro-optical or infrared seekers. It also delivers better resolution than does conventional radar. A prototype 94 GHz seeker, developed by Hughes under joint Air Force-Navy funding, has undergone laboratory and tower testing in active and passive modes against tanks and trucks. Helicopter captive flight tests have been completed at the Naval Weapons Center, China Lake, California.

Results indicate that the M-band provides a better match of resolution and penetrating characteristics for use in fog, rain, heavy clouds, battlefield smoke or dust than any other portion of the spectrum. Though still developmental, the 94 GHz seeker is projected as a small, relatively inexpensive, terminal guidance unit for short-range missiles, guided projectiles or longer range weapons equipped with a mid-course guidance system.

The six NATO-nation industrial firms, Hughes among them, that co-constructed NADGE, now in operation as "the backbone of the NATO Alliance's European air defense system", were paid tribute by the Chairman of the NATO Council's NADGE Policy Board in its closing session. Calling it "the largest single commonly-funded electronic project implemented so far by NATO", the Chairman termed the success of the system "remarkable" in that it had been achieved by a common effort of nine host nations and that "individual interests and national desires had been subordinated for the benefit of the whole Alliance".

NADGE (NATO Air Defense Ground Environment) has created an integrated semi-[illegible] network stretching from the far north of Norway to the eastern borders of Turkey, enabling NATO to react immediately to a surprise attack.

LSI packaging cuts size of new military backpack radio by one-third and its weight in half. Only 14 pounds, the AN/PRC-104 is the nucleus of a new family of high-frequency radio sets and is in full production at Hughes after exhaustive field, laboratory and environmental testing. Under contract from the U.S. Naval Electronic Systems Command, an initial order of several thousand radios will be built, including receiver-transmitters and ancillary equipment used in 400 Watt vehicular sets and 20 Watt backpack sets.

The modularly-constructed, 280,000 channel unit has been accepted for use by the U.S. Marine Corps, U.S. Air Force, U.S. Navy and Sweden's National Defense Forces. The U.S. Army is also testing prototypes as possible replacements for their AN/PRC-74 Manpack radios, previously developed by Hughes.

An off-the-shelf compact digital tracker for airborne targets is available now from Hughes. Only 45 pounds and shelf- or rack-mounted, the electro-optical tracker is employable in a TV tracking system which includes a TV camera, gimbal platform and servo amplifier.

The tracker features automatic acquisition of valid targets within the TV field of view and automatic gate-sizing to conform with target dimensions. Its digital and analog processors, optimized for airborne targets, generate the azimuth and elevation air signals that drive the gimbal servo and keep the TV camera pointed toward the tracked object.

Creating a new world with electronics

HUGHES

HUGHES AIRCRAFT COMPANY

Aerospace World News, Views & Comments

By William P. Schlitz, ASSISTANT MANAGING EDITOR

Above, short-range Roland missile system designed to down ground-hugging aircraft, mounted on M-109R tracked vehicle. Right, cutaway view of missile.

Washington, D. C., Dec. 7

★ In November, the US Army took possession of its first Roland, the European-designed short-range air defense missile system built to intercept enemy aircraft attacking at low levels.

Surface-to-air Roland, an all-weather, day-and-night system, is the first major European-designed weapon tapped for production in the US and deployment with the US Army.

Supported by more than a hundred subcontractors, prime contractor Hughes Aircraft Co., Culver City, Calif., and major contractor Boeing Aerospace Co., Seattle, Wash., are building Roland under license from Euromissile, a joint venture of West Germany's Messerschmitt-Bölkow-Blohm and France's SNI Aérospatiale. (About 100 Rolands will be produced over the next year for testing, before full production is initiated, officials said.)

Roland has twin missile launcher arms for its ten eight-foot-long (2.4 m) missiles, which can score hits at ranges up to 3.7 miles (6 km).

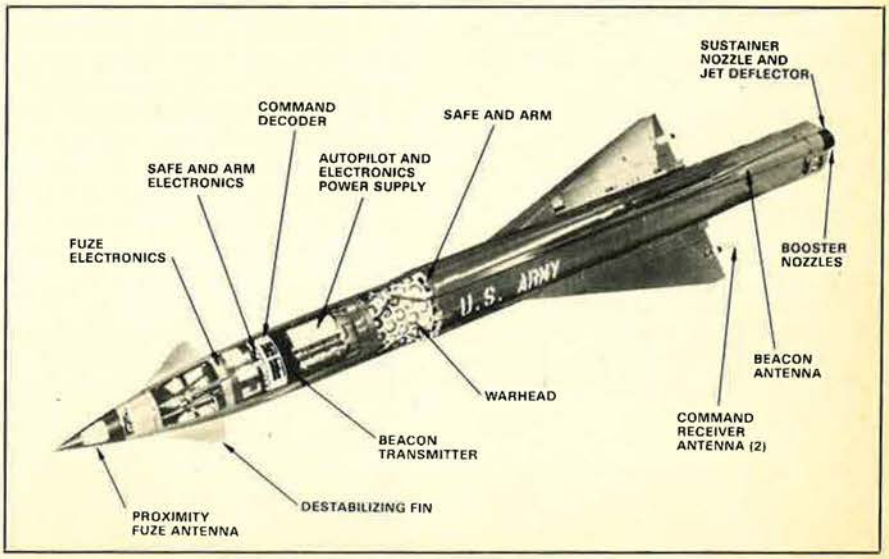
The Roland fire unit, which a two-man crew can operate, contains all the hardware, radars, and computers needed to acquire and identify targets, transport and fire the missiles, and guide them to targets.

One big plus for the Army's Roland is its commonality with its European counterparts: Of some 600 field-replaceable parts, 550 are interchangeable.

The US Roland is to be tested at White Sands Missile Range, N. M., Aberdeen Proving Ground, Md., and in Alaska. Joint test firings are also planned for Europe.

In Europe, West Germany plans to acquire 140 Rolands for her Army, with the first entering service in 1979. In 1983, the German Navy and Air Force will begin to receive Roland—for a combined acquisition of another 140. France is expected to buy about 250 Roland systems for her Army.

★ As agreed to early in 1977, officials from NASA and the USSR's Academy of Sciences in mid-Novem-



Aerospace World

ber held discussions about further cooperative ventures in space.

The exploratory talks—conducted in Moscow—were aimed at defining areas that may provide the nucleus for a joint program in the 1980s.

While subject to the approval of the respective governments, such a program might benefit from the utilization of the Space Shuttle, with its flexible delivery capability and large capacity, and the Soviet Salyut space station, with its ability for long-duration orbital missions.

In a related matter, officials in late November also participated in the eighth annual meeting of the NASA-Soviet Space Biology and Medicine Working Group. The formal meeting, at NASA's Wallops Flight Center, Wallops Island, Va., was preceded by a joint workshop on simulated weightlessness.

The meeting focused on the Cosmos 936 flight, on which US experiments were flown; biomedical results of the Salyut 5/Soyuz 24 mission; a briefing on a Spacelab Missions Demonstration Test; and a discussion on forecasting man's health in weightlessness and a research approach to studying space motion sickness.

★ Within minutes of each other on November 22, French and British supersonic Concorde airliners landed at Kennedy International Airport —thereby inaugurating regularly scheduled SST service between Paris/London and New York (*also see p. 21*).

With the opening of this lucrative market, the aircrafts' sponsors see hope brightening for the SST program's financial future.

Also under way at Kennedy is a sixteen-month trial period during which the FAA will monitor noise, sonic-boom effects, and community response to the aircraft. (Results of a similar trial that began in May 1976 with the initiation of SST service at Dulles International Airport, near Washington, D. C., are currently being evaluated. The goal is a set of guidelines for operation of SSTs over the continental US.)

One-way SST fare between New York and London is $793, that to Paris $820—both rates about twenty percent higher than first-class fare on subsonic airliners.

The runways of Lambert-St. Louis International Airport as seen through the twin tails of an F-15 climbing—straight up—in a "Viking departure" from the nearby McDonnell Douglas production facility.

In a related matter, Braniff International, thus far the only US carrier to express interest in SST operations, has proposed it establish subsonic service between Dallas-Fort Worth International Airport and Washington's Dulles, with British or French crews then taking the aircraft on to Europe. A governmental decision is pending.

As for the Soviet "Concordski," as of this writing no passenger flights have taken place between Moscow and Alma-Ata since the inaugural flight on November 2, with several planned flights having been "postponed."

★ Spokesmen for the nation's aerospace industry have voiced concern that the Freedom of Information Act, as now constituted, could allow overseas competitors, and even potential enemies, access to confidential information submitted to the US government by American companies.

In alerting government officials to the danger—which could be either military or economic—the Aerospace Industries Association said that as the statute now stands "a simple FOI [Freedom of Information] request can secure for a foreign requester (either directly or through an intermediary) technical information which the manufacturer owning the information cannot disclose without an export license issued by the State Department . . ." under provisions of the International Traffic in Arms Regulations.

AIA believes that "foreign access to technical data can have an adverse impact on security, as recognized by ITAR, but it can also have a severe economic impact since it can undermine the technical advantage" that US industry enjoys in the world market.

AIA is calling for a legislative distinction to be made between government-owned data and what US firms provide the goverment in confidence (such as technical information needed by the FAA in certifying a new aircraft, for example).

In any case, AIA believes, US companies should be informed before data is disseminated so that legal proceedings can be initiated to protect proprietary interests.

★ A GBU-15 Planar Wing Weapon —one of a family of air-to-surface glide bombs currently under development for USAF—scored what was termed a "lethal" hit during its recent first test flight.

The twelve-foot-long (3.7 m) weapon was guided to its target at the White Sands Missile Range in New Mexico after release from a B-52

Air-to-surface ordnance is becoming more sophisticated all the time and the Planar Wing Weapon is no exception. After launch, the glide bomb's eleven-foot (3.4 m) wing is extended, to increase range and to enable the launching aircraft to stand off at a safe distance while accurately guiding the weapon to its target.

A television unit in the weapon's nose allows the weapon systems operator in the launch aircraft to visually acquire the target on a cockpit monitor and switch to the weapon's TV seeker for accurate terminal guidance.

Also intrinsic to the weapon is a digital computer that acts as an autopilot in converting sensor and guidance commands into steering signals. The computer also performs many on-board logic functions during flight.

The glide bomb, being system-integrated by Hughes Aircraft Co., is a weapon that can be given a variety of missions by changing such modules as guidance and warhead.

★ Air Force Logistics Command re-

CLAUDE WITZE
Senior Editor,
AIR FORCE Magazine

Born October 26, 1909
Died December 7, 1977

The familiar byline—"By Claude Witze"—will appear no longer in the pages of AIR FORCE Magazine. After an illness of several months, Claude died at his home in suburban Bethesda, Md., on December 7, 1977. He was sixty-eight. Readers of this magazine will miss his column, "Airpower in the News," which has appeared monthly since he joined our staff in January 1958. His coverage of military affairs, in the Pentagon, on Capitol Hill, in Europe, and in Southeast Asia was extensive, knowledgeable, trenchant to the point of causticity, always written with clarity and brevity. Over the past few years he had spiced the column with the extremely popular department "The Wayward Press," in which he frequently took issue with the way his journalistic peers handled military subjects. We will have more to say next month about Claude and the legacy he leaves behind.—J.F.L.

cently established an AFLC Liaison Office at Hq. USAFE, Ramstein AB, Germany.

Primary mission of the new office is to ensure that all phases of war planning for the European theater "include adequate logistics considerations."

Also, the office will oversee contract work in Western Europe, as well as recommend contractors for the repair of Air Force equipment. The liaison group will also be responsible for testing new USAFE logistics programs and undertaking certain engineering activities now performed by others.

The office is studying the requirement for a larger AFLC presence in Europe.

★ The EF-111A, USAF's newest and most sophisticated electronic warfare aircraft *(see August 1977 cover story),* is in the midst of a test flight program to prove its operational capability.

The first segment of the program called for a twenty-five-mission,

NASA Revamps Its Headquarters Management Structure

In an effort to "strengthen organization and improve effectiveness," NASA in November revamped its management structure.

A number of Headquarters posts were done away with and personnel cut, to simplify the staff organization and to "reduce the number of staff offices reporting directly" to the NASA Administrator, Dr. Robert A. Frosch. (While the NASA Headquarters structure is now set, at this writing many of the posts had yet to be filled.)

In summary, the reorganization:

- Abolished the post of Assistant Administrator for Planning and Program Integration and reassigned its duties to the Chief Scientist and Associate Administrator for Space and Terrestrial Applications. (The Chief Scientist is the new title of the Associate Administrator. Besides keeping the Administrator abreast of NASA programs from the standpoint of scientific objectives, the CS provides "direct interface with various scientific advisory committees.")
- Abolished the position of Assistant Administrator for Institutional Management and reassigned its duties to the Associate Administrator for Management Operations (except for Headquarters procurement, now under aegis of the Director of Procurement).
- Abolished the post of Assistant Administrator for Industry Affairs and Technology Utilization and reallocated its duties among various other offices.
- Did away with the position of Assistant Administrator for Energy Programs and gave its responsibilities to the Associate Administrator for Aeronautics and Space Technology.
- Retitled the Assistant Administrator for Personnel Programs as Director of Personnel Programs with duties restructured under the Associate Administrator for Management Operations.
- Abolished the post of Assistant Administrator for DoD and Interagency Affairs, reassigning responsibilities to the Associate Administrator for External Relations.
- Abolished the Office of Systems Management and placed its functions under the Associate Administrator for Management Operations.
- Abolished the Office of Program Assurance, reassigning its duties to the Chief Engineer pending further study.

Thus, NASA's Headquarters operations have been realigned into three functional areas:

- The Administrator's Office (for general management of the space agency's manifold activities).
- The Chief Scientist, Chief Engineer, and five program offices (for program planning, management, and review).
- Eight staff offices (to provide program, staff, and functional support).

In the first functional area, the Office of the Administrator, are four top officials: Deputy Administrator, the Administrator's right hand; Assistant to the Deputy Administrator, overall coordinator of staff activities; Executive Officer, manager of Administrator's day-to-day activities; Assistant for Special Projects, Administrator's watchdog for specialized programs.

Heads of all program offices, field centers, and National Space Technology Labs are to report directly to the Administrator.

The second functional area, the Program Planning, Management, and Review Office, includes: The Chief Scientist (formerly Associate Administrator, see above); the Chief Engineer, responsible for the technical execution of all agency programs, including reliability and quality assurance.

In this office are five Associate Administrators responsible for the following: Aeronautics and Space Technology; Space Sciences; Space and Terrestrial Applications; Space Transportation Systems; Space Tracking and Data Systems.

The third functional area includes all support activities at Headquarters and throughout the agency and will be the responsibility of the eight staff offices: General Counsel, Comptroller, Associate Administrator for Management Operations, Associate Administrator for External Relations, Director of Equal Opportunity, Director of Procurement, Director of Inspections and Security, and Director of Audit.

Aerospace World

two-month stint at the electromagnetic test ranges at Eglin AFB, Fla., home of AFSC's Armament Development and Test Center.

Following the Eglin tour, the aircraft moves on to Mountain Home, Idaho, from which it will fly about forty-five test missions over the Nellis AFB, Nev., electronic warfare ranges.

Under evaluation are the tactical jamming system's three primary missions:

- Standoff jamming, in which the aircraft operates just outside the battle area and creates an electronic shield to cover operations of friendly strike aircraft.
- Close air support, in which jamming operations are conducted in close proximity to a high-threat area but just beyond surface-to-air missile range, helping to confuse enemy missiles and antiaircraft acquisition radar during attack and recovery of the strike force.
- During penetration, [illegible] emy detection equipment is jammed while the strike force is being escorted on missions behind enemy lines.

In addition to its basic jamming systems, the EF-111A is also equipped with an electronic countermeasures self-protection and terminal threat-warning system.

★ With the family of cruise missiles very much in the news these days, USAF has begun to look into the nation's requirements for such unmanned weaponry in the 1990s and beyond.

Under USAF Aeronautical Systems Division contracts, both Boeing Aerospace Co. and McDonnell Douglas Corp. are delving into potential missions for advanced cruise missiles. Each will then develop weapon concepts based on the technologies that should be available at that time.

Specifically, the studies are to be concerned with penetrating and standoff missiles in the subsonic, supersonic, and hypersonic ranges, officials said.

★ When its order for six C-130H Hercules is filled, Sudan will become the forty-third nation to operate the famous propjet transport.

According to Sudan, when the planes are delivered in 1978 they'll be used for economic development and military logistics.

The "H" version of the Lockheed-built aircraft can airlift 45,000 pounds (20,412 kg) or ninety-two passengers a distance of more than 2,000 miles (3,219 km).

The Hercules has been in production for the past two decades, with close to 1,500 thus far delivered. This worldwide fleet has accumulated an estimated 12,000,000 hours of flying time.

★ A major aeronautical history collection, made up of two of the world's biggest and best such collections, is now at hand at the University of Texas at Dallas.

The vast new collection is made up of the History of Aviation Collection, formerly at the University of Texas at Austin, and the Admiral Charles Rosendahl Collection of lighter-than-air aviation, Lakehurst, N. J.

The History of Aviation Collection was begun in 1963 under the sponsorship of George Haddaway of Dallas, editor and publisher of *Flight* Magazine for forty-three years.

The Rosendahl Collection was gathered by one of the principal fathers of lighter-than-air aviation who was senior surviving officer of the dirigible USS *Shenandoah*, which crashed in a storm in 1925.

USAF is purchasing fifty-nine of these huge crash/fire/rescue vehicles at a cost of $25 million. For details on capabilities, see item on p. 17.

Index to Advertisers

Inquiries may be sent to the Curator, History of Aviation Collection, Eugene McDermott Library, University of Texas at Dallas, P. O. Box 643, Richardson, Tex. 75080.

The Air Force's P-15 is powered by two 430-hp diesel engines—one each in front and rear.

It is forty-five feet (13.7 m) long, ten feet (three m) wide, and fourteen feet (4.3 m) high.

Its eight man-high tires contain enough rubber to produce 232 standard auto tires.

Fully loaded, it weighs 132,500 pounds (about 60,000 kg).

No, the P-15 is not some radical new aircraft but USAF's behemoth new crash/fire/rescue vehicle—the largest of its kind in the world.

With the first units delivered last year, USAF plans a total buy of fifty-nine of the fire-fighting vehicles at a cost of $25 million.

At four times the capacity of fire trucks currently in the Air Force inventory, the P-15 can:

- Accelerate from a standing start to fifty mph in as little as thirty-five seconds.
- Produce foam two feet deep on a basketball-court-size area in two and a half minutes.

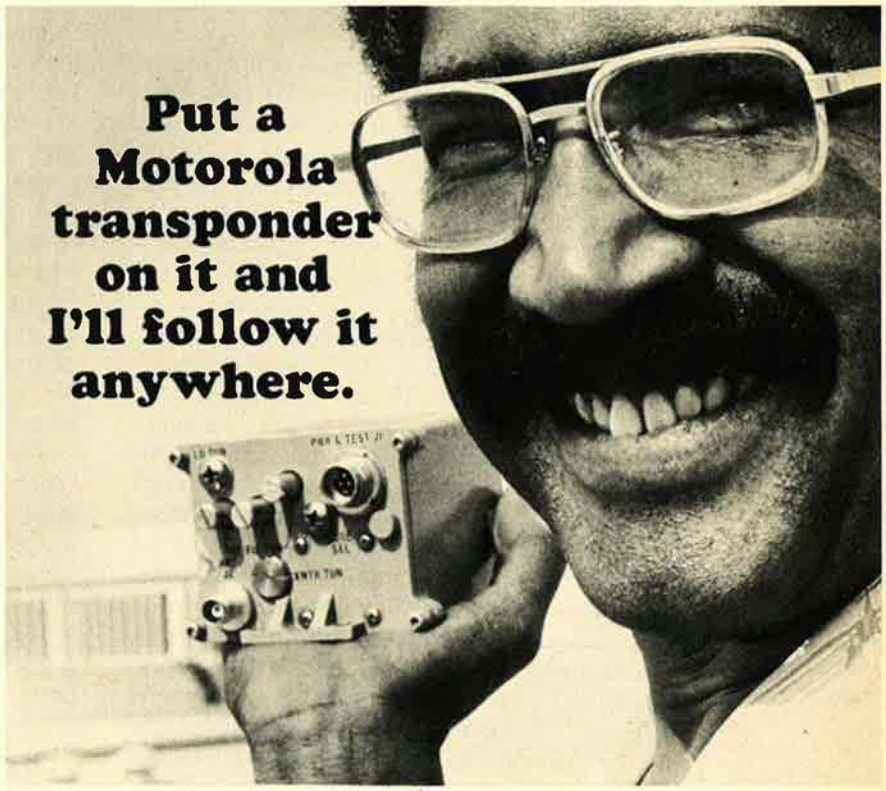
The truck, built by Oshkosh Truck Corp., Oshkosh, Wis., is also being sold to industry, municipalities, and abroad.

NEWS NOTES—Gen. William J. Evans, a key man in developing defense space systems while head of AFSC, has been awarded the **General Thomas D. White Space Trophy** for 1976. The award is presented annually to an Air Force member, military or civilian, for the most significant contribution to US aerospace.

Olympic gold medalist **USAF Capt. Micki King** is to be inducted into the **International Swimming Hall of Fame** next spring in Fort Lauderdale, Fla. The diving champion is currently earning a postgraduate degree at Arizona State under the AFIT Civilian Institutions program.

Two American pilots—**Philander Paxton III** and **Jack Cink** of Washington, D. C., and Santa Barbara, Calif., respectively—in early November **cut more than eighteen hours** off the Australian-set **around-the-world speed record** for piston-powered aircraft and got their Aero Commander 601P back to starting-point Los Angeles IA in 104 hours 5 minutes. ■

Flanked by Air Force Secretary John C. Stetson and Air Force Chief of Staff Gen. David C. Jones, Gen. William J. Evans, now USAFE Commander in Chief, holds replica of recently awarded Gen. Thomas D. White Space Trophy. See note.



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JANE'S AEROSPACE REVIEW 1977/78

Here, for the seventh consecutive year, is a comprehensive report on the worldwide aerospace scene—military, commercial, and general—prepared by the foremost authority on aviation products of the nearly forty aircraft manufacturing nations. Of particular interest to AIR FORCE Magazine readers is the author's assessment of advancing Soviet technology, reflected in new military and commercial aircraft.

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

THE MOST significant aircraft of the present time are some we have not yet seen, some we may never see, and a few that we are told we do not need for one reason or another. If such comments seem vague and journalistic, the reader can begin to test their validity by turning to the report of AFA's 1977 National Convention in last November's AIR FORCE Magazine.

Speaking at the dinner honoring the twelve Outstanding Airmen of 1977, Gen. William V. McBride, USAF Vice Chief of Staff, said: "We reaffirm our belief in the need for a manned strategic penetrating system that can operate in conjunction with air-breathing standoff cruise missiles." The same view was expressed by USAF Chief of Staff Gen. David C. Jones, and the report added that "these and other thoughts of AFA's 1977–78 Statement of Policy, adopted unanimously by the delegates, found strong echoes in various Convention proceedings." They are echoed just as strongly by America's NATO allies on the European side of the Atlantic. It seems to most of those in Europe who are concerned that, if the Soviet Air Force has such an aircraft as the Tu-26 Backfire, then NATO also needs a comparable bomber if the term "balance of power" is to have any meaning.

After the US had spent vast sums of money developing just such an aircraft, the B-1, was logical to expect DoD to find the fun required for, perhaps, one hundred bombers this type. Yet the President decided in mi 1977 that the B-1 should not go into produ tion. What kind of manned str tegic penetrating system c General Jones and General M Bride expect after this?

B-52s are to be patched, p ished, and preserved for anoth decade or two as cruise missile carrie All in Congress who support such measur should be compelled to drive twenty-yea old automobiles, *and* be taken for a lo flight in a B-52, through severe turbulenc at very low altitude. Those who survived t experience would be qualified to judge wheth or not the B-52 is a satisfactory strategic pen trating system for the '80s.

"Jane's Supplement" in last month's A FORCE Magazine included brief details of t FB-111H, which is proposed as a gap-fill to make the loss of the B-1 less noticeabl But even if the FB-111A can be stretche strengthened, and re-engined safely with two the B-1's turbofans, it will, at a cost of $3,3 million for converting sixty-five FB-111As FB-111Hs, never be a B-1.

There is equally restrained joy in Euro over President Carter's massive hopes for t cruise missile. Back in the 1940s, in a far fr

fenses had little difficulty in coping with Ad Hitler's V-1 flying bombs—the only cru missiles ever used operationally in large nu bers.

Can we be confident that modern cruise m siles, flying at subsonic speed, lacking the d crimination of human control, and short effective countermeasures at this stage of th evolution, would prove immensely more su cessful? However great or small the threat su weapons might impose, now or in the futu the vital ingredient of a deterrent policy variety in potential means of attack.

The Soviet Union has no illusions about th When discussing further East/West strate arms limitations, it fought uncompromisin to restrict US deployment of both the B-1 a the cruise missile. Its leaders must have be surprised beyond belief when the President d posed of the B-1 without asking any So concession in return. One must, perhaps, b European, living within range of Backfire a the Sukhoi Su-19 Fencer, to feel apprehens when such formidable aircraft are ranged s by side with some 1,400 ICBMs, 600 IRB MRBMs, 950 submarine-launched ballis missiles, and 200 older long-range bombe each capable of annihilating a city in a seco of time.

It may seem that Europeans expect too mu

of the US taxpayers when discussing the growng imbalance of power in favor of the Warsaw Pact nations; but Britain, in particular, cannot be accused of expecting charity. UK defense expenditure accounted for 5.1 percent of its gross domestic product (GDP) during the worst period of the nation's economic depression, compared with 5.9 percent for the US, 3.8 percent for France, and 4.2 percent for West Germany. In terms of the proportion of defense expenditure devoted to procurement of new equipment, Britain was (and remains) first among all the NATO allies, at nineteen percent, compared with 17.5 percent for the US.

Unfortunately, percentages of GDP mean nothing if the total NATO end product is still inadequate, and this is the point at which we begin to study weapons that *do* exist in quantity but have not been seen publicly.

The USSR: Quantity Plus Quality

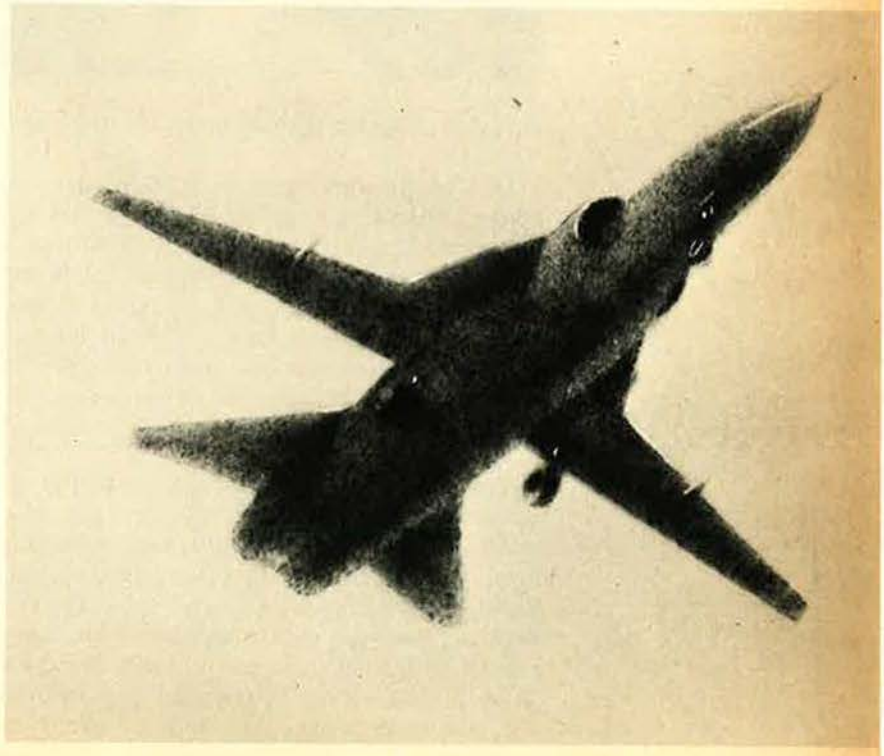
There were high hopes that the Soviet Union might stage one of its old-style Aviation Day flypasts over Moscow in July 1977, to mark the sixtieth anniversary of the October Revolution. The fortieth anniversary in 1957 produced what were then the world's largest helicopter—the Mi-6—and the world's largest and heaviest airliner—the Tu-114—as well as the first-ever earth-orbiting spacecraft, Sputnik 1.

Ten years later, in 1967, the greatest of a long series of spectacular Aviation Day displays was staged at Moscow's Domodedovo airport to celebrate the fiftieth anniversary of the Revolution. For the first time there were glimpses of Soviet VTOL, STOL, and variable-geometry aircraft, all based on, or potentially, military types. Year by year since then Western observers have hoped for an Aviation Day update. None has come; but it seemed inconceivable that the Soviet Union, with its love of the dramatic, would let the sixtieth anniversary pass without demonstrating the prowess of its aerospace design teams.

Aviation Day comes, traditionally, in July. Just one month earlier President Carter had made his B-1 decision, so reminiscent of UK Defence Minister Duncan Sandys who, twenty years ago, maintained that manned strategic bombers and interceptors belonged to a bygone era. Why should the Soviet leaders risk making the President change his mind, by providing visible proof that they hold very different views?

It is interesting to conjecture what might have taken part in the display, had it occurred. The spearhead might have been anything from forty to one hundred missile-armed Backfire supersonic bombers, a similar number of Su-19 Fencer long-range attack aircraft, and many hundreds of MiG-23/27 Floggers and Sukhoi Su-17 Fitters—all with variable-geometry wings. Midstream might have come sufficient new-model MiG-21 Fishbeds to darken the sky, ominous formations of missile-armed Tu-16 Badger, Tu-22 Blinder, and Tu-95 Bear maritime reconnaissance bombers, a huge assault force of Mi-24 Hind helicopters, squadrons of Il-76 Candid turbofan transports packed with paratroops, a top cover of Su-15 Flagon all-weather fighters and MiG-25 Foxbats (the latter the fastest combat aircraft in the world), and a rear guard of types never revealed before, passing so quickly, and in such abundance, that brains seeking to retain myriad details and impressions became saturated and confused.

Far more important than mere numbers are the quality and effectiveness of the latest aircraft. Fighters and bombers are fitted with automatic navigation and attack systems, laser rangefinders and marked target seekers, ECM, and other advanced equipment that had no place in the cruder Soviet combat aircraft of earlier generations. Fencer is reckoned to have five times the combat radius, carrying five times the weapon load, of its immediate predecessor. The Mi-24 helicopter has evolved into two complementary variants, one carrying a squad of assault troops in a heavily armored cabin, while the other bristles with fire-and-forget antitank missiles, rockets, bombs, and a four-barrel Gatling gun to keep down the heads of any opposition in the drop-zone. It is, however, the newest types of aircraft, which would have formed the rear guard of any Domodedovo-style display, that illustrate most clearly the capability of the men who have succeeded Mikoyan, Sukhoi, Ilyushin, Andrei Tupolev, Mil, and Kamov as leaders of the Soviet design



The only photograph of the Soviet Su-19 Fencer yet released in the West recalls a time when the Russians allegedly built their airplanes blurred.

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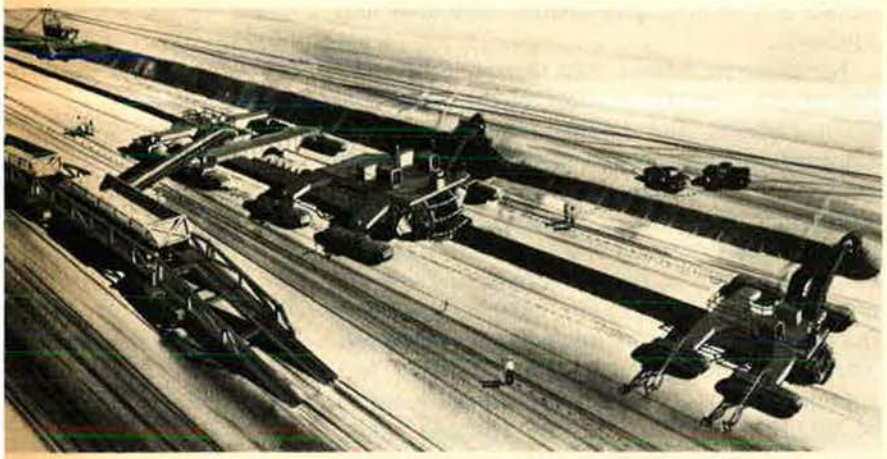

Above, an artist's concept of how buried trenches for the MX missile might be constructed, and, right, erected for firing from its trench.

bureaus, alongside the still-active Antonov and Yakovlev.

One of the new types is a counterpart to USAF's Fairchild Republic A-10A, in the tradition of Russia's wartime Il-2 Shturmovik tank-buster. Described as a relatively slow and low-flying armored attacker, jet-powered, and able to carry a very heavy external load of conventional air-to-surface weapons and guided missiles, it can be expected to have a multi-barrel gun, and is reported to be a product of the Sukhoi design team.

The long-expected air-superiority fighter replacement for the MiG-21 has emerged as a small and lightweight, highly maneuverable fighter in the class of the General Dynamics F-16 and McDonnell Douglas F-18 Hornet. Several prototypes were under test in the summer of 1977, but description of the type as a "mini-Foxbat" with two engines, a twin-fin tail unit, and wings like those of the F-15 should be regarded as highly provisiona Power/weight ratio is said to be better tha 1:1. The aim, clearly, must be to provide defense against cruise missiles and low-flyin attack aircraft in the class of the Tornado an FB-111, by employing a combination of im proved AWACS, lookdown radar, and snap down air-to-air missiles. Reportedly a produ of the MiG bureau, this aircraft could probabl be in service by the end of the present decad

Further away in terms of potential deplo ment is a new strategic bomber that will, i evitably, be regarded as the Soviet equivale of the B-1. Similar to Backfire in overall siz and weight, the prototype is said to be a mil tary counterpart of the Tu-144 superson transport. It is, however, a tandem delta of th Viggen type, with nonretractable canard su faces, and should not be confused with th earlier, larger, tandem-delta bomber that wa reported in the 1974–75 *Jane's*.

Clearly, there is no lessening of momentu in developing new combat aircraft in the Sovi Union, despite the immense effort that has bee required to update that nation's ICBM forc The West cannot afford to ignore this, or fe that tactical airpower is losing its importanc in view of new and very different weapons tha are approaching deployment or under develop ment.

New Technology Weapons

Nobody doubts that after, perhaps, one mo generation of combat aircraft, the major pow ers will be concerned primarily with new technology weapons. Laser devices, despi their all-weather limitations, point the way charged-particle weapons reminiscent of th "death rays" of science fiction, which may we eliminate combat aircraft from the sky an tanks from the battlefield. And already th Soviet Union has demonstrated repeatedly i ability to destroy satellites, should it be to i advantage to do so.

Even submarines face an unpromisin future, despite their inherent ability to igno developments in surface weapons. Their cu rent, little publicized, capability of commun cating with satellites while submerged threate to drive surface fleets from the oceans. Inste of needing aircraft or helicopters to provi targeting data or midcourse guidance, su marines can use satellites to locate and tra their surface targets, and then attack them w short-range ballistic missiles, launched fr under water.

This appears to give submarines comma of the seas; but, if they can communicate w satellites, it may be only a matter of time b fore the submarines themselves can be locat and tracked by reconnaissance satellites, wh ever they attempt to hide in the deep waters the globe. Their vulnerability will then

greater than that of a landbased ICBM, which an offset with a hardened silo the fact that its xed location is pinpointed on the "other ide's" target maps.

Farsightedly, the US is studying the use of ong, buried trenches through which its next-eneration MX ICBMs might travel on launch-rs, to avoid the dangers of emplacement in ermanent, fixed locations.

Such developments suggest that the combat eroplane may have ceased to have any value y the end of the century in which it was con-

the pioneer simply sets a standard against which its improved successors can be judged. At least none of them is likely to represent a greater technological achievement than this Franco-British SST, development of which proved so outstandingly trouble-free.

Throughout its first full year of scheduled passenger service, Concorde did all that was expected of it, not least in contributing large operating deficits to the balance sheets of British Airways and Air France. This was inevitable so long as it was denied access to airports

The Tu-144, Russia's "Concordski," entered scheduled passenger service on November 1, 1977, flying between Moscow and Alma-Ata.

eived, except for local squabbles between rces that cannot afford the new-style weap-ns. It is to be hoped that the SALT negotia-ons between East and West, not forgetting hina, will have laid the foundations for a last-g peace long before that time comes. What-ver the merits of the enhanced radiation, or o-called neutron, bomb (*see November '77* IR FORCE *Magazine*), it offers another good eason why World War III is unthinkable, as oes Russia's B-gas, which swats men like flies orayed with DDT, by destroying their nervous stems.

he Commercial Scene

The most significant development in commer-al aviation during the past year is that the en-ronmentalists of New York finally lost their ttle to keep the Concorde out of JFK Air-rt. Having done so, they soon discovered, e their neighbors around Washington's lles Airport, that the beast was not so fear-me as they had been led to believe. So, at st, the first airliner to offer passengers the nefits of Mach 2 transportation was allowed operate on the route for which it was pri-arily intended.

Nobody pretends that Concorde is quiet; but like JFK. Future possibilities were indicated by the fact that British Concordes logged a ninety-three percent average passenger load factor in their first eight months of operation between London and Washington.

Singapore Airlines has become the first airline, after British Airways and Air France, to plan for Concorde operation, with a shared aircraft. If this bold move becomes a precedent for other operators, the decision to suspend Concorde production after completion of the sixteenth aircraft, in 1978, could yet be overturned.

With the economy of the Western world still uneasy, the past year has brought little joy to the manufacturers of more conventional commercial transport aircraft. Boeing might be judged the exception, with its 727 and 747, in particular, continuing to attract a steady stream of customers. To keep pace with demands, despite its now-unfashionable narrow-body cabin, production of the 727 had to be stepped up to nine a month; and it is a reflection of Boeing's domination of the world market that it delivered its 3,000th civilian jet airliner on August 9, 1977, just under nineteen years after it handed over the first 707-120 to Pan American.

John W. R. Taylor—a Fellow of the Royal Historical Society and of the Society of Licensed Aircraft Engineers and Technologists, and an Associate Fellow of the Royal Aeronautical Society—has been Editor of Jane's All The World's Aircraft *since 1959. His "Jane's Supplement" appears bimonthly in this magazine. Mr. Taylor is the author of some 170 books and hundreds of articles on aviation subjects.*

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No other manufacturer outside the Soviet Union can boast a truly thriving production line of large airliners, and even the USSR has its problems. The Tu-144 supersonic transport finally entered passenger service on November 1, 1977, but only over the comparatively short (1,750 nm; 3,240 km) Moscow–Alma-Ata route. When its designer, Alexei Tupolev, was interviewed by the writer at the Paris Air Show in June 1977, he admitted that the emphasis up to that time had been placed on engine development, rather than on offering passengers Mach 2 travel. This underlines one of the areas in which the Soviet aerospace industry can still learn from the West.

Soon after the Ilyushin bureau's 350-seat Il-86 airbus made its first appearance at the Paris Show came news that it was hoped to replace, in production aircraft, the present Soviet engines of 28,660 pounds of thrust with imported General Electric CF6-50 turbofans that develop about 50,000 pounds of thrust, subject to the approval of the US Department of Commerce.

In other respects, the Il-86 reflects the advanced thinking of current Soviet designers. It is entered via three large lower-deck foyers, in which passengers can stow their baggage before climbing a short stairway to the spacious main deck. Cabin furnishings have been chosen to eliminate, so far as possible, the hazard of suffocating fumes in an emergency (a main cause of heavy loss of life in some recent accidents). As in certain Soviet military aircraft, the pilot can feed into the aircraft's flight control system a punched card appropriate to the route he is to fly, hand over to the electronics at a height of 100 meters after takeoff, and resume control at 100 meters on the approach. Flown by one of the Soviet Union's great test pilots, the prototype, despite its bulk, lifted off an 1,820-meter (5,970 foot) runway in the middle of Moscow at the start of its maiden flight.

There seems little doubt that the Il-86 will be built in quantity for both Aeroflot and the Soviet Air Forces. Another newcomer, the Yak-42, has already been ordered into production. The initial contract for Aeroflot is said to be for 250 Yak-42s, with up to 1,750 mor likely to be needed eventually. Western minc tend to boggle at such quantities, but it must b remembered that Aeroflot carried around 100 000,000 passengers and 2,000,000 tons c cargo in 1976.

With such a "captive customer" to suppl the Soviet aerospace industry is in a relative fortunate position. In contrast, too many Wes ern manufacturers are constantly competing f too few orders, from airlines with too litt available cash. Realizing that the big reward will come when operators are compelled t retire billions of dollars' worth of 707s, DC-8 Caravelles, and other early jets, every majc manufacturer has continued to produce a su cession of updated, refined, modified varian of paper projects with mysterious-soundir designations. There is no firm indication th any of these is likely to progress to prototyp construction in the near future; but Britain aerospace industry, in particular, is despera for a new commercial program.

Even the staunchest advocates of nationa ization must have been dismayed by the al sence of new life and drive since Britis Aerospace came into being officially in Apr 1977, combining the resources of British Ai craft Corporation, Hawker Siddeley Aviatio Hawker Siddeley Dynamics, and Scottish Avi tion. A decision on the future of the fou turbofan HS 146 short-haul transport seems [illegible] ple continues to keep the project alive at U government expense. Programs that might, o day, fill almost-empty production floors inclu the BAC X-Eleven or Aérospatiale A.2(twin-turbofan transports, or an aircraft er bodying features of both, built as an Angl French collaborative venture; and joint man facture of the Boeing 7N7 in partnership wi the US parent company.

UK/European Aviation Industry

On the military side, British Aerospace is a happier position, with the Hawk attack trainer at the beginning of what should pro a long life; the Harrier, Sea Harrier, Jagua and the Nimrod airborne warning and contr system all in production; and the trinati Tornado multirole combat aircraft enteri what should be one of Europe's largest man facturing programs.

News that in 1976 RAF "quick reacti alert" fighters had to be scrambled on 133 c casions to investigate potential intruders, which 123 were intercepted and escorted their way, highlights the continuing need f the interceptor version of the Tornado, as replacement for current McDonnell Dougl F-4 Phantoms. After piloting the initial int dictor version, the RAF's Chief of Air St referred to it as a "super F-111," which see

good enough assessment of a smaller and far ess expensive aircraft.

Meanwhile, experience with the pioneer, all-ritish Harrier suggests that the RAF will ress for a STOVL (short takeoff, vertical nding) type to meet its requirement for a mid-980s Harrier/Jaguar replacement, regardless f transatlantic criticism of the Harrier's loss ite.

Statistics covering twenty-two accidents in ie first seven years of Harrier operation by ie US Marine Corps, with the loss of eighteen ircraft and nine pilots, show a loss rate of 3.5 ircraft per 10,000 flying hours. Comparable gures for the conventional F-8 Crusader and -4 Phantom in Marine service, during their rst seven years, are quoted as 5.97 and 3.46. n the RAF, Harrier losses in eight years have een lower than those for the service's last ngle-seat fighter-bomber, the Hunter, at the me stage of its career.

Lt. Gen. Thomas H. Miller, USMC Deputy hief of Staff for Aviation, has said of the arrier: "One thing about the aircraft is that breeds confidence; it is not difficult to fly." oting that seventeen of the accidents were judged to be caused by pilot error, only eight of them in VTOL operation, the General believes that the Marines may have been too complacent when selecting pilots for Harrier squadrons. Greater care is expected to be taken in both selection and training in future.

The RAF's decision to order eleven Nimrod AEW 3 airborne early warning aircraft, rather than participate in a European NATO AWACS program based on standardized use of the Boeing E-3A, has produced 7,000 new jobs for British Aerospace workers. The RAF needs replacements for its vintage piston-engined Shackletons, now employed on AEW duties, as soon as it can get them. Its potential European partners in the AWACS proposal, notably West Germany, were not ready to commit funds for such a costly aircraft at present. So there was little alternative to going it alone.

In general, Europe's aerospace industries recognize their dependence on multinational programs. Economic success is not always assured, but Europe can be truly competitive when its industry receives adequate government support and encouragement.

Not being a military member of NATO,

The wide-body Ilyushin Il-86 (above) made its public debut at the 1977 Paris Air Show. Left, the A.300 Airbus, a joint German-French venture shown here in Eastern Air Lines insignia, offers hope of a large order for Europe's aerospace industries.

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and manufacturing countries that are makin an impact throughout the world. Brazil is an other, being such a vast country, with such a insatiable demand for aircraft to help open u its underdeveloped regions, that it easily justi fied the creation of a significant national in dustry. One result has been the Neiva com pany, supplying military trainers to mee Brazil's own needs and those of its Sout American neighbors. Even more spectacula has been the eight-year growth of EMBRAEI which claims to rank eighth among manufac

Israeli technology, using a French basic design and a General Electric J79 engine, produced the Kfir-C2 multipurpose fighter.

France has to watch the housekeeping money with special care when equipping its air forces. It bases its independence on thermonuclear and nuclear missiles, some silo-based, some land-mobile, and others in submarines. Like Britain, it can no longer plan for a manned strategic bomber force on the old pattern. Instead, it too has opted for a single type of multirole combat aircraft as the heart of its future air force.

Dassault's Mirage 2000 delta looks very like the twenty-year-old Mirage III and 5, which found an export market throughout the world; under the skin it is a true fighter of the eighties. At least 400 are expected to be built for French interceptor, strike, and reconnaissance squadrons in a decade when the strength of the Armée de l'Air is to be pegged at 450 first-line aircraft. If it proves as easy to build and fly, and as successful in combat, as its Mirage forebears, there is no reason why total orders should not be far above that figure.

Main snag is that changing political affiliations have closed some of the most profitable outlets. South Africa is now cut off by UN sanctions, and Israel is building its own Kfir, of undenied Mirage parentage but without a license and improved to such a degree that it could well squeeze Dassault out of certain markets if the US approved export of the General Electric turbojet around which the Kfir is built.

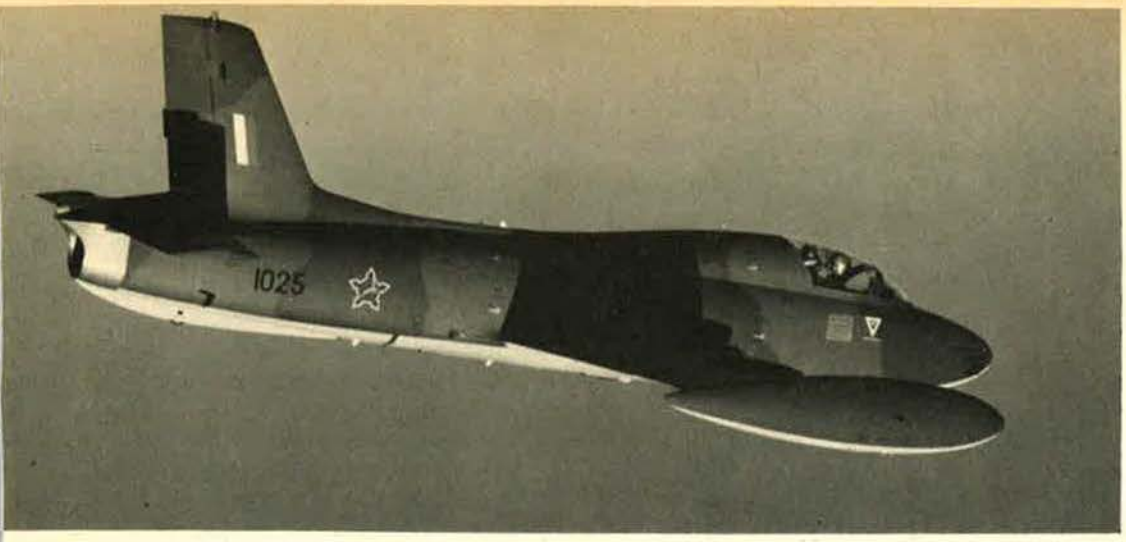
The Widening World of Aviation Industry

Israel is one of several new aircraft design

turers outside the Soviet bloc in terms of nun bers of aircraft built annually. Many of its pro ducts are US-designed Piper lightplanes, al Italian-designed M.B.326 attack/trainers; growing proportion are turboprop transport maritime reconnaissance aircraft, and cro sprayers of its own design. The quality of the types is reflected by sales as far afield as tl UK, Italy, and the Sudan.

Piper aircraft are also built under license the Argentine and Poland. The same Polis manufacturing center produces French Rally lightplanes, and similar licensing agreemen

Brazil's burgeoning aircraft industry built this Bandeirante EMB-110KI for the Brazilian Air Force.



The highly efficient Atlas Impala Mk 2 light attack aircraft is manufactured under license in South Africa.

re in force in a dozen other countries, mainly or aircraft of US, Italian, UK, and French esign.

Despite sanctions, South Africa continues to nanufacture Impala Mk 2 (M.B.326) light ombat aircraft of Italian design, with Rolls-Royce turbojet engines, as well as spares for s Mirages. It could, no doubt, progress to nore potent military types, should future events equire them, and has already developed a ght transport known as the Atlas C4M, based n Italian products.

Japan has reemerged fully as a manufacturer f combat aircraft, with Mitsubishi F-1 single-at close-support fighters now coming off the ssembly line. Although its military production dedicated exclusively to self-defense, the F-1 a hard-hitting Mach 1.6 aircraft that bears mparison with any foreign counterpart. dded to the big Shin Meiwa PS-1 maritime connaissance flying-boat, P-2J turboprop evelopment of the Lockheed Neptune anti-ubmarine aircraft, MU-2 twin-turboprop busi-ess aircraft, and C-1 twin-turbofan tactical ansport, it leaves no doubt that Japan's aero-pace industry is capable of producing anything equired from it.

In a world dominated by two superpowers, ith super aerospace industries, it is difficult to ssess the importance of maintaining such ca-ability. Japan clearly considers the expense stified; the same is true of Sweden which, at e time this piece was being written, faced a fficult decision on whether or not to build the ab B3LA attack/trainer to replace its present 60s in the coming decade. The price of able neutrality is high; but the Swedish Air rce could never purchase elsewhere the ique combat types it needs to provide an fective nonnuclear defense against mighty tential foes on its doorstep.

There are, currently, nearly forty aircraft anufacturing nations in the world, with many ndreds of different aircraft on their assembly lines, including sailplanes and RPVs. More airships are being completed and flown at the present time than at any period since the US Navy ceased to operate blimps. Then there are all the homebuilt aircraft, hang gliders, and hot-air balloons that give so much pleasure to so many airminded people—not to mention all the satellites, spacecraft, and rockets covered by that final syllable of the word "aerospace." Their achievements during the past year have been myriad, ranging from the new height record of 37,650 meters (123,523 feet) set by an uprated MiG-25 to the Viking spacecraft's photography of the far-off surface of Mars, which would once have filled the pages of the world's newspapers for days.

The Ends of the Spectrum

Perhaps the writer may be forgiven for devoting the last words of this survey to two aircraft that are as different as human minds could conceive, and which may be remembered long after the Backfires and cruise missiles have disappeared forever.

One of them is the MacCready Gossamer Condor which, in California on August 23, 1977, proved convincingly that it is possible to build a man-powered aircraft that will fly a figure-of-eight around two pylons half a mile apart. Piloted and propelled by a young racing cyclist named Bryan Allen, the Condor covered the course in 6 minutes 22.5 seconds at a speed of about 11.3 knots (21 km/hr; 13 mph), looking thoroughly stable and controllable throughout. Historians are unlikely to overlook the fact that, like the 1903 Wright biplane, which initiated our century of powered flight, this first entirely practical man-powered aircraft has a front-elevator configuration.

The other "design of the year" is one that we may never see in flight; yet it holds the key to the whole future of air transportation.

The 1976–77 "Jane's Aerospace Review" commented that "One of the most disturbing

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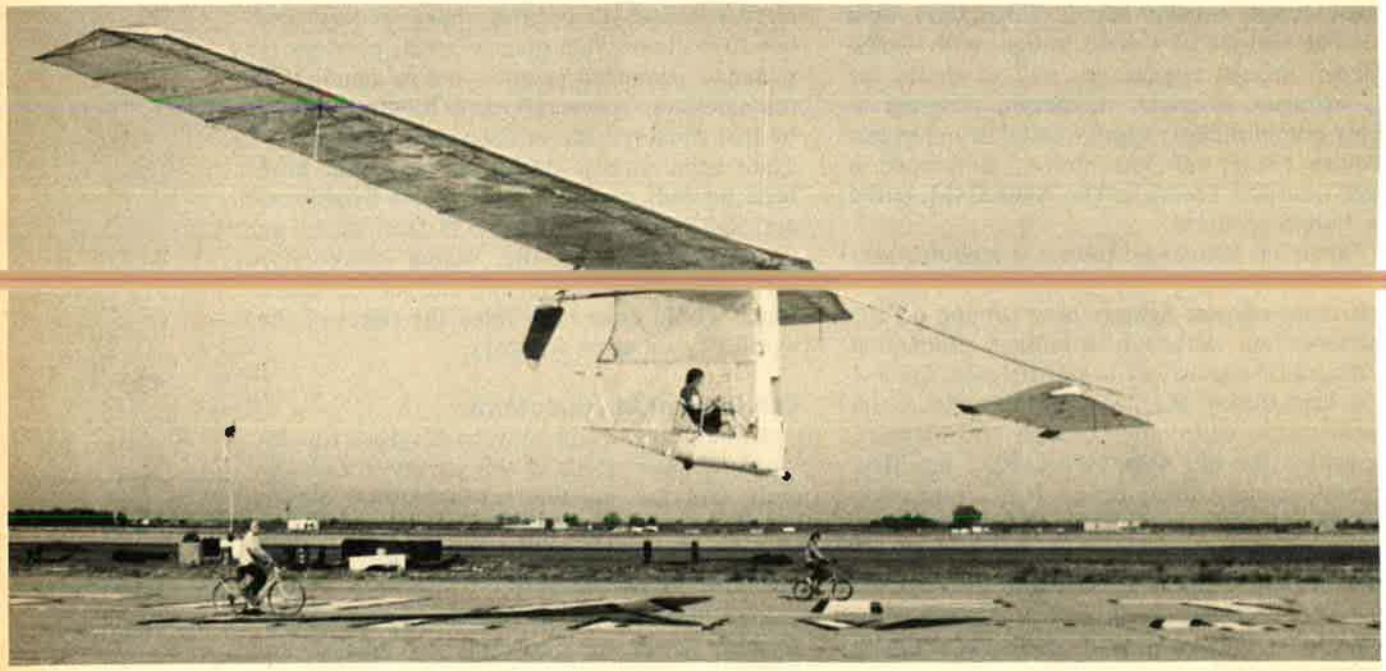
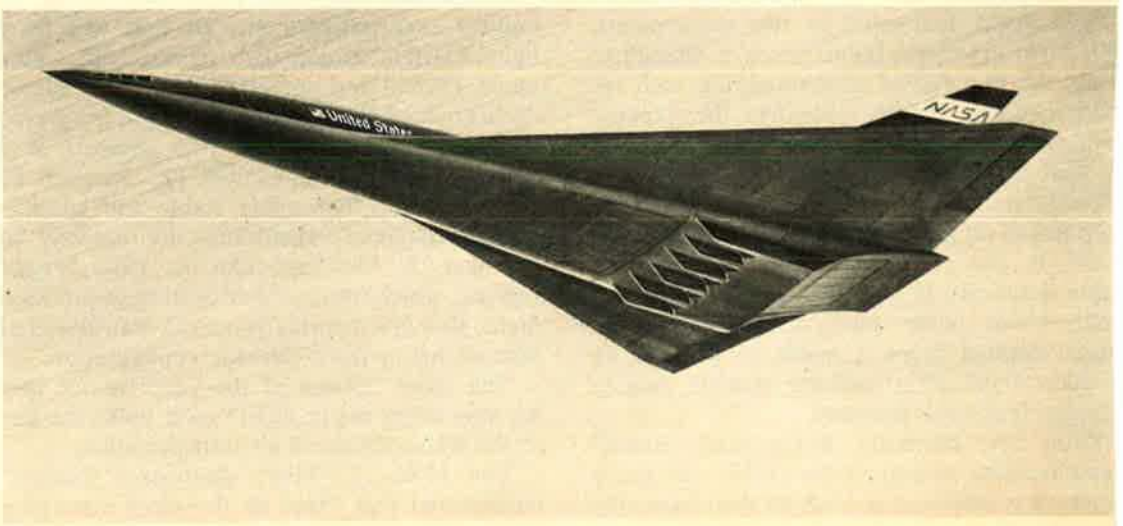
features of the present time is that so little progress is being made toward adapting conventional aircraft and land vehicles to run on fuels like liquid hydrogen, which must eventually take the place of hydrocarbons if the world is to remain brightly lit, warm, mobile, and at work throughout the twenty-first century." As this 1977–78 Review was about to be typed, Lockheed released details of a NASA-funded fifteen-month study of hypersonic airliners able to carry 200 passenger more than 5,750 miles (9,250 km) at 4,00 mph (6,400 km/hr) that they were about t begin.

An accompanying photo (*see below*) showe an elegant delta with a dual propulsion syster of five turbojet engines and five ramjet engine all using liquid hydrogen fuel. Transatlanti flight time, from New York to London, woul be 1 hour 56 minutes, including the time sper flying at subsonic speed while departing fro and approaching airports, as required by nois regulations.

It has long been the contention of the write that there is little point in building airliners t fly at speeds between the Concorde's Mach and the Mach 6 that is entirely within reacl using proven technology. As a result of th bold venture by NASA and Lockheed, th future of aviation is beginning to look as ex citing and purposeful as its past.





In California, the man-powered Gossamer Condor, above, won the £50,000 Kremer Prize for its one-mile flight. Right, artist's concept of a dual-propulsion 4,000-mph airliner of the future.

The fundamental merit of bilateral accords between the US and the USSR concerning the development and deployment of strategic arms is fully accepted by the civilian and military leadership of the Pentagon. But the paramount question, now as in past agreements, is . . .

The Equal Sign in the SALT II Equation

BY EDGAR ULSAMER, SENIOR EDITOR

WHEN Secretary of State Cyrus Vance last fall briefed a select group of US senators on the status of SALT II, Sen. Henry (Scoop) Jackson (D-Wash.) reportedly reacted with undisguised irritation and frustration. Senator Jackson, a forceful, apperceptive critic of negotiating errors that in earlier rounds of the Strategic Arms Limitation Talks led to loopholes and asymmetries, putatively bristled at the apparent absence of coherent US policy approaches and at the concessions—not briefed to the appropriate Senate subcommittee—that occurred after the Carter Administration first went to the mat with Moscow's SALT II negotiators early in 1977.

At this writing, the bottom line on SALT II is still hazy, but most of the pivotal features of this pending accord that will vitally influence the strategic posture of the two superpowers in the next decade and beyond, are becoming discernible. Capitol Hill SALT watchers guardedly predict that the agreement will be concluded before May 1978.

The proposed SALT terms are being aired publicly—to the obvious chagrin of the Administration—through volleys of news leaks and counterleaks. Gag orders, concerning direct discussion of SALT-related matters with Congress, issued to the Defense Department and other government agencies, have slowed but not shut off the leaks.

Rep. Robin Beard (R-Tenn.), a member of the House Armed Services Committee and Chairman of the House Republican Task Force on National Defense, charged the Carter Administration with attempting to suppress independent and critical assessments of the Administration's SALT II proposals. Beard released the text of an Administration memorandum, signed by David Aaron, Deputy Assistant to the President for National Security Affairs, to the Departments of State and Defense as well as the Arms Control and Disarmament Agency, the Central Intelligence Agency, and the Chairman of the Joint Chiefs of Staff. This White House order requested that any information to be provided to Congress on the strategic forces and programs of the US and the USSR "should be cleared through the SALT Working Group" to assure that such analyses are "consistent with and represent the best judgment of the Executive Branch." The underlying objective, according to Beard, is "to stifle independent and objective assessments of the . . . SALT II proposal and prevent Congress from gaining access to any dissenting viewpoints."

At the same time, five Senators considered proponents of the Carter Administration's SALT approach launched a counteroffensive to change the makeup of the Senate's Arms Control Subcommittee. Sen. Gary Hart (D-Colo.) even called a special news conference to denounce unnamed malefactors "who oppose a SALT II treaty agreement—and possibly any realistic arms limitation treaty [and who] have rushed to judgment, to reveal and condemn a treaty still being fashioned."

Meanwhile, congressional sources report increasing Administration pressure via the "pork barrel sector" on members suspected of fostering opposition to the present terms of SALT II. White House concern is understandable; at least the core element of SALT II—the basic treaty that is to be in effect for eight years—requires Senate approval by a two-thirds majority. At this writing, opponents of the SALT II terms claim their informal polling suggests that "at least between thirty-five and forty nay votes" can be expected. It would take only thirty-four nays to reject such an accord.

Press coverage of SALT's terms, in spite of extensive public relations campaigns by the White House and other government departments concerned with SALT, has often been critical. Typical of the reaction among newspapers of generally conservative persuasion was this lead of a Chicago *Tribune* commentary: "The best thing that can be said about the proposed SALT agreement slowly emerging in Geneva is that it tilts so outrageously in favor of the Soviet Union as virtually to defy the Senate to ratify it." The fact that congressional action on the Panama Canal treaties, another cliff hanger, could well overlap with Senate action on SALT II, provides little comfort to the supporters of the latter. Two other Carter Administration initiatives in the disarmament field also might affect the congressional climate at the time: the so-called Comprehensive Test Ban Treaty (CTB) eliminating *all* nuclear testing—considered by most technical experts as essentially unverifiable—and a ban equally difficult to monitor and enforce on the test, development, and deployment of chemical warfare weapons.

Whether these basically adverse political factors—

coupled with reportedly increasing Soviet recalcitrance concerning certain unresolved or "gray" issues—will cause the Administration to toughen its stance is problematical. What seems certain is that SALT II will undergo further, drawn-out modification. The case for revision—despite obvious US eagerness to fill the vacuum brought about when the SALT I five-year interim accord expired last October—becomes formidable through such public statements as Rep. Jack Kemp's (R-N. Y.) comment that "I am appalled at the extent of the collapse of our SALT negotiating posture. We are headed for an agreement which will increase the risk of nuclear war and codify Soviet strategic nuclear superiority with the unmeasurable consequences for our diplomacy such a condition implies. . . . The Congress will not ratify such a one-sided agreement, and I will make every effort to see that SALT II is not ratified until its terms are modified to provide for equality for the United States."

Perhaps even more significant was a recent letter to President Carter by three Democratic senators—all members of the Armed Services Committee and considered staunch supporters of strategic arms limitations. Sens. Thomas J. McIntyre (D-N. H.), John C. Culver (D-Iowa), and Dale Bumpers (D-Ark.), importuned the White House to take a stiffer stance and insist on more precise SALT II language to protect vital US interests. The letter listed six specific treaty areas in need of shoring up "to strengthen the agreement and to broaden support for ratification."

The SALT II Outline

Possibly the most telling blow was struck by Paul Nitze, a former SALT negotiator and a Deputy Secretary of Defense in the Johnson Administration. The picture of SALT II's consequences drawn by Mr. Nitze for the news media—subsequently confirmed in terms of broad facts but not in implication by a senior defense official—is that "in *prompt* countermilitary potential residing in ICBMs the present approximate state of parity will degrade to a better than ten-to-one advantage for the Soviet Union by 1985; that by that year the Soviets will have achieved numerical parity with the US in warheads; that by 1985 the Soviet lead in total megatonnage over the US will be slightly more than six to one"; and that recent US program decisions plus the terms of the probable SALT agreement make it virtually impossible "to maintain crisis stability, rough equivalence, or to reverse the presently unfavorable trends during the period of the agreements. . . . We are," said Mr. Nitze, "locked into inferiority, and I don't know how to get out of it."

SALT II, as presently structured, is to consist of a treaty, a Protocol, and a Statement of Principles that spells out the major issues to be dealt with in SALT III.

The actual treaty, Mr. Nitze and several congressmen, including Representatives Beard and Kemp, told the press, is likely to become retroactive to the expiration of the SALT I Interim Agreement last fall and, initially, is to limit both sides to an aggregate of 2,400 strategic nuclear launch vehicles (SNLVs), consisting of ICBM and SLBM launchers and heavy bombers. This limit was arrived at in the 1974 Vladivostok understanding. The initially authorized total is to be reduced to an exten and over a period of time that are still not firmly de cided. The US proposed a reduction to about 2,160 b 1980 while the Soviets are holding out for an aggregat of 2,250 by 1982.

A sublimit of 1,320 MIRVed weapons—also carrie forward from Vladivostok—is to become effective a once but now it includes *heavy* bombers carrying *arme* air-launched cruise missiles of *intermediate* range ICBMs were defined in Geneva as systems with a rang of 5,500 kilometers or more but no definition wa reached on SLBMs. A further subcategory—within th MIRVed weapons—was created but specific number appear to be still under negotiation: The US propose

'We are headed for an agreement which will increase the risk of nuclear war and codify Soviet strategic nuclear superiority . . .' — Rep. Jack Kemp

a maximum combined total of MIRVed ICBM an SLBM launchers of 1,200, whereas the Soviet ceilin was 1,250. Of this total no more than 820 may b MIRVed ICBMs. The Soviets will be permitted to hav 326 (or 308, if operational launchers at test ranges a not counted) modern large ballistic missiles (MLBMs of the SS-18 type. That missile's throw-weight exceed that of the older SS-9—which US negotiators in 197 erroneously assumed to represent the maximum pe mitted throw-weight—by about 4,000 pounds. The r maining MIRVed Soviet ICBMs can be SS-17s an SS-19s, whose throw-weights are 7,000 pounds an 8,000 pounds, respectively. The US is not permitted an MLBMs *at all*.

The fate of USAF's proposed MX missile—with throw-weight of 7,500 pounds, or slightly less than th

f the SS-19—could be adversely affected by SALT II. The reason is that the provisions governing "new" CBMs, including mobile or unconventionally based systems, are not yet firm. According to Mr. Nitze, the US proposed that during the initial three years of the treaty —the so-called Protocol period—there be no testing of CBM types not previously tested, and no deployment f types not already deployed at the time the agreement s signed.

Yet another sticking point, congressional sources told AIR FORCE Magazine, is precise definition of what is a new" and what is a "modified" ICBM. With the Soviets nown to have at least five ICBMs, including the mobile S-16, ready either to join the operational inventory or o enter or continue operational testing, this question ecomes crucial. Complicating the definition problem ; the tendency of ICBM designers—especially in the oviet Union—to incorporate proven components in ew weapons. Hence the ambiguity inherent in the ques- ion of when is a "new" ICBM *new* in the sense of the reaty.

The Soviet position to date appears to be that the ban hould be confined to new *MIRVed* ICBMs, thus per- nitting the testing and deployment of any new system, xed-site or mobile, as long as it carries only a single RV. The implied potential for "breakout," *i.e.,* rapid onversion to MIRVed configuration in case of termina- ion or abrogation of SALT, is conspicuous. So is the roblem of verifying whether such weapons indeed re- nain un-MIRVed.

After the expiration of the Protocol, the treaty lan- uage would seem to permit the development, testing, nd deployment of mobile or unconventionally based ystems. They would, of course, be counted within pplicable numerical limits.

Both sides apparently agree that mobile systems and nobile launchers can be tested—but *not* deployed— uring the three-year life of the Protocol, as long as the nissile is not actually test-fired from such a launcher. his provision would not seem to shackle the MX pro- ram because that system could not be ready for full esting until after the expiration of the Protocol.

)ther ICBM Restrictions

Ballistic missiles with a throw-weight greater than hat of the SS-18 will be prohibited and all those exceed- ng the throw-weight of the SS-19—presumably as stip- lated by the US since the Soviets refuse to divulge such nformation—will be counted as MLBMs. The ambi- uities that arise from such unilateral definitions would em to portend rough sledding in the Senate for these ovisions. Even under the best of circumstances—and suming punctilious Soviet adherence to such basically nverifiable commitments as to forego MIRVing of ngle RV systems and not to seek a silo reload ca- bility—the throw-weight chasm can be expected to iden significantly under SALT II. Mr. Nitze estimated at by 1985 the Soviet throw-weight aggregate residing their ICBMs will approach 8,000,000 pounds, which ould translate into about 5,000 RVs, each with a eld several times that of the US warheads. US throw- eight, he predicted, will be 1,250,000 pounds, assum- g that the number of Minuteman III remains at 550 and is not reduced—as is likely—to accommodate additional heavy bombers and SLBMs.

The consequences of this throw-weight imbalance, when coupled with normal, evolutionary improvements in Soviet warhead accuracy, could be decisive. Congressman Kemp calculates that under the terms of the tentatively approved SALT II Joint Draft Text, the Soviets could develop a capability to destroy up to 4,331 US targets with a blast resistance of 1,000 pounds per square inch, the approximate hardness of some Minuteman silos. "This figure is four times the number of such targets in the United States [hence the US] has agreed to terms that not only eliminate the Minuteman ICBM system as a viable element of our deterrent in the 1980s, but also undermine [the Administration's] plan to use 747-type aircraft to carry cruise missiles, because these aircraft can only use 150 bases, or less, in the entire US because of the great weight of the aircraft."

Mr. Nitze suggested that once Soviet accuracy approaches 0.15 miles, about ninety percent of the US ICBM silos could be destroyed if the Soviets target two RVs on each silo. Such an attack would draw down the Soviet ICBM force by "less than half of the MIRVed ICBM RVs they are expected to have available by 1985. If and when their accuracy approximates a tenth of a mile, around ninety percent of our silos would be vulnerable to an attack by a single RV against each silo, provided that additional RVs are programmed to substitute for missiles that fail during their launch phase." If, on the other hand, the US were to launch all 550 Minuteman IIIs against Soviet silos and "assuming improved accuracy and the substitution of MK-12A for MK-12 RVs, . . . it is unlikely that we could destroy more than sixty percent of them," Mr. Nitze estimated.

A senior Defense official did not deny the basic accuracy of Mr. Nitze's contentions. He did challenge, however, the importance that SALT II opponents ascribe to narrow comparisons of Soviet vs. US MIRVed ICBMs, without regard to the capabilities inherent in the other components of the strategic Triad. Saving ICBMs per se should not be a *sine qua non* of SALT II, in the Administration's view. Rather, he said, the US objective is to reach terms that permit the US—if necessary—as much payload, as much hard-target kill capability, and as effective a deterrent capability as that of the Soviets. The means for retaining relative balance are to be the air-launched cruise missiles (ALCM) and SLBMs, according to the Defense Department. ALCM's accuracy and range allegedly will be sufficient to destroy Soviet ICBM silos if they are being reloaded with spare missiles in violation of the agreement, the senior Defense official said. Congressional experts on strategic warfare are sceptical about the practicality of such an approach.

Curbs on SLBMs and Bombers

It is likely that the SLBM balance will continue to slightly favor the US. There is also evidence that the US leads in the ability to detect submerged submarines although eventual advances in Soviet countermeasure technology might negate this US advantage. Whether or not SLBMs can redress the pronounced asymmetry in ICBMs expected in the 1980s is debatable. Neither the Defense Department nor the SALT II opposition ex-

pects SLBMs to achieve significant hard-target kill capabilities within the lifespan of SALT II. The prospect of solving the command and control problem of the Fleet Ballistic Missile force remains dim, in the view of most technical experts. Some defense analysts believe, therefore, that the role assigned to strategic submarines may have to be modified by curtailing their patrol area or using them as a highly survivable strategic reserve, instead of as part of the cutting edge of strategic deterrence.

At this writing, it appears that the Soviets will be authorized about 400 MIRVed SLBMs, assuming that they deploy their quota of 820 MIRVed ICBMs. Neither SALT II nor the three-year Protocol appears to place specific restrictions on deployment of the new Trident submarine or its Soviet counterpart, the twenty to twenty-four launch-tube TYPHOON.

The US appears to be handicapped somewhat, however, because the new Soviet SSNX-18 SLBM, thought to have a range close to 6,000 miles, came in under the wire, whereas the US Navy's proposed Trident II SLBM of equal range did not. Trident I can be tested and deployed, but its range of about 4,000 miles does not permit launch from home ports against Soviet targets.

Some terms affecting heavy bombers and cruise missiles are still fluid at this writing. It seems certain, however, that the Soviet Backfire strategic bomber, contrary —according to Representative Beard—to the Joint Chiefs of Staff recommendation, will not be covered by SALT II. Neither apparently will the ninety to 100 heavy Soviet bombers—with bomb bays intact—that have been modified for reconnaissance and antisubmarine warfare missions. SALT II critics report that the Backfire's exemption came about through Soviet willingness to declare, informally and outside the treaty language, that the weapon would not be used in a fashion threatening the United States and that the present production rate would not be increased. There appears to be a colossal catch, however: The Soviets, for reasons known only to themselves, refuse to say what that rate is.

As yet unresolved is the question of whether or not US B-52s in protective storage will count against the SALT limit, unless, of course, they are destroyed voluntarily. At this writing, Administration witnesses are briefing Congress on what is billed as a major, last-minute Soviet concession concerning cruise missiles. A SALT II sticking point, heretofore, had been definition of cruise missile range. These low-flying, subsonic weapons obviously are affected by wind and other environmental factors as well as being vulnerable to Soviet air defenses and, therefore, must be programmed to fly around SAM concentrations. Thus, in typical scenarios they will cover about twenty-five percent more distance than the straight-line from launch points to targets. Reportedly, the Soviets have agreed now to define range in light of practical conditions. During the life of the three-year Protocol, test and deployment of cruise missiles with a range of more than 2,500 kilometers is forbidden. By implication, the door is left open to increase that range once the Protocol expires in case changes in Soviet air defenses make it necessary. SALT II critics view this approach with apprehension if not alarm for a number of reasons.

The Joint Chiefs reportedly opposed from the outset *initial* range restrictions of ALCM to below 3,000 kilometers, and to below 3,500 kilometers following the expiration of the three-year Protocol. Grounds, presumably, were the need to reach the Soviet target complex along the Transsiberian railroad from standoff positions in the face of steady outward expansion of Soviet air defense capabilities. Recent intelligence analyses suggest convincingly that Soviet technology will soon permit moving the air defense perimeter much farther out to sea, possibly up to 1,900 kilometers. Such a development, obviously, would relegate first-generation cruise missiles launched from nonpenetrating platforms to a state of uselessness, especially if linked to massive Soviet deployment of the seven- to fifteen-mile-range, low altitude Soviet SA-X-10 surface-to-air missile system.

Historical experience supports the argument that ground yielded in agreements with the Soviets is next to impossible to regain. The Administration's plan to extend ALCM's range after expiration of the Protocol—if so required—can be seen as doubly weak since the Soviet Union will not be required to reduce the aggregate of its nuclear delivery vehicles until that very time. As Mr. Nitze asked rhetorically: "Is it inconceivable that in the event we do not wish to renew certain provisions of the Protocol when it expires the Soviets might see some necessity to review the treaty terms?"

Critics of pertinent SALT II formulations see another catch in connection with air-launched cruise missiles. These intermediate-range weapons, contrary to some portrayals, are not independent from their launching platform. The viability of the bomber/cruise missile system depends on a number of factors: The preferred survivability of the bombers; sufficient hardness of the bombers to survive enemy barrage bombing of their escape routes; the ability of the bombers to penetrate close enough to the target without getting shot down; the ability to launch enough ALCMs to overload the defenses; and, lastly, the capacity of the cruise missile to penetrate area and terminal defenses and to strike the target with enough accuracy to destroy it. With the B-1 canceled, the proposed FB-111H program scuttled by Congress before it got off the ground, and the Backfire getting a free ride from SALT II, the cruise missile equation takes on a totally new meaning. On the strength of the Administration's SALT proposals for sublimit within the 1,320 MIRVed weapons ceiling, it is being assumed that the US plans to equip about 120 B-52 with ALCMs.

As Mr. Nitze argued convincingly, it would be unlikely that more than about fifty percent of the B-52 would be on continuous alert or that more than about seventy percent could be maintained at full readiness during crisis periods requiring fully-generated strategic forces. From the Soviet perspective, the picture looks considerably brighter. There are no US air defenses to speak of, and the Backfire arsenal can be proliferated with impunity. (Even conservative CIA estimates foresee a force of 400 of these advanced strategic bombers.) If this assumption is correct, two conditions would obtain that threaten to negate US plans for maintaining strategic stability: The Soviet Union, within the next few years, would be able to deliver substantially more

megatonnage on the US with its bomber force than this country could bring to bear on the USSR, *and* the component of the US strategic forces counted on to offset the Soviet lead in ICBMs—the bomber/cruise missile system—turns out to be in a deficit position itself. Hence this dire warning by Mr. Nitze: "Under the now most likely provisions of a SALT II agreement we run a high risk of having no B-1, no cruise missiles adequate in numbers and range to penetrate Soviet defenses, no follow-on to the aging Minuteman III, and an SLBM force at sea of [fewer] than twenty-five boats, each constituting four percent of our only reliable deterrent power and thus worth enormous Soviet effort to negate."

Singling Out Theater Weapons

Another late Soviet concession, seen as major by

'We are locked into inferiority, and I don't know how to get out of it.' —Paul Nitze

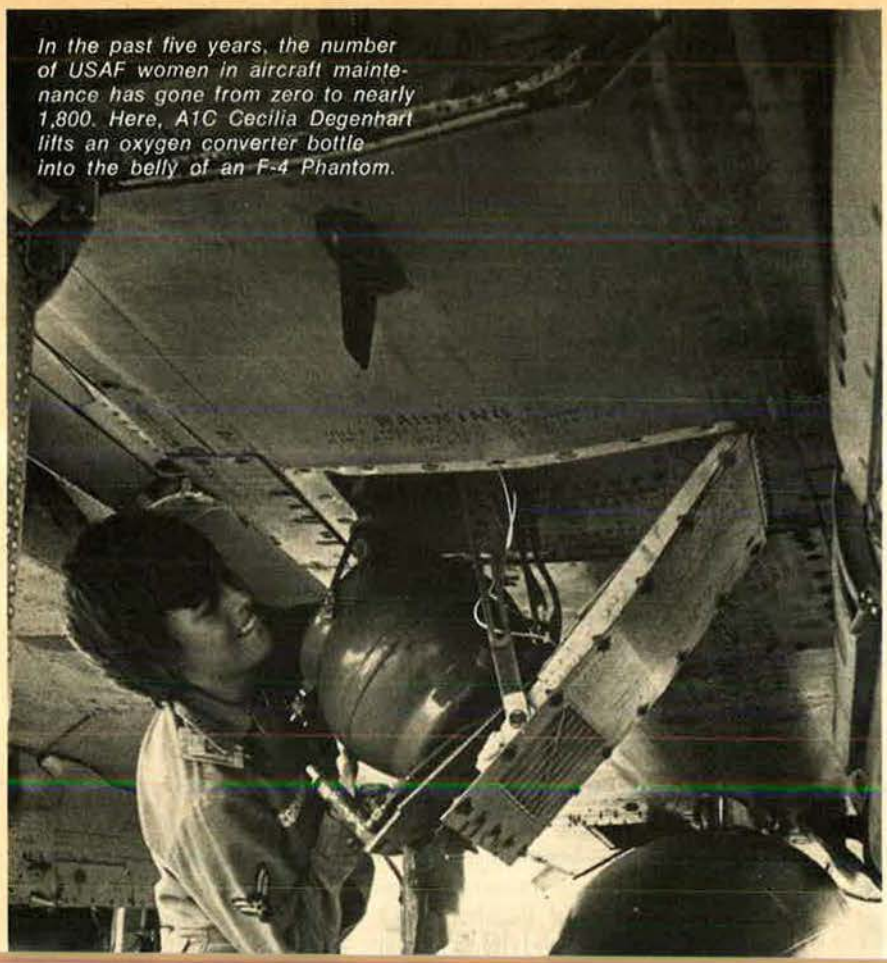
SALT II supporters, is the agreement to permit testing ground-launched (GLCM) and sea-launched (SLCM) cruise missiles over a distance of up to 2,500 kilometers from ground-based launchers. This "concession" does not seem to affect in any way, however, the prohibition of *deploying* such weapons with a range greater than 600 kilometers. The fact that these theater weapons are an element of SALT II is curious of itself. The Soviet SS-20, a new MIRVed mobile, intermediate ballistic missile with a range of well over 4,000 kilometers, is not counted under SALT II rules, even though its erectors/launchers can accommodate the clearly intercontinental SS-16 from which it differs only by deletion of one of the latter's three stages. Ditto for the Backfire, portrayed by the Soviets as a theater weapon, despite its dual capability due to its intercontinental range. There is little doubt among congressional experts on NATO, and US and European NATO commanders and analysts, that a 600-kilometer ground-launched cruise missile is not cost-effective and will not be built. Pershing II's present range exceeds the proposed GLCM limit and could be extended to about 2,500 kilometers without degrading the weapon's high accuracy, and without being hamstrung by SALT II, congressional analysts point out.

GLCM/SLCM weapons are embroiled in another SALT II dispute, the so-called noncircumvention and nontransfer clauses covering technologies of potentially strategic utility. The Soviet contention is that US transfer of such technologies to its allies—in the main satellite-derived terrain data used to keep cruise missiles on course, and high-energy fuel technology—could lead to a circumvention of SALT because one or more NATO powers could build GLCMs with a range greater than 600 kilometers. US willingness to entertain Soviet requests to shut out US allies has caused a rift between this nation and its European allies. As a prominent congressional source told AIR FORCE Magazine, "The notion that we tell our allies, 'No, we can't give you the information needed to help offset the widening Warsaw Pact lead because we have made common cause with our mutual adversary,' boggles the mind."

The Verification Problem

SALT II critics uniformly view the lack of verification—beginning with the Soviet refusal to disclose essential information about their strategic capabilities, including numbers and performance characteristics—as a potentially fatal flaw of SALT II as it stands today. Even under the best of circumstances, compliance with SALT terms is difficult to verify. Verification becomes impossible if what is to be limited and the nature of the limitation have not been clearly defined. "How do you determine," Mr. Nitze and other critics have asked, "that a new missile having the throw-weight of an SS-19 and carrying the SS-19 bus, but with a single RV, is not capable of being deployed as a MIRVed missile? How do you determine that retired missiles, or missiles taken out of retired launchers, or extra newly produced missiles are not stockpiled and available for relatively prompt deployment on soft pads or reloaded in launchers using the cold-launch technique."

This late in the SALT game it is not likely that the fundamental tone of the pending agreement can be changed. The near-mystic belief that *any* arms accord is better than none, linked to the notion that nuclear war is unthinkable and strategic asymmetries therefore inconsequential, have provided SALT with an unstoppable momentum. Even the most vocal critics of SALT are resigned to its inevitability. Most of them are resolved—if the accord is ratified by the Senate—to concentrate efforts on assuring that all the steps permitted the US in maintaining perceived essential equivalence in the future will indeed be taken. There is consensus that the first and most crucial step here must be MX, the system that Representative Beard predicts would demonstrate to the Soviets "the folly of an arms race [thus causing them] to accept an equitable SALT agreement which would contribute to long-term strategic stability and world peace." ■



In the past five years, the number of USAF women in aircraft maintenance has gone from zero to nearly 1,800. Here, A1C Cecilia Degenhart lifts an oxygen converter bottle into the belly of an F-4 Phantom.

Widening Horizons fo

Some DoD officials may be overly optimistic about the number of young women who are qualified for and interested in military careers. Nevertheless, USAF leads the services in its recruitment goals, and the door has been opened to women in some operational areas.

BY ED GATES
CONTRIBUTING EDITOR

SHOULD larger numbers of Air Force women serve in such "nontraditional" jobs as aircraft maintenance and security police work? How about more than the present token number getting a crack at pilot or navigator wings—or ICBM duty? And the $64 question: Should Uncle Sam ease, perhaps even erase, the law that bars females from serving as aircrew members in combat, or in other combat-related positions?

Answers to these and related puzzlers could surface this year, for a growing number of influential supporters is clamoring for action. They're also pressing the Pentagon to add additional womanpower throughout the military establishment.

USAF has already moved ahead of the other services on the general build-up front. It recently raised its [illegible] be reached over the next five years. That represents more than fourteen percent of the entire force, and it more than doubles the 40,000 presently on board. The move has sent the Air Force Recruiting Service scrambling to sign up 13,100 non-prior service enlisted women this fiscal year and 13,300 next year. Far larger than any previous effort, the drive comes at a time when the overall recruiting climate is growing tougher and more costly.

Plenty of well-qualified young women, attracted in part by the "equal pay" in the military system, are ready and willing to join up, according to recent studies by the Defense Department and Brookings Institution. Numerous Pentagon executives agree. But other quarters aren't so sure, at least about finding enough with mechanical or elec

ronic aptitudes and desires, so that ıe Air Force could distribute them omewhat proportionately with men ıroughout most of the career fields.

A Hq. USAF Air Staff office, for xample, has examined the char- cteristics of youths available for ıilitary service, such as their basic ualifications and their "propensity" or enlisting. The staffers' conclu- ions cast "doubts about the exis- ence of the purported resource ool." Equally disturbing is the tudy's finding that women have ıuch lower aptitudes than men in ıe mechanical and electronic areas here Air Force has its greatest re- uirements.

Air Force authorities are tracking ıe big recruiting drive closely. So re critics who want dramatic ex- ansion, not the measured, orderly, ut still liberal expansion USAF fficials feel is occurring.

Airman Jean Weatherup, a sharpshooter of Nellis AFB, Nev., Security Police, participated in BOLD EAGLE, under realistic combat conditions, at Eglin AFB, Fla.

)pening the Operations Area

Regardless of the recruiting ef- ort, 1978 should find an expanded ole for Air Force women on many ronts. In the pilot area, Air Force o far has produced ten distaff pilots nd says it plans to enter twenty per ear in undergraduate pilot training. ut the ultimate decision on exactly here the service will go with fe- ıale pilots appears tied to an on- oing Defense Department study, rdered by Congress in the FY '78 filitary Authorization Act.

It calls on the Pentagon to pro- ıote equal opportunity among wom- n in service, expand their job hances, and arrive at a new defini- on of combat designed to foster ıese objectives. The lawmakers lso told Defense to submit legisla- ve recommendations and report ack by the end of this month.

Air Force has also trained a half- ozen female navigators. But it aced a "hold" on the program late st year, pending decisions on new ıvigation equipment that would re- ıce the need for navigators gener- ly in tanker and transport aircraft.

Another important womanpower test, set for completion next spring, is checking on whether they can handle security police work. One hundred female volunteers at Nellis, Barksdale, and Grand Forks AFBs, all Stateside, and Osan AB in Korea, are pulling the same grueling guard duty—of aircraft and facilities—that some 19,000 male security policemen perform Air Force-wide. If the experiment is successful, more women will be assigned to the highly nontraditional jobs. More than 1,000 USAF women already serve on the law-enforcement side of police work.

Last fall, following heavy outside pressure, Air Force opened the combat-crew missile field to female volunteers, and an early January board was to select fifteen officers (second lieutenant through major) and twenty-five enlisteds (airman first class through master sergeant) for training beginning in March. They will perform the same duties as men and will be randomly integrated on four-person crews at three Titan II bases: Davis-Monthan, Ariz., Little Rock, Ark., and McConnell, Kan.

Here, too, if all goes well, the door may be opened wider. Officials will monitor the missile crew composition, adaptability, and life support equipment, and other factors "to determine the future expansion of females into the missile field." Eventual entry into the Minuteman II program is expected.

Larger numbers of Air Force women, meantime, are moving into positions once reserved almost exclusively for men. A year and a half ago, for instance, forty USAF women commanded organizations from small sections to a base. Now there are sixty female commanders.

Women are firmly entrenched at the Air Force Academy. Of the 311 who enrolled in the classes of 1981 and 1982, 265 remain in school. Plans call for continued entry of about 150 annually.

Five years ago no USAF women worked in aircraft maintenance, but by late last year 1,761 were so employed. During the same period, distaff jet engine mechanics increased from zero to 795. Since FY '72, the number of enlisted women in nontraditional jobs generally

ir Force Women

jumped from 900 to some 15,300. Among officers, the gain was from 100 to 700. All told, forty percent of USAF's 40,000 female members fill nontraditional billets, Hq. USAF reports.

Air Force officials want to boost this percentage. But it may be difficult, even impossible, despite the fact that only six career fields remain closed to women. Under the smaller distaff recruiting quotas of previous years, the Air Force did not meet its goals for newcomers in nontraditional areas. "More than half of all potential female recruits are not qualified for mechanical jobs," Air Force has told the Defense Department.

Where the Action Starts

The decision to open missiles to women came shortly after Antonia Handler Chayes, a vigorous champion of the women's movement, became USAF's Assistant Secretary for Manpower, Reserve Affairs and Installations.

Other prominent figures leaning on the services to expand combat-related positions for women include Sen. William Proxmire (D-Wis.), Maj. Gen. Jeanne Holm, USAF (Ret.), and Sen. Barry Goldwater (R-Ariz.). Hardly a month passes that Senator Proxmire does not take umbrage with the Air Force for not planning more extensive use of women. He scolded the Air Force recently, for example, for not letting them serve as aircraft loadmasters and in-flight refueling operators. These two career fields and four others—aerial gunner, flight engineer, pararescue and recovery, and ROMAD (radio-operator/maintenance/driver)—are the only remaining job areas (of 240) still closed to Air Force enlisted women.

General Holm, former head of Women in the Air Force (WAF), made headlines last fall during an appearance on Capitol Hill, just a few days before Air Force lifted the missile bar. She told a subcommittee chaired by Senator Proxmire, which was looking into servicewomen's opportunities, "I don't need a fancy study or a test to tell me that a women can perform as well as a man as a missile launch officer!"

Senator Proxmire, meanwhile, called for repeal of the law blocking females from flying or navigating aircraft that might be used in combat. "Open up all Air Force jobs on the basis of the individual qualifications and who can accomplish the task—not sex," he declared in October. Senator Goldwater, whose views often clash with those of Proxmire, in this case voiced "complete agreement" with the Wisconsin Democrat.

About the same time, Rep. B. F. Sisk (D-Calif.) and twenty-one other members of the House, eighteen of them men, introduced legislation that would "allow . . . [servicewomen] to serve in all duty assignments for which they volunteer and are otherwise qualified." The services almost certainly will oppose such broad language.

This same conviction—a wide open door for military jobs—dovetails with the apparent thinking of growing sections of the public and women's rights groups. Not s

Airman Catherine Stebbins, Andrews AFB, Md., rolls the electrical cables of a power unit used to start the T-39.

USAF's military leadership. While expanding women's opportunities, it has stopped short of openly advocating the use of women in combat, preferring to defer to Congress on the issue.

Still, USAF is clearly pacing the services in broadening the role of women. One reason is Secretary Chayes, who holds strong views on the subject. Only a few weeks after she took office last summer, Air Force boosted its five-year women expansion goal from 57,000 to the aforementioned 81,000 personnel figure.

Early in her new post, Ms. Chayes, a former dean of Tufts University's Jackson College, also questioned USAF's strict rules on the joint use of dorms by men and women, which the service long contended was necessary for adequate privacy. This curb, Air Force officials told Defense early in 1977, prevented the assignment of single women to some 72,000 enlisted positions overseas. However, a more recent review of these restrictions now leads USAF officials to believe there are ample billets broad to support the increases of women planned through 1983.

Secretary Chayes also told AIR FORCE Magazine that "there are many combat jobs women can handle." However, any decision on changing the law to make that thought reality probably hinges on the Defense study on redefining the meaning of combat.

Another traditionally male assignment—small-arms instructor—is filled by Sgt. Linda Minor at Lowry AFB, Colo. Only six of 240 career fields remain closed to women.

Legal and Policy Limitations

Current statutes hold that women "may not be assigned to duty in aircraft engaged in combat missions." Air Force has interpreted that language to exclude them from positions where there is a high risk of capture or injury because of hostile fire.

The Navy is also restricted by statute from assigning women to all but a few ships, such as harbor tugs. This limits the numbers of women it can employ. Currently, the Navy has only 24,000 females in uniform, and plans call for just 30,200 by FY '82. However, that service is pressing for authority to let women serve on noncombat vessels on a permanent basis and on any vessel not likely to be in combat on a temporary basis. Navy Secretary W. Graham Claytor, Jr., notes that under present rules the Naval Academy cannot even send its female midshipmen on training cruises. "It's ridiculous," Mr. Claytor declared.

The ban on women serving aboard ships also limits Marine Corps recruitment. The 190,000-member organization includes 3,000 women, and its projection for 1982 is only 7,300, or slightly more than four percent of the total force.

No law blocks the Army from sending women to combat or close to it. Rather, it is policy, based on what that service says is the "intent of Congress" that provides the curb. The Army policy excludes females from combat and from "positions where the probability of becoming a combat casualty is the greatest."

The Army, as its Assistant Secretary for Manpower, Robert L. Nelson, told Congress recently, is in no hurry to expand its women's force, now about 52,200 members, beyond its previously planned FY '82 level of 59,400. Mr. Nelson cited doubts about women's stamina, pregnancy, their inclination to revert to "traditional female skills," and other loss factors and uncertainties. "It is important that the Army know what the impact of 59,000 women will be before we program further increases in female strength levels," Mr. Nelson said.

The Cost Equation

Proponents of more rapid expansion of women in uniform point to the alarming cost of recruiting satisfactory young males. They insist that

USAF Women

Strength by Grade—October 1, 1977

	*Officers**			*Enlisted*
	Line	Medical		
Brig. Gen.	2	1	E-9	9
Colonel	2	48	E-8	30
Lt. Col.	40	254	E-7	97
Major	86	643	E-6	202
Captain	615	1,237	E-5	2,287
1st Lt.	574	970	E-4	11,365
2d Lt.	595	301	E-3	11,941
	1,914	3,454	E-2	4,707
			E-1	3,948
				34,586

* *Air Force also has five female chaplains and eight women JAGs. Except for one JAG major, all are captains.*

There has been little change in these grade breakouts since a similar chart appeared in the October 1976 issue of AIR FORCE. Officials believe that the numbers of women line officers in the senior grades will significantly increase with the passage of time and expected retention which will move sizable numbers of female company graders into contention for field-grade rank. Although the results from the enlisted promotion system vary from cycle to cycle, enlisted women are now being promoted to E-8 and secondary zone E-4 faster than men, are equal to E-9 and E-7, but trail to E-5 and E-6. Look for these advancements to equal the men's as soon as the women accrue more seniority, officials say.

Twice As Many

Present plans call for Air Force to increase its female personnel strength from about 40,000 now to 81,300 by FY '83. The breakdown by category follows:

	Oct. 1, 1977	*Oct. 1, 1983*
Enlisted	34,586	72,200
Line Officer	1,914	4,950
Medical Services Officer	3,454	4,150
	39,954	81,300

ample numbers of bright young women are available—and at big savings. A Defense Department study prepared last year for Secretary Harold Brown said the cost of recruiting a "high quality" male recruit (high school diploma) ranges from $870 in the Air Force to $3,700 in the Army. This, the report continues, compares with a mere $150 to recruit a high-quality woman for any of the services. But some Air Force officials don't buy these figures, claiming they haven't been validated.

The report, nevertheless, has excited some influential officials in the Pentagon who are alarmed at rising military personnel costs generally. [illegible] gests enormous dollar savings are available simply by going for more women and fewer men.

But maybe not. An internal Air Force examination indicates the costs for Air Force women in terms of facilities, dependency, and personnel turnover may equal or exceed those for men. There seems little doubt, however, that more women members means fewer AWOLs, fewer troublemakers, and less time lost for alcohol and drug abuse. According to a Navy report, the time lost for all causes among servicewomen, including pregnancies, is "only about half as much as men." To get a better handle on the lost time issue, Defense has asked the services to take new looks at the situation and report back.

Another plus for more women in service is that they beat the men on first-term reenlistments. In the Air Force, 26.3 percent of the distaff first-termers who entered service in FY '72 re-upped. The men's rate was 22.4 percent. Among the 1971 and 1973 USAF accessions, women also prevailed. But among second-termers, recent Air Force figures show the men in front, 71.8 percent to 53.5 percent.

A Brookings Institution study titled "Women and the Military" echoes the big women's build-up theme. The study, authored by two USAF officers, retired Col. Martin Binkin and Lt. Col. Shirley J. Bach, now Special Assistant to Secretary Chayes, holds that under present assignment curbs, about 36,000 USAF officer jobs, or forty percent of the total, are closed to female officers. On the enlisted side, only 31,000 positions, or about six percent of the total, are closed because of combat-related restrictions.

Allowing for posts not considered [illegible] some 363,000 Air Force jobs could be filled by women or men, according to the Binkin-Bach report. But the fact that Air Force "plans call for only about one in every eight [now seven] to be filled by a woman" in the next five years led them to write:

"It can only be concluded that either the Air Force is unable to attract enough qualified women or that the sex composition of the Air Force is shaped largely by the Air Force's preference to remain a predominantly male institution and by its ability to attract a sufficient number of qualified males."

Male officers, though not saying so publicly, definitely prefer their service to remain a predominantly male institution. So, undoubtedly, does the majority of the public despite the increasing momentum of the women's movement country-wide.

Solution or Illusion?

In actuality, it may be premature to consider a truly "open-door" job policy. For there is no assurance the service can achieve its combined FY '78 and FY '79 women's recruiting target of 26,400, half of whom would qualify for and be assigned to nontraditional women's career fields. Remember, with earlier and much smaller distaff recruiting targets, Air Force came up short in the nontraditional areas.

The Hq. USAF Office of the Deputy Chief of Staff for Personnel recently examined government statistics to determine the size and composition of young persons entering the labor market. Officials studied high school senior test results, the attitudes of youths toward military service, and related data. They found that:

- Female high school students have much lower aptitudes than their male contemporaries in the areas where USAF has its largest requirements. For example, in 1975 only seven percent of the 409,000 female high school students tested met the mechanical aptitude level required by the Air Force. By comparison, fifty-five percent of 491,000 male students attained it.
- In the very-important-to-the-Air Force electronic aptitude phase twenty-one percent of the males [illegible] of the females. The authorization found that in the worst case situation, to secure 1,000 qualified recruits USAF must consider 2,541 men or 10,181 women.
- On the officer side, the relative overall availability of college graduates in 1975 was fifty-five percent men, forty-five percent women. It was also determined that for every female, three males respond to national advertising regarding commissioned status. Furthermore, most of the women's degrees were not in the scientific and technical disciplines where Air Force's needs predominate.

The DCS/Personnel examination after considering these and other factors that go into developing personnel procurement goals, held that "the recruiting cost advantage for women which most studies cite is very questionable." Since Defense Department officials disagree with this analysis some sparks could fly.

In any event, the year ahead—as the female recruiting drive shifts into high gear and the demands for greater use of women in uniform intensify—should be a lively one.

In addition to Warsaw Pact military forces that are growing in both size and capability, NATO now faces an insidious growth that could undermine its very foundation . . .

Eurocommunism

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

THE mail brought a letter the other day from the president of one of our celebrated think tanks. Among other things, he was concerned with the internal peril to NATO from Eurocommunism. It is a valid worry and not without a certain irony. NATO, after all these years of maintaining a steadfast watch against military aggression, now finds its foundations threatened by political termites.

The very name Eurocommunism is a beguiling one, meant to convey a sense of nationalism, and hence of independence from Moscow. In France, the Eurocommunists had formed, until recently, an uneasy union of the left with the Socialists of François Mitterand. If they can somehow rebuild the alliance before the March elections, there is a good chance we will see Communist members of a French government. In Italy, the Communist party got thirty-four percent of the vote in June 1976. While they presently hold no cabinet posts, they are plainly in a strong position in that troubled land.

It seems only yesterday that Franco died, and Spain was set on a new course. One of the objectives in that course seemed to be membership in NATO, something the United States has pushed for years. The European NATO members have been unwilling to entertain the idea until Spain overhauled its political structure to give it an acceptably democratic look. Well, the Spanish have done just that. They are now so democratic that they have a thriving new Communist party with 100,000 members. Señor Santiago Carillo has returned to Madrid from exile in Paris to take command. Sr. Carillo is one of the new breed of Eurocommunists and thus is out of favor in Moscow, but an old Moscow favorite has also returned to Madrid. She is Dolores Ibarruri (La Pasionaria) of the Spanish Civil War, whose return was celebrated by a concert featuring our own Joan Baez. There are other Eurocommunist parties in the Benelux countries, but thus far they are insignificant. And in Portugal there remains the hard-line Communist Party of Mr. Cunhal, still fiercely loyal to Moscow and with fifteen percent of the electorate.

In many ways the Eurocommunist parties appear to be more or less what they claim to be—Communists divorced from Soviet control in the manner of Yugoslavia. Still, there remains a distinctly Soviet bias in their views on European security. None of the Eurocommunist leaders sees any danger of Soviet military aggression. The Frenchman, Marchais, takes a General de Gaulle approach to NATO: Stay in the political alliance, but aloof from any military cooperation. The Italian, Berlinguer, is willing to remain in NATO but with tongue in cheek: NATO, in his view, faces an imaginary enemy. The Spaniard, Carillo, is firmly opposed to Spain's entry into NATO because there is no Soviet menace to Europe. Since all of these gentlemen possess valid credentials as political powers, they are disturbing factors in any assessment of Western Europe's, and hence of NATO's, future.

Thirty years ago, the Soviets began to make trouble in Berlin. Our response, the Berlin Airlift, was a logistics masterpiece, but it solved nothing in the way of European security. The fact that the Soviets allowed that vulnerable operation to go on unmolested was a tribute to our strategic supremacy. The B-29s stationed in the UK were the world's only nuclear weapon delivery systems. Meanwhile, the Soviet conventional superiority was equally one-sided. Short of a massive American nuclear reaction to any Soviet aggression, there was no credible defense for Western Europe. It was in these circumstances that NATO was born.

In the early years of the Alliance there was no serious worry about a Soviet attack. The real threat was a fear of political instability and the resultant spread of communism, and hence Soviet influence, through Western Europe. It was the main job of NATO to provide a sense of security that would in turn create stability for a rebuilding Europe. The twenty-nine years since the signing of the North Atlantic Treaty have been the most stable and prosperous in modern European history. Even the revisionist historians, who view the Cold War and the East-West confrontation in Europe as American engineered, can scarcely deny that.

Now, as NATO nears the end of its third decade, there is this new cloud on the horizon. Apologists for regional communism say it is simply a result of social and political evolution. National interests will stand in the way of a sellout to the Soviets. Eurocommunism, say its proponents, is in the tradition of the democratic process and will simply reflect the will of the voters.

Part of that argument may well be true. These Eurocommunists are in fact relying on the normal political processes instead of revolution in their reach for power. After they gain power, if they do, we can expect somewhat different behavior. Traditionally, Communist governments do not allow themselves to be voted out or otherwise restrained by the democratic process. What is more, nationally oriented European Communist governments, like Hungary's or that of Czechoslovakia, have, on the whole, given way in time to Soviet-dominated ones.

The perceived threat of communism and the accompanying Soviet domination has been the great stimulus for Western Europe in the post-war years, and NATO has been its visible symbol. Now, there is this insidious growth, Eurocommunism, threatening the very basis of the Western Alliance. For even if these new Communists agree to NATO membership, how effective can that be if they see no Soviet threat? ■

In September 1977, eighteen A-7Ds of the 140th Tac Fighter Wing, ANG, deployed to the Netherlands, forming a composite wing with the 316 Squadron of the RNAF to participate in NATO exercises. According to reports, no other USAF unit has integrated as completely with a NATO counterpart as in this successful experiment.

Wings Over Windmills

BY ED MACK MILLER

Above, along with the tulip, the universally recognized symbol of the Netherlands—the ubiquitous windmill. Left, at Gilze-Rijen, a Dutch soldier salutes the coequal flags of the United States and the host country.

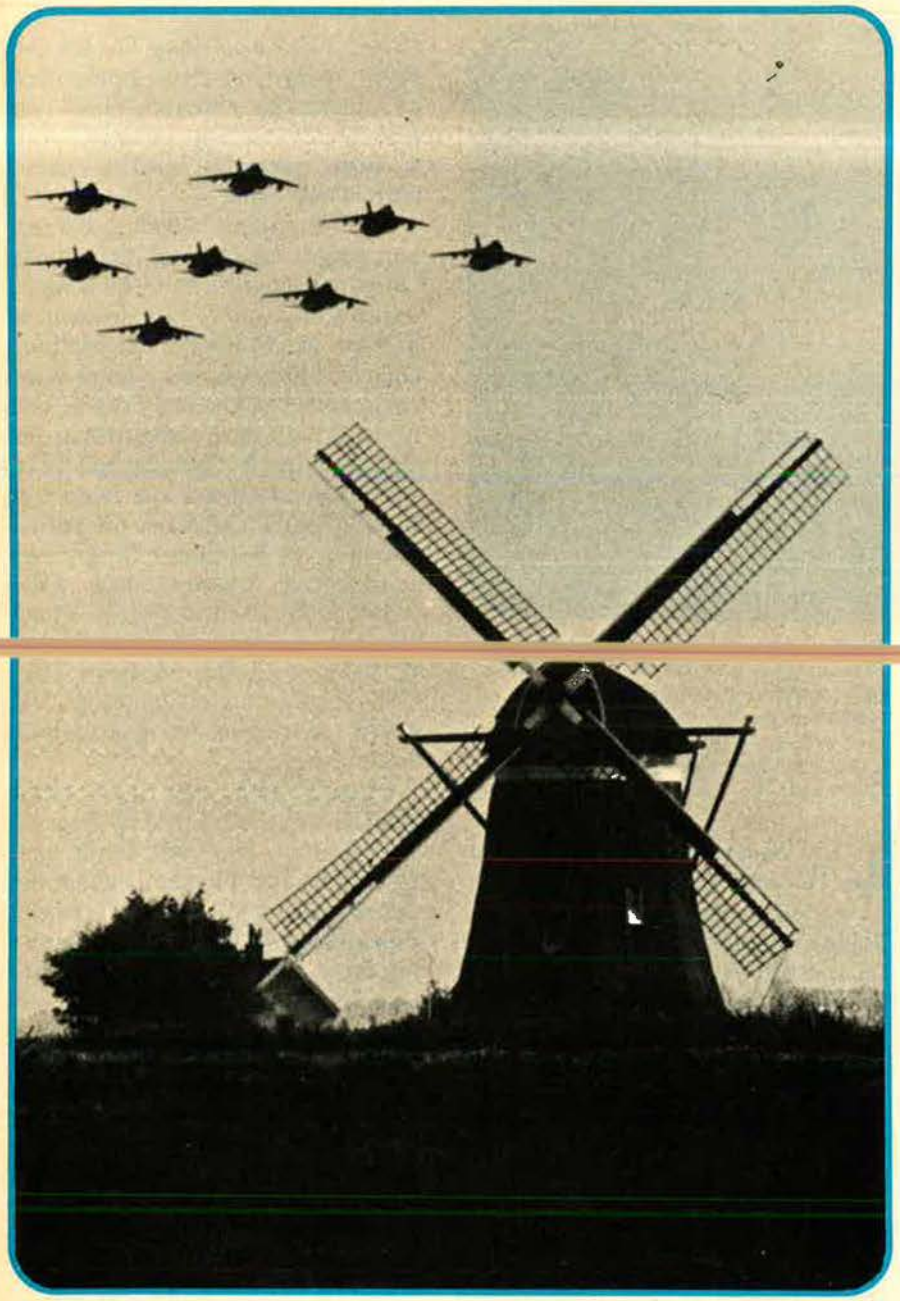
LAST September 6, eighteen Air National Guard A-7D Corsair II tactical fighters, led by Brig. Gen. John L. France, landed at Holland's Gilze-Rijen Air Base. With six air refuelings, they had flown nonstop from Rickenbacker AFB, Ohio, to become the first US tactical aircraft deployed to the Netherlands for a NATO exercise called "Reforger-Cold Fire." Thirteen hours after landing, they were flying checkout sorties.

In the three weeks of concentrated flying that followed, they answered the question: Can American citizen-airmen, who in civilian life are just about everything from accountants to supermarket checkers, blend with their Dutch Air Force hosts to form a single, powerful NATO defense unit? They can.

The Americans, including 300 support people (eighteen of them female Guard-persons) flown in on Military Airlift Command C-141s, were members of the Colorado Air National Guard's 140th Tactical Fighter Wing, commanded by General France. Two of the Wing's three squadrons are assigned to the New Mexico and Texas Air National Guard, the latter unit flying F-100Ds and hence not participating in the September deployment, code-named CORONET ANTE. Colorado's 120th Tactical Fighter Squadron, commanded by Lt. Col. Robert A. Flick, and New Mexico's 188th TFS, led by Lt. Col. James W. Van Scyoc, each provided nine Corsairs for the exercise.

Though both units have distinguished active-duty records from the Korean War, the 1961 Berlin confrontation, and Vietnam, neither had "interfaced" with a NATO tactical organization to form a single operating force. Complicating the interface task were the facts that the Dutch and Americans flew different aircraft and were accustomed to dissimilar flying terrains. Equipment differences extended to such areas as fuel and ordnance fittings.

The Gilze-Rijen base itself caused some initial confusion. It really is two bases some six miles apart—one a flying field, the other the "bedroom." It was designed that way by



Air National Guardsmen flying A-7Ds arrive in Holland after a nonstop flight from Rickenbacker AFB, Ohio.

the Germans in World War II to separate the aerodrome from the billeting area so bombing wouldn't get both planes and pilots, or vice versa. The two areas once were connected by a rapid-transit minirailroad, unfortunately no longer in service. Both areas are heavily wooded, with "tangle-town" streets. Most of the Guard members were billeted at Princebosch ("The Prince's Forest"), some distance from the field. For the first few days all you could see was Americans stopping the bicycling Dutch to ask directions.

Despite these complications, the Dutch and Americans hit it off famously from the first. Two explanations stand out: Nearly all the Dutch personnel speak English, and everyone from both nations gave the exercise "his best shot." The Dutch, for example, realizing their typical breakfast of cheese and blood sausage wouldn't set the US troops up too nicely for a hard day, sent cooks to a US NATO installation, Soesterberg Air Base near Utrecht, Holland, for on-the-job training in cooking ham and eggs.

It was that way up and down the line. As Lt. Col. David L. Quinlan, Deputy Commander for Operations of New Mexico's 150th Tactical Fighter Group, to which the 188th TFS belongs, put it: "The Dutch were terrific. Whatever we needed they got for us—right now. In fact they almost had a sixth sense, anticipating our needs."

The Americans got a big kick from the fact that three of the Dutch commanders spoke English with totally dissimilar accents. The Commander of Gilze-Rijen, Colonel Bob van de Spek, has a clipped British manner of speaking; his Deputy Commander, Lt. Col. Ton Lennarts, rolls his "r's

Above, a New Mexico ANG A-7D refuels during Atlantic crossing. Right, Dutch Col. Bob van der Spek with 140th TFW Commander Brig. Gen. John L. French, on the right.

like a Scotsman. The Wing Commander Flying, Lt. Col. Jeff Boudens, sounds like a Texan—and with good reason: He earned his wings at Bryan AFB, Tex., in 1953.

Tattered Targets

The good relationship between the Dutch and Americans made the military exercises smooth and productive. During the "Cold Fire" part of "Reforger," pilots flew ground-support missions anywhere from Denmark to the French border, usually in Western Germany or Holland. When "Cold Fire" ended, the Guard pilots mounted "Double-Dutch," an exercise using gunnery targets and bombing ranges on the coast in competition with Royal Netherlands Air Force pilots from Gilze-Rijen. The American Corsairs carried so much ordnance that the Dutch had to ask them to use an alternate range: "You're ruining our targets!"

When it was all over, the 140th Tactical Wing squadrons had flown 368 sorties—853 hours spread over fifteen flying days. The in-commission rate for the eighteen American aircraft was 95.8 percent for the entire operation.

One reason a Guard wing can perform so well is superior maintenance. The Guard technicians, permanently located and bringing decades of experience to the job, give an airline-like quality of maintenance that the regular establishment seldom matches, according to Guard observers. The absence of frequent changes of station also benefits the pilots. Said one Corsair pilot: "Flying together for years, they become like a small-town basketball team. They can sense where the other guy is at any time."

Guard pilots also credited the performance of the A-7Ds as a major factor in the success of the NATO exercises. Designed for close air support and interdiction missions, the plane is powered by a Rolls-Royce/Allison TF41 A-1 engine and has a maximum speed of more than 550 miles an hour at 5,000 feet. Equipped with a devastating M-61 "Vulcan" 20-mm cannon, six wing pylons, and two fuselage weapons stations, the Corsair can carry more than seven tons of payload, including almost all USAF and NATO ordnance.

"It is an exotic plane, with a fully integrated computerized navigation and weapons delivery system," says General France. "It's a black-box airplane, but easy to maintain." With its inertial navigation system, a "[illegible] display for both target direction and instrument landings, and a "moving-map display" that shows the pilot his exact position over the ground, "the A-7D is the best airplane I have ever flown."

New Perspectives

The US airmen came home with a high opinion of NATO resolve. "There is no game playing in these exercises," according to Col. William H. Neuens, Director of Operations of the 140th and a Denver-based United Airlines DC-8 captain in civilian life. "The Dutch are very serious about the defense of their country. They won't be caught unawares if the Warsaw Pact people try to overrun free Europe. They remember too well what the Nazis did when they fire-bombed Rotterdam and destroyed the dykes, flooding much of the country. They are tough, they are ready, and they will fight."

Some of the US officers were concerned about the Dutch military "unions," but the facts of the matter proved the organizations to be more "societies" than US-type trade unions. The big difference is that the Dutch unions are not allowed to strike, which, as one Guardsman noted, "makes them more like a college fraternity. They can try to influence opinion, but they have no real muscle."

The much publicized long hair permitted in the Dutch forces didn't prove to be earth shattering, either. Not many of the regulars wore long hair. You could tell who was a conscript, drafted for eighteen months, from the way he wore his uniform. But one Dutchman summed it up: "If the Russians come, don't fool yourselves. These young men will fight, and fight well. There is a saying, 'God made the world, but the Dutch made Holland.' Much of our country is reclaimed from the sea—much more protected from the sea by hard labor. We love this country, and we'll fight for it."

At the time of the A-7 deployment, more than thirty Air Guard members from five states also flew to Germany in Operation "Coronet Flush," also part of the "Reforger" exercise. Guardsmen from Colorado, Georgia, Nebraska, New Mexico, and Wyoming joined forces as part of the 140th Communications Flight (Support) commanded by Lt. Col. William Morris, to provide a high frequency single sideband network for flying units, and AUTODIN, switchboard, and UHF communications support during their stay at Baden-Söllingen, a Canadian base in West Germany.

Everything was not work for the Guardsmen, however. On weekends —because the Dutch military doesn't work then (they have an excellent alert system and can get their troops back quickly)—the Americans took the opportunity to see Europe—from Rome to Copenhagen . . . down the Rhine . . . Amsterdam and Rotterdam . . . Paris, and London. Some (including the writer) attended the opening of the Dutch Parliament to see Queen Juliana arrive in her golden coach, others went to [illegible] hem to observe the thirty-third anniversary of the US-British airborne operation, recently dramatized in the movie "A Bridge Too Far." Above all, they liked Holland ("no litter anyplace but in the big cities"), its chocolate, Delft china, and "cheap" diamonds.

A Very Good Team

A "Get in touch with the Dutch" people-to-people program was a great success. It kicked off with a "Mexicaans Feest," put on by the 140th for their Dutch opposite numbers and people from Gilze, Rijen and other nearby towns. Nearly twice the number anticipated showed up. The Colorado Guard furnished

Ed Mack Miller, a retired United Airlines 747 Training Captain and former narrator for the Colorado Air National Guard's Minute Men jet demonstration team, has had published some 1,900 articles, stories, and columns, and six books. He accompanied the 140th Tactical Fighter Wing to the Netherlands as a correspondent. He has been a frequent contributor to AIR FORCE Magazine.

steaks (nearly a half ton) and the New Mexico unit showed what could be done with tacos, enchiladas, burritos, jalapena peppers, and guacamole salad. The Dutch, who like Indonesian food because of their own ties with Southeast Asia (Holland is full of Chinese and Indonesian restaurants), loved it.

The American pilots, who like to think of themselves as hard-drinking, hard-nosed jocks, were a little wide-eyed when the Dutch showed them a final "fighter-pilot party" in which they even burned the club piano.

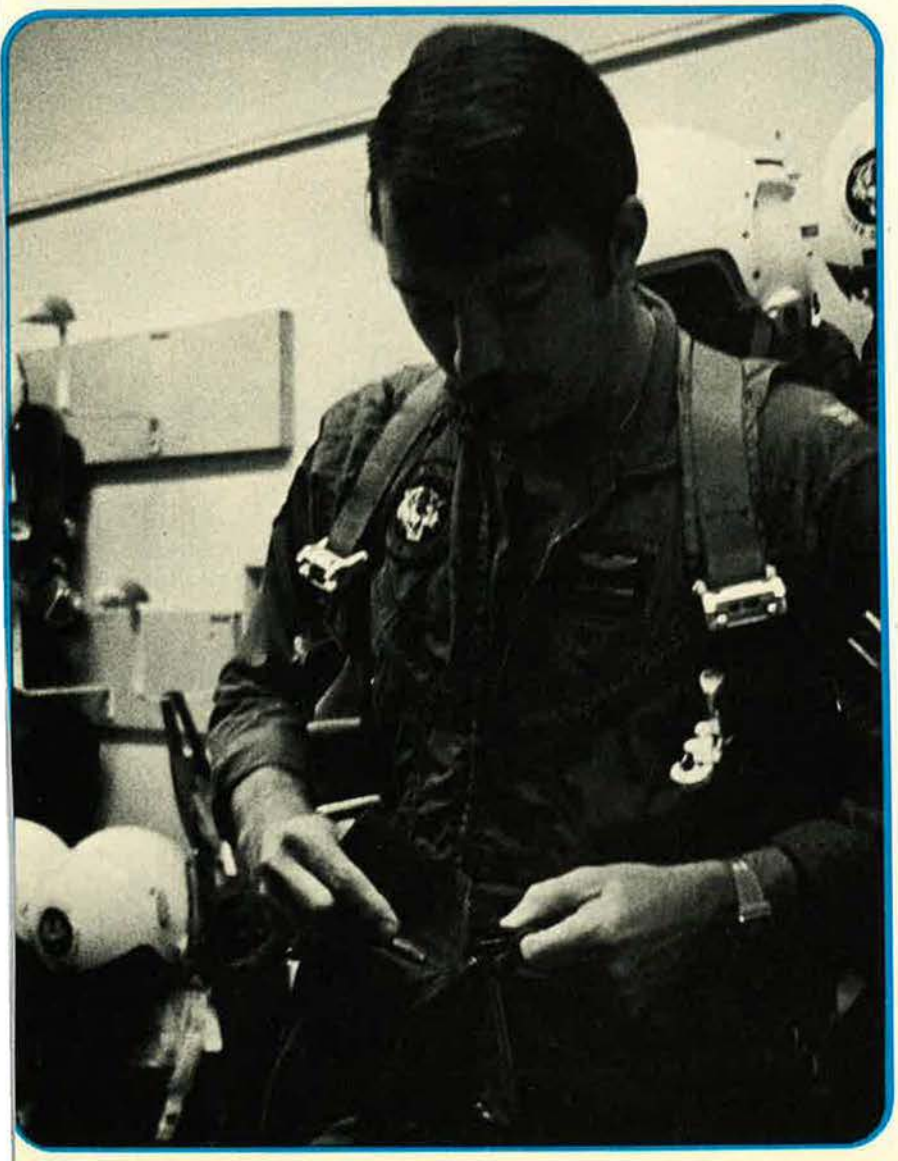
To toast the Dutch hospitality to the Guardsmen, the US Air Force band came over from Ramstein AB to play a concert in front of the town hall in Rijen, and also a dance engagement at the NCO Club. " 'In the Mood!' " exulted the Burgemeester, Mr. P. G. Ballings, "my favorite Glenn Miller song."

Earlier, in a ceremony at the base, Burgemeester Ballings had christened General France's A-7D *The Speedwell,* in commemoration of the ship in which the Pilgrims had sailed from Delfshaven, Holland, to Southampton, England, before boarding the *Mayflower* for their voyage to the New World.

As the troops packed up the C-141 pallets to go home, there was true emotion on both sides, and much trading of souvenirs from Guard baseball hats to cowboy paraphernalia for Dutch insignia, uniform patches, and even wooden shoes.

Colonel van der Spek summed up the good feeling and sense of accomplishment: "During the weeks we have been operating together, we learned to know your wing as highly professional, fully combat-ready, and highly motivated."

"All in all," said the Dutch papers and newscasts, "the Dutch and the Americans make a very good team in the air and on the ground." ■



Capt. Scott Stewart of the Colorado Air Guard suits up for a "Cold Fire" training mission at Gilze-Rijen.

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RAYTHEON

Perspective
Comment & Opinion

By Capt. Richard Bigelow, AIR COMMAND AND STAFF COLLEGE

On Nuclear Warfare

The recent article by Richard Pipes in the September 1977 issue of AIR FORCE Magazine, entitled "Why the Soviet Union Thinks It Could Fight and Win a Nuclear War," is an excellent, thought-provoking evaluation of differing Soviet-American perceptions of nuclear warfare. Although I initially read Professor Pipes's article in *Commentary* magazine, it wasn't until I reread it in your magazine that I noticed something quite misleading about his use of the term "mutual deterrence."

Professor Pipes states on page 57 three lines from the bottom of the page): "At this point, massive retaliation ceased to make much sense and before long yielded to the *doctrine* of 'mutual deterrence.'" Further along (approximately in the middle of page 59) he states, "Whether mutual deterrence deserves the name of a *strategy* at all is a real question." (Emphasis added in both quotes.)

It's possible to draw one of two conclusions at this point regarding Professor Pipes's use of the term "mutual deterrence." Either he believes mutual deterrence serves as *both* a strategy and a doctrine, or he believes the terms "strategy" and "doctrine" are equivalent and can thus be used interchangeably. Given his qualifications it's difficult to imagine that he would view the two terms as being interchangeable. One must assume that to Professor Pipes "mutual deterrence" is both doctrine and a strategy.

Rather than venture into a long dissertation centering on appropriate definitions of "strategy" and "doctrine," I would simply like to make the point that from my perspective "mutual deterrence" is *either* a strategy nor a doctrine—and was never intended to be either one. The definitions are simply not compatible. It seems far more likely that "deterrence" serves in the capacity of a national security objective, goal, or policy (I could easily be persuaded it was any one of the three). I look upon it as the *end* to be achieved, whereas strategy—and its supporting sister, doctrine—represents the *means* to achieve the end, whether it be total victory or preservation of the *status quo*.

Subsequent contradiction of terms also detracts somewhat from Professor Pipes's arguments. To support his statement, "Whether mutual deterrence deserves the name of a strategy at all is a real question," he quotes a passage condemning the strategy of assured destruction. It becomes obvious at this point that he views the terms "mutual deterrence" and "assured destruction" as being interchangeable. Once again, I won't spend time citing definitions but simply make the point that these two terms are not synonymous and cannot be used interchangeably. It is not Professor Pipes's basic argument that I question: I don't view "mutual deterrence" as a strategy either. I merely submit that his support is faulty since "mutual deterrence" and "assured destruction" aren't synonymous.

Perhaps the major criticism I have with the article should not be directed at Professor Pipes so much as to the author of the referenced paragraph on the strategy of assured destruction. To quote from that passage (page 59): "Unlike any strategy that ever preceded it throughout the history of armed conflict, it [assured destruction] ceased to be useful precisely where military strategy is supposed to come into effect: at the edge of war. It posited that the principal mission of the US military under conditions of ongoing nuclear operations against [the continental United States] was to shut its eyes, grit its teeth, and reflexively unleash an indiscriminate and simultaneous reprisal against all Soviet aim points on a preestablished target list." From my study of the evolution of US nuclear strategies, it seems that since the time of President Kennedy, "assured destruction" per se was *not* our total military strategy, but rather one of the *options*—the most massive to be sure—contained within our overall nuclear strategy. Since the time of flexible response and on through to the present, the US has paid a great deal of attention to developing alternatives to "unleashing an indiscriminate and simultaneous reprisal." And we have succeeded to a far greater degree than the quoted passage indicates.

As I mentioned in the opening paragraph, I consider Professor Pipes's article a very thought-provoking piece of literature. I completely agree with his conclusion that "unilateral deterrence is feasible only if we understand the Soviet war-winning strategy and make it impossible for them to succeed." I question, however, whether US actions actually are in consonance with "unilateral deterrence." Since the early 1960s, when the US enjoyed a relative nuclear superiority, our answer to Soviet nuclear force buildups has been to "redefine the relationship"—from nuclear superiority in the early '60s to "rough equivalence" today. Sooner or later we're going to run out of ways of redefining the problem and relationship. Maybe when that day comes, someone will have the guts to admit we've "redefined our way right into second-place." ■

HOW TO SHARE YOUR PERSPECTIVE

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

What They're Saying...

C³ Systems: The Efficiency Connection

From an address to the 39th Military Operations Research Society Symposium, June 29, 1977, by Maj. Gen. Jasper A. Welch, Jr., Assistant Chief of Staff/Studies and Analysis, Hq., US Air Force.

I want to turn to the question of how to analyze command control and communications (C³). Also, concerning what we call C³I, to include information systems, I would like to talk about three issues.

The first is, if you set out to find a perfect C³I system, how would you recognize it if you saw it? The second is what I think are the essential structures of a perfect C³I system. The third, in the context of that perfect C³I structure, what are aircraft for? . . .

Criteria for a Perfect C³I System

What *are* the criteria for a perfect C³I system? I would like to talk about seventeen of them. But I do not think they are equally important, so I would like to try to distinguish them in order of importance.

I think that the *first criterion* for a C³I system is to *preserve the order and cohesiveness of our own forces.* Each individual commander has that as his primary responsibility. . . .

Cohesiveness is the prerequisite to survival and to all other organized activities. . . . Maintaining positive cohesiveness requires positive action. . . .

Maintaining cohesion insures that, as a minimum, the forces remain an ordered whole and capable of attack or retreat—whichever turns out to be the best idea. Failure to maintain cohesion results in a mob capable only of surrender.

The *second criterion* is to *avoid blunders and insure freedom of action.* This is the prerequisite to preventing a situation from which there can be no subsequent recovery. . . . Put another way, blunders must be avoided in order to maintain the ability to fight in the time and place of the commander's own choosing later on.

A commander's desire first and foremost is to control the rate of engagement. The most important control is to preserve the option of breaking off the engagement if the exchange rate does not turn out to be favorable. . . .

This desire is such a powerful influence that when one observes what actual armies do in the field, one observes that much of the movement of maneuver units is associated with finding another place to be—not going into battle. . . .

Retreat, or, more accurately, disengagement, actually turns out to be a good idea in many cases. If you do not retreat but merely surrender, then you can never go to battle again. . . .

The *third criterion* is to *insure a non-zero effectiveness.* . . . A non-zero effectiveness is the prerequisite to win-

—which were prerequisites to avoid defeat. . . .

The *next criterion* ranks somewhere between *fourth* place and *seventeenth* place. I rather prefer seventeenth. I would call it *insuring efficiency or optimization.* This has to do with things [like] . . . optimal allocation, optimal strategies, optimal force structure, and so forth. I think that those matters are the least important functions of the C³I structure.

The trouble with efficiency is that it is concerned with choices at the margins. Given the uncertainty about opposing capabilities and intensions and, indeed, our own capabilities and intentions; the likelihood of deception and jamming; and the likelihood of damage, disruption, and dislocation due to enemy action, optimal control is unlikely to be implemented in any case.

Efficiency is only important if you are in a narrow duel by very tightly constrained rules. . . . But real battles are rarely conducted according to narrowly constrained rules or won by small margins. . . .

Most of our expertise and effort goes into analysis for optimization and efficiency. By trying to apply such techniques to analyze C³I systems, I think we have been making a terrible mistake. . . .

I think the things we should work on are the questions related to the three criteria: (1) how does the system help to maintain cohesion against the forces of chaos; (2) how does it help to prevent or mitigate blunders, and (3) how does it help to achieve a non-zero effectiveness?

If you . . . start asking field commanders about C³I, you will often find them responding in terms of pure communications problems, not the grander concepts that go with C³I. There are, I think, two good reasons. First, communications are essential for cohesion—my first criterion. Second, telecommunication is a superhuman activity.

You see, computer aids to decision making (having to do with optimization) are a help; but they are a help to a human activity, which we all, in principle, can do; namely, make decisions and choose to go one way or another. But there is a thing that a human cannot do by his own human resources, and that is to telecommunicate. . . . Without communication, one really cannot maintain cohesion in the face of dynamic events.

The other big thing that you will find commanders very talkative about is called "target acquisition." And the reason, in our context: it permits a non-zero effectiveness. You really should have something to shoot at.

These are just two very simple examples of how to relate the pragmatic existential world of the field commander to the esoteric, but powerful, theoretical

Structures in C³I Systems

Now, to go on to the second part which has to do with some of the structures of a good C³I. Let us start with questions of the following sort: What are the sources of information, what are the sinks for information? How important is the information, how do we handle it and how quickly must the system respond?

There are, of course, two sources and sinks: our own forces and the opposing forces. We rarely think of information sinks as explicitly as we do about sources. Let me illustrate the result.

I am currently in the process of dispelling what I think is a myth. The myth says that once a piece of information has been collected from nature and put on a disc file somewhere, that the cheapest way to get it someplace else is to go ask, through administrative channels, what was already recorded. . . .

It really is a lot cheaper in many cases to re-collect that information from nature again. At any rate, the alternative should always be considered in the system design trade-offs. Efficiently disposing of "waste information" looms as a useful activity!

Since commanders have to take positive actions to insure cohesion and avoid blunders and insure non-zero effectiv

ss, they have to have it, and have it a timely manner—but what is it?

One of the things that we are wrestling with is the question of what *is* relevant information. And "more" is not always better than "less," as we all know.

One of the things which I find most interesting is a notion which many of us learned from game theory: no matter how bad things are, there is always a best thing to do. . . . It may be poor, but it is the best thing to do.

There is a corollary to that in communications: no matter how narrow the bandwidth is, there is always a best message to send.

Indeed, one of the ways in which blunders occur and one of the ways in which C³I systems increase the number of blunders rather than decrease them is to con people into thinking there is a great big message channel—when there is not. As a result, they try to send a long, complicated, and otherwise useful message—except for one small problem: It doesn't get there. And they foreclose . . . upon sending the shorter, terser, more cryptic, but nonetheless more crucial short message which could get through. . . .

We need to learn how, in a facile way, to have a new kind of filter—a filter that will adapt to the existing bandwidth (reduced by jamming) and be capable of selecting and excluding nice-to-know information as the system capability degrades.

You hear a lot in the C³I world about filtering and a lot about fusion. I think one of the biggest problems about fusion of data is inattention to a simple rule: If you want to bring diverse information together and have it make sense, you have to have some understanding of what is going on. . . .

And if you think that you can write a prescription for the software for a command and control system, which is, after all, supposed to control combat, then you had better find somebody who knows a little about combat. This simple rule is often overlooked, because the software people have convinced us that they can do anything if only you supply enough money. Fortunately, or unfortunately, we have never found out how to supply enough money.

[So much for the question of relevance.]

I would like to call your attention, on the question of timeliness, to a recent theory that has been developed very nicely by [retired Air Force Col.] John Boyd. . . . The basic notion is that any organism or organization has, as it were, an essential nervous system. This nervous system has a critical time to observe, process, decide, and respond. This being so, one combatant can in fact get a tremendous edge on the other by being able to operate quicker than his critical response time of his opponent. . . .

To my mind, [this] provides an important measure of how fast we need to process and disseminate information, and to act on it. Boyd points out that it is a *relative* matter, and we should key our requirements to our opponent's reaction time.

This observation is both a boon and a regret. Many people will not be happy because it makes them beholden to the intelligence people—and they, like analysts, often "know things that aren't true."

What Are Aircraft For?

Now to turn (in Boyd's context) to an appreciation of what airplanes are all about. . . . It is useful, to me at any rate, to distinguish between military forces which are primarily sitters and military forces which are primarily movers. . . . In the air-land combined arms campaign . . . ground forces are sitters. They can move but, in comparison, move rather slowly. But they are capable of maintaining battlefield presence.

On the other hand, air forces are movers—they can concentrate quickly, they can be quickly diverted to engage opposing forces almost anywhere. (However, air forces do a lousy job of hanging around for very long waiting for something to happen.) I have come to believe that the sitter/mover distinction is a very, very great distinction.

There is another way to look at that; and that is, you can say that a combined arms operation has a high-frequency and a low-frequency component. The low-frequency component is characteristic of the ground forces. It is here that massive forces engage and the quantitative defeat of the opposing armies takes place. But such defeat requires enough time, killing time, because most of the firepower is rate-limited, particularly when you are the "institutional defender". . . .

The Blitzkrieg works when the Blitzkrieger's local massing exceeds the capability of the Blitzkriegee's available fire-rate-limited forces. This is the essential idea of the breakthrough phase of the Blitzkrieg. Breakthroughs fail if the [defender's] fire-rate is high enough, or the killing time is prolonged. . . .

The high-frequency component of combined arms warfare resides in those things which have a high lateral mobility. Some ground forces and most air forces are in that category. It is here that the qualitative defeat of the opposing army's plan—not the army, but the army's plan—can take place. The air force can strike units behind the lines to delay and disrupt as well as to extract attrition.

This combined arms synergism occurs when the air forces delay and disrupt so as to reduce the stress on the friendly ground forces, permit a longer time for maneuver, prolong the killing time for fire-rate-limited forces, and increase the fire-rate locally by concentrating air forces laterally. Thus, the high-frequency component can qualitatively alter the character of the Blitzkrieg.

The Soviet game plan is very much dependent upon the very preplanned Blitzkrieg operation. The essential character of the Blitzkrieg can be called "momentum". . . . With enough delay and disruption, you meter the flow of enemy weaponry so that the army can finally win. Remember, it takes the army to finally win.

Summing Up

To sum up, in all of our talk about C³I we are really talking about *controlling combat*. Therefore, to analyze C³I we must first get to understand military operations in our bones. I have some advice for those of you who, like myself, have no direct combat experience, are unlikely to ever have any direct combat experience—and would do terribly if they ever let us near it.

I do very much encourage you to talk to people who have been there. And to read books about people who have been there. I would, for example, highly recommend John Keegan's book, *The Face of Battle*. . . . Most accounts of combat will not make sense—even when you *talk* to people. But try to *make* it make sense. Somewhere in all the hay, there's a pony.

But, seriously, combat is of men and machines and motives, and you need to understand all of them. And once you have gotten to that point, then you need—for *this* country and *this* 20th Century—even *more*. For us, we have to learn how to *deter* combat. . . .

Deterrence has many faces. For the United States and the Atlantic Alliance, it means military capability that seeks to put peace as the preferred option for a potential aggressor. We cannot *make* him not go to war, but what we can do in the military is to try to put peace as his preferred option.

In order for that to be true, of course, our *capability* to deter must be visible. It must be visible to a particular set of regimes which we wish to deter from doing particular things under particular circumstances. . . .

I think that it is important to know that the Soviets, for example, view military affairs as a great big deal—intellectually, culturally, politically—in their whole government and organizational structure.

To a large extent, their long-term culture, which goes back to the Mongols, views the West as being ignoramuses in military affairs. And I think that it is extraordinarily dangerous for us to say and do things which lead them to believe that we do not understand military affairs. I do not like being viewed as a barbarian (that's their term, not mine) and so, I leave you with the challenge: Let's show 'em. ■

Some of the nation's leading experts on theater deterrence in a NATO context offered new thoughts and information at a recent AFA Symposium on what clearly is the Western world's foremost military challenge. The following is the first of two AIR FORCE Magazine reports about . . .

NATO

On the Road Toward A 'Coalition Warfare' Posture

BY EDGAR ULSAMER
SENIOR EDITOR

THE fundamental strategies and goals of the US a NATO—refined and modernized at the Lond Summit of 1977—are coalescing into a cohesive do trine based on the ability to wage *coalition warfar* —a long-term commitment to a more tightly knit and more effective alliance of NATO's fifteen member nations.

The message and meaning of coalition warfare, Gen. Alexander M. Haig, Jr., Supreme Allied Commander Europe, told the Air Force Association's National Symposium on "Theater Deterrence for the '80s," are "simply that the days are gone forever when our European allies could sit on the sidelines and watch us moving in and out of crisis situations." Today's imperative, General Haig told some 600 industry executives, civic leaders, and military personnel attending the AFA meeting in Los Angeles, Calif., on October 26–27, is concerted effort and commitment.

The commitment, the Symposium's keynote speaker, Secretary of the Air Force John C. Stetson, pointed out, must be predicated on "a two-way street. We cannot let the desire to 'buy American' completely overshadow our other political and economic needs. . . . It's clearly in our best interests to put aside parochial economic and political [concerns] to achieve the greater [goal] of mutual cooperation and military strength. It is also clear that neither we nor our allies can go it alone."

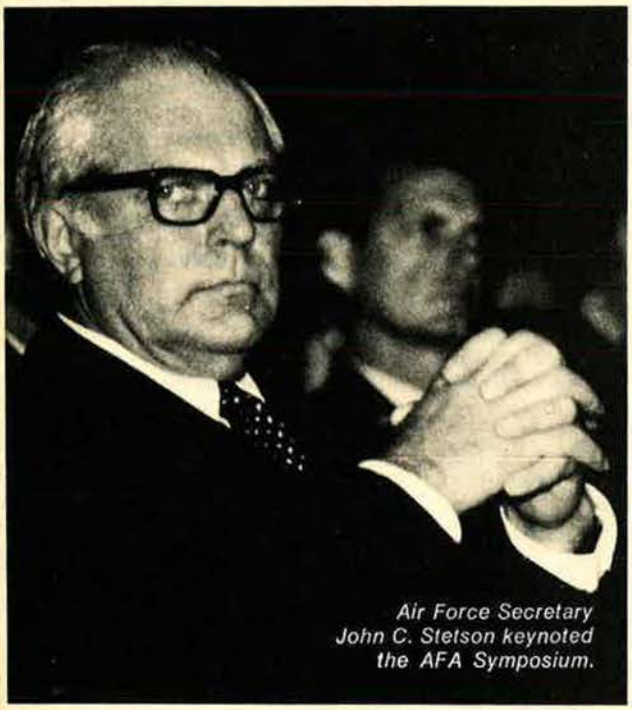
NATO's Changing Challenge

US/NATO doctrines and concerns, General Haig said have undergone profound change since the alliance's founding, induced in turn by fundamental change in the balance of US and Soviet military capabilities: "When

afford to let some of our other capabilities rest fallow As [the Soviets] reached parity in the late 1960s, w [proclaimed] a trip wire [doctrine based on our] theate nuclear superiority. Now that [the Soviets] have elimi nated that [US lead] and attained parity in theater nu clear systems [coupled with the ability to operate ove longer ranges], we have reason to worry about the tota balance."

Defense of Western Europe against the Warsaw Pact the NATO Supreme Commander told the AFA Symposium, relies on a triad concept. "Our strategy involves flexible response based on central strategi [mainly US], theater nuclear, and conventional forces No one element is independent of the other two. Th key factor is uncertainty—on the part of a potentia aggressor—about what our response would be," Gen eral Haig pointed out. "I am simply not satisfied wit our conventional capabilities," he warned.

"We in NATO," General Haig said, "are the bene ficiary of increased concern in the United States," in pa because of the increasing security challenge confrontin Western Europe. At least three major changes hav reshaped that challenge since NATO was formed mo than twenty years ago. Central here is the shift fro bipolarity to multipolarity—or international pluralism– that has fragmented the Marxist-Socialist camp int three or more centers of power: Moscow, Peking, and third element, "a group of revolutionary developin states" that the first two seek to influence and contr in a relentless contest.



Air Force Secretary John C. Stetson keynoted the AFA Symposium.

Gen. Alexander M. Haig, Jr., SACEUR, suggested that the new leaders of the People's Republic of China may be shifting toward greater "pragmatism" in their orientation toward the USSR.

Questioning the notion that Peking is moving toward genuine moderation, General Haig suggested that, instead, China's leaders—"whoever they may turn out to be"—may be shifting toward greater pragmatism, with the result that they will be less constrained by doctrinal convictions in the future and more impressed by what they perceive as strategic reality. The relevance, reliability, and consistency of the Western world, therefore, can be presumed to have direct impact on China's fundamental policies. The implications for NATO could be dramatic since the some forty-five Soviet divisions, along with supporting air and rocket forces, now situated along the Sino-Soviet border, could become available for employment against NATO, General Haig pointed out.

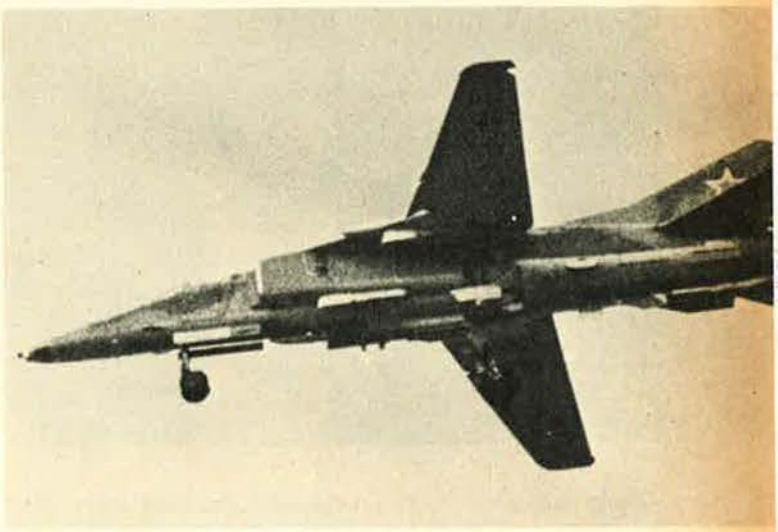
Compounding and complicating the fragmentation of Communist power, according to General Haig, is the second major change—"increasing centrifugal pressure from within those areas that are still under Soviet hegemony." Diagnosing these pressures as manifestations of both historic nationalism and unmet social and economic expectations, General Haig said exact predictions about how and when these pressures might erupt cannot be made, but "clearly these pressures will continue to grow and, again, Western solidarity, reliability, and relevance" could affect the ultimate outcome in a major way.

The third fundamental change reshaping NATO's concerns is "the dynamics of the so-called 'third world.' In the 1960s, we viewed this area with great concern . . . were inclined to think the problem was largely economic, and assumed that] if somehow we could [encourage] a more equitable distribution of wealth in those emerging societies, they would opt for moderate political solutions. But] in spite of vast economic resources pumped into those areas . . . they have, almost without exception, opted for dictatorial models on the right and the left. We must understand clearly, now and in the future, that because they are dictatorial—deprived of the moderating influences of pluralistic structures—they are going to be capable of the most precipitous shifts" in their foreign political and military orientation and alignments, General Haig said.

Russia's willingness to capitalize on discord among developing nations through arms shipments and by other means can be assumed to become the Soviet theme of the 1980s, he predicted. In this context, and that of the 1973 Middle East War, the lesson the West must learn is "that we are a collective of consumers who must concert our policies together or [we] will be exploited singly."

The Soviet Military-Industrial Complex

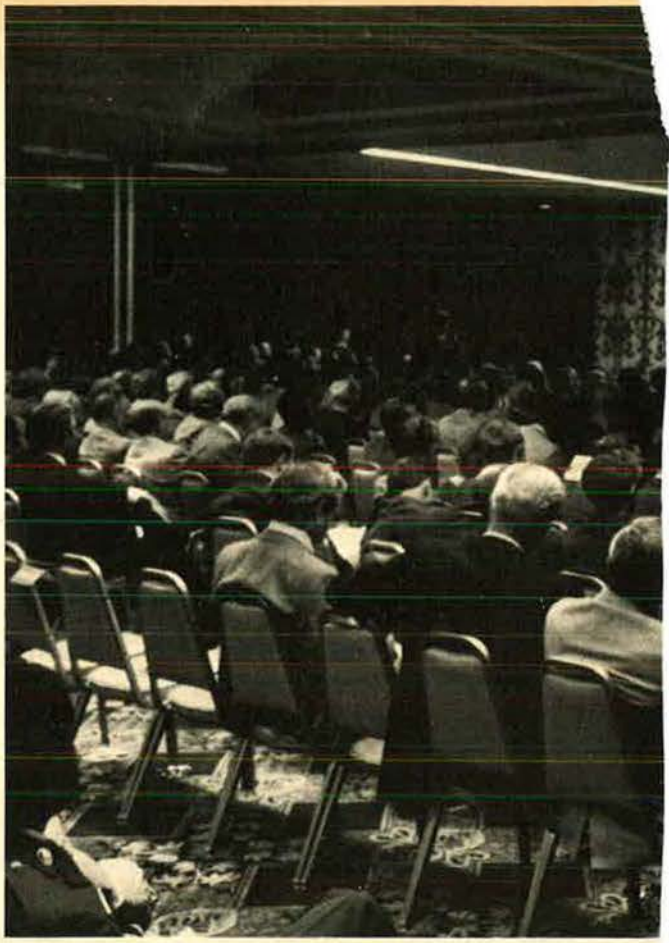
Superimposed over NATO's changed political landscape, General Haig told the AFA meeting, is "the relentless growth of sheer Soviet military power." Stressing the relative futility of predicting Soviet intentions implied by that growth, the NATO Supreme Commander said "intention can change with incumbencies and international atmospherics" from day to day. The only certainty that results from increasing Soviet military power, therefore, is higher probability of confrontation in the years ahead. This gain in military power, he said, is the "product of year-in, year-out . . . increased Soviet defense spending," whose current annual real growth is between four and five percent and which absorbs about fifteen percent of the Soviet GNP.



The long-legged MiG-23 (above) is representative of the new generation of modern fighters swelling the Soviet arsenal.

For the Western world this means a profound broadening of "the Soviet military-industrial complex and their ability to produce high-quality third-, fourth-, and soon fifth-generation equipment in increasing numbers," according to General Haig. This outpouring of Soviet military production, "contrary to what some Western analysts are saying," proceeds unswayed by trends in "corresponding Western defense expenditures," and has propelled them to a level "where they are now spewing out 1,000 modern fighters a year." By 1980, he predicted, the Soviets will have some 4,000 high-performance T-72 tanks in their inventory. This tidal wave of military productivity, General Haig said, permits the Soviets not only to strengthen their own forces—including a recent boost of 130,000 troops that would be employed against NATO's Central Region alone—but to build up large reserves of modern equipment to supply, and influence, third-world powers.

The growth of the Soviet military-industrial complex



Left: Dr. Gerald P. Dinneen, Assistant Secretary of Defense

new ways to achieve a more collegial defense" of the NATO alliance. Above: More than 600 industry executives, civic leaders, and military personnel attended the AFA Symposium.

affects the West in two other fundamental ways. The US and its allies can no longer rely on qualitative advantage to offset the Soviet Union's quantitative lead; neither can the Western powers rely on mobilization of their industrial resources in time to determine the outcome of conflict. "The next conflict indeed could be a come-as-you-are war" where only forces-in-being and production-in-being count, General Haig suggested.

A more subtle attendant change in the challenge confronting NATO, he added, is that the Soviet Union's transformation from an essentially continental, Eurasian power to one capable of global force projection has broadened the potential arena of conflict to include new economic and political threats, in addition to military concerns.

Assuming continued viable US/NATO conventional and theater nuclear deterrence capabilities, the potential for conflict in the next decade is greatest in terms of "third-world dynamics that may or may not be the result of conscious decisions by one of the superpowers."

"We must understand," General Haig reasoned, "that the need is to maintain our capabilities in Western Europe as well as our ability to project our power in a global sense—not for interventionism—but to prevent escalation of [such] conflicts to global consequences due to misunderstandings."

Compressed Warning

An alarming development with pervasive effect on NATO is the recent rapid growth of Soviet "in-place capabilities against Western Europe," General Haig warned. By increasing the immediately available armor, firepower, and logistics, and by decreasing dependence on reinforcement, the Pact forces are increasing their ability to launch a surprise attack from a standing start. The upshot, he said, is "compressed warning" for NATO. Countervailing this development, however, is the technological improvement in NATO's warning sensors that provide better and faster intelligence than in the past. The NATO Supreme Commander said that NATO's doctrine of a minimum of forty-eight hours warning remains viable even under such worst-case scenarios as an attack masked by preceding Warsaw Pact maneuvers or troop rotations.

There is considerable NATO concern, however, about the possibility of covert manpower increases in connection with troop rotations involving the airlifting of up to 130,000 Soviet ground forces twice a year. "The question always is, are they deadheading back, or are they putting in an extra 130,000 people," General Haig said.

The NATO chief, during a lively question-and-answer session, asserted that the mechanism for communicating

› NATO and within NATO the authority to use nu- ear weapons is adequate now, but will require broader se of modern command control and communications C^3) technology in the future.

The possibility that the Soviet Union has enhanced adiation weapons—the so-called neutron bombs—is ot likely to lower the nuclear threshold any more than ould deployment of these weapons by US forces in urope. "I don't see any evidence," General Haig arned, "that the Soviets *don't* have enhanced radiation eapons." Deployment of ER weapons by the US epends on a "consensus" among its NATO allies. Such n agreement is now being sought, he told the Sympo- um.

US and NATO forces are "wholly inadequate" in emical warfare defense compared to the Warsaw Pact rces, and they lag woefully behind in offensive chemi- l warfare, General Haig said. NATO is working ward improving its chemical warfare capabilities, he lded. (So far as the US is concerned, such efforts ight be short-lived, if current Administration plans for accord with the USSR on outlawing chemical war- re reach fruition. How such an accord could be veri- d is not known to Pentagon experts.)

NATO might gain in the political and economic heres from Spain's recent move toward greater align- ent with Western Europe, but militarily this change is ss significant since Madrid's military cooperation with e US already is intensive, according to General Haig. hile France has withdrawn from NATO's integrated mmand structure, it can be assumed that in the case of global crisis "French forces would be available to NATO," he suggested.

Boost in the NATO Budget

At the AFA Symposium, Dr. Gerald P. Dinneen, Assistant Secretary of Defense for Communications, Command, Control, and Intelligence, described the Carter Administration's basic defense goals: "Deterrence, not overbearing power, is what we seek. To have it we must have a credible fighting capability. In order to ensure deterrence, we plan to raise the level of US defense spending by approximately three percent a year in real terms. Our NATO allies have also pledged themselves to try to meet that goal. This NATO objective—shared by our allies in NATO—is directed at a significant improvement in the conventional portion of theater deterrence for the '80s."

Secretary Dinneen singled out inter-allied cooperation as the current US priority in theater deterrence: "Participation in joint developments and acquisition within the NATO alliance [has] been less than fully successful in the past. We think that the potential for success is greater now due to the recognized Warsaw Pact build-up, the desire among NATO members to achieve a higher payoff from their defense expenditures, and the willingness of this Administration to try new ways to achieve a more collegial defense of the alliance."

Pointing to deficiencies in NATO's C^3 structure, Dr. Dinneen disclosed that "while we have secure communications for our most important and critical command conferences, there are large numbers of important communications circuits that are not protected. As a result, during peacetime exercises we run the risk of giving away important information about our capabilities, our doctrine, and our tactics."

Also, ground forces fielded by different NATO countries cannot communicate with each other short of exchanging communications units. A common standard, known as EUROCOM, is being developed to bridge the communications gap but probably won't go into effect until 1995, Dr. Dinneen said. Expanding, massive Soviet electronic warfare capabilities tailored for the disruption of US/NATO C^3 systems represent another major command and control challenge in Europe.

NATO—The Central US Defense Issue

"NATO is the predominant scenario for which we buy military forces—it dwarfs the strategic forces budget," Ambassador Robert W. Komer, Advisor to the Secretary of Defense on NATO matters, told the AFA Symposium.

Ambassador Komer, whose position ranks at the assistant secretary level, termed "not correct" press reports about PRM 10 (a Presidential Review Memorandum on defense policy) conceding the loss of large portions of West Germany in case of an attack by the Warsaw Pact forces. PRM 10, he said, "was just a staff study," adding facetiously that inexorably "each new Administration does zero-based staff studies because [the new people] cannot believe that the previous Administration could possibly have come up with the right policy. These exercises, usually after six months or so, [cause the new Administration to] conclude that the old

policy was more or less rational" and to reinstate it.

Some of the gloomiest PRM 10 assumptions, he said, had been incorporated mainly for the purpose of conducting computer studies. He shrugged off as "not very realistic" recent widely disseminated assertions that the Warsaw Pact "could take NATO in forty-eight hours, with or without the use of theater nuclear weapons," but acknowledged that the situation on NATO's southern flank—in Greece and Turkey—"is depressing. We have real serious political and military problems there."

From the point of view of airpower as well as from an overall military perspective, "theater deterrence is a coalition problem," according to Ambassador Komer. Even if allowance is made for the fact that USAF "is the best air force in the world"—a fact attested to by studied emulation on the part of the Soviets and others—it is evident that USAF "cannot ensure theater deterrence for NATO by itself. USAFE's 'M-Day' deployed combat strength in Europe is about one-third of that of the allies. . . . Even after we deploy TAC [augmentation forces from the US], we still have at the most one-half of NATO's total tac air," he said.

NATO, and to a lesser extent, Middle Eastern and Northeast Asian war scenarios, represent "coalition responsibilities . . . involving in the European case thirteen different Air Forces. . . . It is baffling that we have not recognized in our service schools—and neither have our allies—that coalition war [has been] the norm rather than the exception throughout recorded history," Ambassador Komer pointed out.

Even though NATO has made great strides toward creating a peacetime coalition structure—manifest in [illegible] Air Forces Central Europe (AAFCE) combined war headquarters—this progress is "still only a drop in the bucket" so far as the need for standardization, interoperability, interchangeable munitions, and combined C^3 is concerned. The Warsaw Pact, by contrast, has a coalition war capability, but "they got it Soviet style. . . . There it is a matter of fiat, with the Red Army marshals running everything, and the satellite powers being trained, equipped, and indoctrinated according to the Soviet model," Mr. Komer said.

With the Soviet Union seemingly committed to outspending the US in the military sector by a wide margin and in perpetuity, the US and the other NATO powers must maximize their lesser investment through "better tradeoffs and more efficient resource allocation. NATO can't afford the waste and duplication inherent in fourteen different national postures—all varying widely and each with its own doctrine, own C^3, and own tactics. We have to rationalize [coordinate and cooperate] more in the sense of a two-way street [and not just through standardization on US models and weapons]." Military effectiveness, rather than individual economic gain, is the reason and incentive for rationalization, he stressed.

Citing the example of the tac air problem in NATO's central region, Ambassador Komer explained that "two of our most critical problems are survivability and sortie rate. [In case of a Warsaw Pact attack], the first thing the Soviets will do is mount an offensive to knock out our bases and our command control and communications system. . . . A USAFE squadron taking off from Bitburg [Air Base] might have to land at an RAF or Luftwaff base. After many years we finally will be able to refue them [because of] Stage 'A' cross servicing but probably can't rearm [the aircraft] because we generally lack interchangeable ammo. We can't hang our bombs on somebody else's aircraft and the other way around because the bomb shackles usually are different. And if we can't do this, then we really can't talk about theater deterrence in the first place."

The high cost of advanced technology, of itself, makes rationalization compelling, Mr. Komer argued: "Even wealthy, medium-sized powers—such as Belgium—won't be able to afford [a full complement of] first-rate weapons. NATO is running the risk of becoming an amalgam of one first-class air force—USAF—a couple of second-class air forces, and a larger number of third-class air forces, unless we can get commonality by working together." Pooling resources and buying common systems is the only way to keep high technology affordable, he said. He cited the E-3 AWACS as symptomatic of this proposition.

Addressing the large number of industry executives attending the Symposium, he urged: "Think NATO don't think nationally. By and large, industry is . . . geared to meet national requirements . . . with interoperability and export usually an afterthought. We need to allow for and design for multiple users from the outset. . . . This makes [economic sense]. There is a bigger market for such systems than for just national systems."

The Defense Department, he suggested, is moving toward a position where "if we have two equal designs but one can be developed and produced cooperatively [illegible] that is less suitable for multinational use. Continued failure to buy European systems, especially in those areas where the technological competence of individual NATO allies is on a par with the US, may invoke the spector of "cartelization on the part of the European to the detriment of everybody. The Carter Administration is dead serious about the two-way street, greater standardization, greater interoperability, and greater cooperation with our allies," Mr. Komer asserted. More two-way traffic won't necessarily mean more "offset" but rather more "horse-trading within families of programs," he added.

Two categories of NATO initiatives, one set concentrating on the short-term, and the other focused downstream, are being readied, Ambassador Komer said. Subject to approval by NATO's Ministerial Conference three key areas are to be emphasized during 1978: "Readiness, war reserve munitions, and antiarmor munitions." The long-term initiatives, launched by President Jimmy Carter at the London summit meeting in May 1977 and refined by Secretary of Defense Harold Brown are of profound importance and involve "readiness, reinforcement, mobilization, coping with the maritime threat, improving C^3 [capabilities on a NATO-wide basis] as well as NATO's electronic warfare capabilities, creating a common logistic system, especially in the Central Region, and reorganization of theater nuclear forces," according to Mr. Komer.

The prospect of "Eurocommunism" gaining a foothold in one or more NATO governments causes maj-

Above: The E-3A AWACS is symbolic of what Ambassador Komer termed the intensifying trend toward pooling resources to make high technology affordable. Left, intent listeners included, from left to right, Generals Jones, Haig, Stafford, and Hughes.

S concern but so far no Communists have gained ıbinet posts in Western Europe, Ambassador Komer ›inted out. Were they to succeed, the consequences vould not be good for the US. The question is, how-'er, which ministries they might get. . . . Defense or ıterior [the latter usually in direct charge of all domes-: security matters in European cabinets] would be quite rious."

Rating the likelihood of localized, limited-objectives attacks on NATO as low, Mr. Komer said such an unambiguous manifestation of Soviet intentions undoubtedly "would lead to massive, enthusiastic military upgrading of NATO," which hardly is being sought by Moscow. Were the Soviets to consider a deeper penetration, "say, snatch Hamburg, they would have to assume that it might cause World War III and not be

worth" the risk. A Soviet attack on Yugoslavia would "represent a special case," but US/NATO response cannot be discussed publicly, he said.

General Haig, commenting on a related area, told the AFA Symposium that while NATO's posture is defensive, there hardly is an exercise that is not predicated on an "offensive phase." NATO policy, unlike US policy during the Korean and Southeast Asian Wars, grants the attacker no sanctuaries: "We have made clear that the consequences of aggression will not be confined to the victim of that aggression, . . . [the rationale being] that it is not possible to deter if the [would-be] aggressor doesn't understand from the outset that regardless how limited his aggression, he must accept the risk of greater damage to himself," General Haig said.

Parochialism vs. the Common Good

In the AFA Symposium's keynote address, Air Force Secretary John C. Stetson said NATO's most pervasive and "potentially most serious problem to date came to light in the wake of the Middle East War of 1973. As each nation became more concerned with its internal direct economic interests, the larger interests of the alliance took second priority. It suddenly became dramatically apparent just how much industrial Europe—and the rest of the free world—is dependent upon Middle East oil, and what might happen if the supply were shut off."

Pointing out that this lesson was not lost on the Soviet Union, Secretary Stetson called attention to subtle but significant changes in Soviet interests and initiatives that have occurred since 1973: "That change in direction has been aimed at increasing Soviet influence on, and possibly control of, the oil resources of the Persian Gulf."

Warning against "tunnel vision" on the part of NATO with regard to Eastern European threats, Secretary Stetson said "we must be constantly aware of those matters affecting our common interests outside the immediate North Atlantic area [but] which affect the well-being and defense of the alliance." Foremost here is the Persian Gulf area where "we must be concerned about the security of the strategic approaches to the Gulf, including the sea lanes in the South Atlantic that would bring oil to Europe if the Suez Canal were closed." Soviet activities aimed at exploiting these vulnerabilities are "clearly evident" and "disturbing," Secretary Stetson said.

Observing that NATO's economic cohesion ranks closely behind the alliance's military strength in assuring its long-term viability, he said the F-16 coproduction program represents a test of US sincerity: "They [the NATO allies] are watching this program very closely. To them, the multinational F-16 program means not only a chance to acquire one of the most versatile and capable fighters in the world; it also indicates how much the US is willing to cooperate for the good of NATO and its overall objectives." In recent meetings with high-level defense officials from several European NATO countries, "I was told repeatedly that if the international F-16 program does not work successfully the 'two-way street' will have been just so many words, and it will not be tried again."

He added, "I understand the concern of American industry and the members of Congress who urge a cautious approach on mutual sales. I do not advocate buying inferior or unreliable equipment from anyone. But I am certain that we must search hard for ways to relieve some of the economic pressures and anxieties of our European allies. A successful F-16 program will demonstrate just how this can be achieved." ■

(This report on AFA's Symposium will be concluded in the February 1978 issue.)

Secretary Stetson said the NATO allies see the F-16 program as the litmus test of US willingness "to cooperate for the good of NATO and its overall objectives."

Sperry Update 3

A timely report of Sperry Flight Systems activities in the airline, defense, space and general aviation markets.

Sperry shares milestone jet delivery by Boeing.

When Boeing announced the delivery of its 3000th jet transport recently, Sperry had good reason to reflect on its role in this milestone.

The 3000th jet was a 727-200 model. Sperry autopilots are standard on all 727, 737 and 747 aircraft, which account for more than two thirds of the 3000 aircraft produced.

Combining these Boeing totals with those of other production airliners gives Sperry undisputed autopilot leadership on U.S. air frames. Sperry autopilots are also standard on the DC-8 and DC-9.

TRW selects Sperry reaction wheel for TDRSS.

TRW Defense and Space Systems Group has awarded Sperry a $1.12 million contract for gyroscopic reaction wheel assemblies for its Tracking and Data Relay Satellite System.

Up to four Sperry reaction wheels will be used for stabilization of the four satellites currently planned for production.

The first launch is scheduled for September 1979 with two more to follow in mid-1980. TDRSS will relay data to and from the space shuttle, unmanned spacecraft and the ground control center at White Sands, N.M.

Sperry symbol generator selected for Hughes AH-64.

A Sperry all-raster symbol generator for cockpit displays has been selected by Hughes Helicopters for the AH-64 advanced attack helicopter.

The symbol generator will process TV data from infrared and other sensors, superimpose symbology and distribute the combination to various CRT and helmet-mounted displays.

Sperry tapped for more shuttle work.

Sperry's multifaceted role in the space shuttle program was expanded by NASA recently as the tempo and excitement of activity surrounding the orbiter free flights heightened.

Already very much involved in reentry, approach and landing study work, Sperry has been asked to continue and expand its autoland system design, verification, and support effort.

Sperry also builds the multiplexer/demultiplexer unit for the orbiter and solid rocket boosters. And, in the future a super-accurate pointing system developed by Sperry will aim telescopes and other research instruments from the open orbiter bay.

In a related program, Sperry has been involved in the modification of two Gulfstream II aircraft now used extensively for training astronauts in orbiter approach and landing techniques.

Single pilot IFR okayed for Bell 212 with floats.

Sperry's certification of the Bell 212 for single pilot IFR operation has been extended to 212's with floats. Authority has also been granted in Canada and the United Kingdom.

Business and commercial helicopter activities are centered in Sperry Flight Systems' Avionics Division.

General Electric picks Sperry reaction wheels.

Sperry Flight Systems received two contracts from General Electric's Space Division for gyroscopic reaction wheels to stabilize and control spacecraft.

Sperry will supply reaction wheels for the U. S. Air Force DSCS III communications satellite system and NASA's Solar Maximum Mission spacecraft.

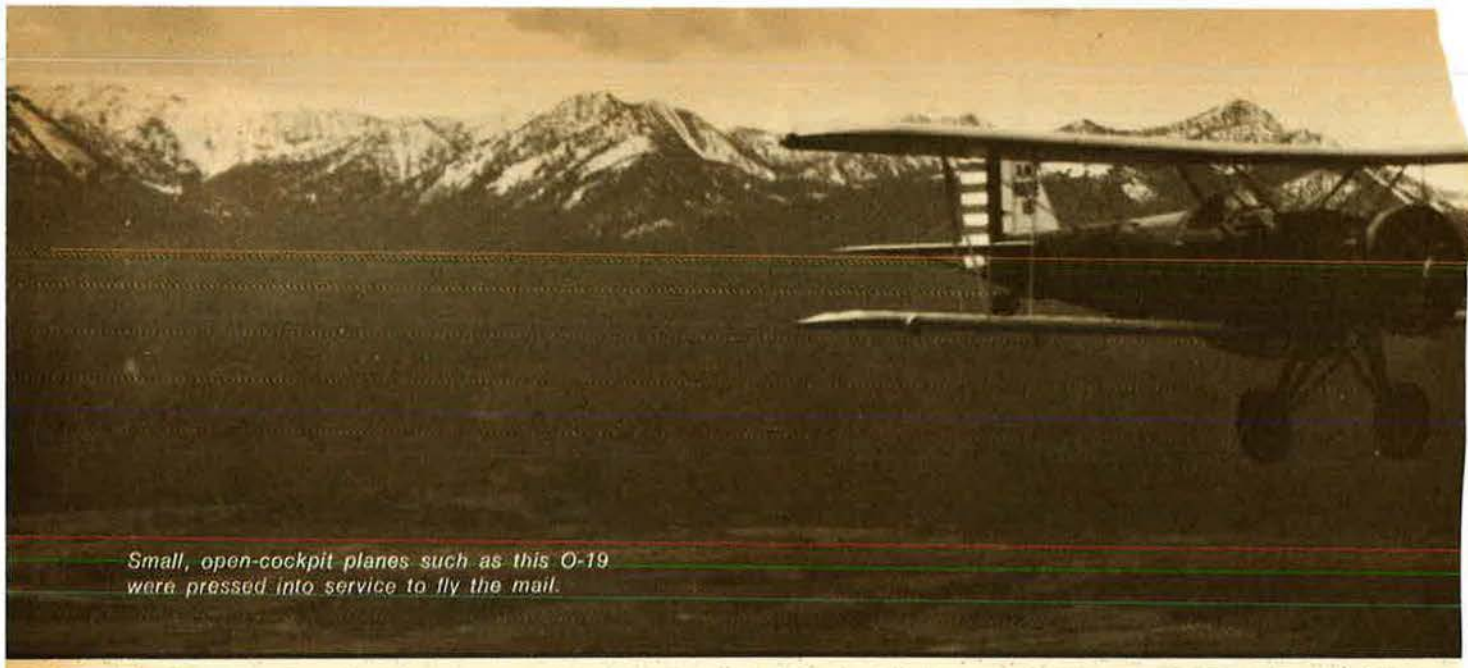
Four reaction units, each weighing just 5.5 lbs., will be used on DSCS III. This represents a breakthrough for Sperry in the small space reaction wheel market. The current Sperry-General Electric Company contract calls for 17 reaction wheels, with delivery starting this fall.

The NASA spacecraft, being developed by the Goddard Space Flight Center, will use reaction wheels similar to those developed by Sperry for the High Energy Astronomy Observatory satellite (HEAO).

Remember us.

We're Sperry Flight Systems of Phoenix, Arizona, a division of Sperry Rand Corporation . . . making machines do more so man can do more.

SPERRY
FLIGHT SYSTEMS



Small, open-cockpit planes such as this O-19 were pressed into service to fly the mail.

CHISELED into the facade of New York City's Main Post Office is a translation from the works of Herodotus, a Greek historian of the fifth century B. C. Describing the fidelity to duty of the Persian mounted couriers carrying messages during the Greek-Persian War of 500 B. C., he wrote: "Neither snow, nor rain, nor heat, nor gloom of night stays these couriers from the swift completion of their appointed rounds."

When, in February 1934, the Air Corps was called upon to provide the aerial couriers to carry the mail, an operation designated Army Air Corps Mail Operation (AACMO), it was confronted with a multitude of addi- [illegible] tures in open cockpits, and icing wings; airplanes unsuitable and inadequately equipped for the mission; lack of adequate tools and spare parts resulting in poor maintenance and forced landings; deficiencies in training pilots to fly on instruments and at night, and to following a radio beam; complete unfamiliarity of Air Corps personnel with the organization needed to efficiently carry the mail; unfamiliarity of pilots with the routes they were required to fly; no per diem funds for the first forty-six days of the operation; and an extended period of dangerous flying weather, one has a picture of most, but not all, the problems facing the Chief of the Air Corps, his staff, and, as a matter of fact, the entire Air Corps with the exception of students at service schools and personnel needed to administer Air Corps bases. The Air National Guard also participated in the operation to the maximum of its ability.

When, on February 9, 1934, the Chief of the Air Corps, Maj. Gen. Benjamin D. Foulois, informed Harlee Branch, Second Assistant Postmaster General, that the Air Corps could carry the mail, he was well aware of the Air Corps's deficiencies. He and his predecessors, since the air arm had become a separate branch of the Army, had tried with little success to get remedial measures funded through the War Department budget.

General Foulois, in later years, stated he had reasoned at the time that AACMO would bring Air Corps's deficiences to the attention of the news media, the Congress, the President, and the nation with a resultant increase in funds. How correct he was is now history, as are the inevitable accidents and deaths, adverse political reactions, accusations, and recriminations caused by those deficiencies. The labor pains were severe and protracted but there was born an infinitely better-trained, equipped, and eventually better-organized air arm of our national defense.

Ten Days to Prepare

The Air Corps was given the job of flying the mail with little warning and scant time to prepare. Due to irregularities in the mail contracts between the Post Office Department and the airlines, the contracts were abruptly canceled by Postmaster General James A. Farley with the approval of President Franklin D. Roosevelt.

The rapidity with which the contracts were canceled and the job turned over to the Air Corps is best illustrated by the sequence of events from February [illegible] through 9, 1934.

On February 7, Karl Crowley, Solicitor General of the Post Office Department, completed a study of domestic airmail contracts and concluded the contracts were illegal by reason of alleged fraud and collusion. Farley concurred and arranged a meeting with the President on February 8. Farley, accompanied by William Howse and Harlee Branch, his First and Second Assistants, and Crowley, recommended to Roosevelt that the domestic airmail contracts be canceled. The President directed Farley to annul the contracts provided Attorney General Homer L. Cummings held the move to be legal.

On February 9, Cummings advised Farley, Branch and Crowley there were sufficient grounds for the cancellation. That same afternoon Branch informed the Chief of the Air Corps of the contemplated action and asked if the Air Corps could carry the mail. General Foulois requested four to six weeks to prepare. He realized the enormity of the task he had taken upon himself and the Air Corps.

Also on February 9, General Foulois reported to the office of the Chief of Staff of the Army, Gen. Douglas MacArthur, to inform him of the action taken, and found the information had preceded him. Maj. Gen. Hugh A. Drum, Deputy Chief of Staff of the Army, handed Gen

In February 1934, an ill-prepared Air Corps was directed to take over the airmail, with unforeseen results that led ultimately to an independent US Air Force.

Neither Snow, Nor Rain, Nor Gloom of Night

BY BRIG. GEN. ROSS G. HOYT, USAF (RET.)

eral Foulois Executive Order 6591, dated February 9, 1934. It had been prepared in advance by the White House.

The order directed Secretary of War George H. Dern to "place at the disposal of the Postmaster General such airplanes, landing fields, pilots, and other employees and equipment of the Army of the United States needed or required for the transportation of mail during the present emergency over the routes and schedules prescribed by the Postmaster General." Simultaneously, the airlines were directed to cease carrying the mail on February 19, 1934.

aj. Gen. Benjamin Foulois hoped that the airmail operation would focus attention on Air Corps deficiencies.

There were but ten days in which to prepare, barely time to recover from the shock!

General Foulois knew the Air Corps pilots were the best trained in the world in basic flying techniques. They were not adequately trained in the use of auxiliary equipment essential to flying safety under all weather conditions. The airplanes were nearly all obsolescent—open cockpit pursuit, bombardment, attack, observation, and transport planes lacking instruments and radios. In the case of the smaller types, military equipment had to be removed to provide mail compartments.

Toward the end of AACMO, twelve Martin B-10 bombers, twin-engine monoplanes with closed cockpits, retractable landing gear, and more sophisticated navigation, communication, and instrument flying equipment and capable of carrying a ton of mail, became available for use on the transcontinental airway from Newark to Oakland. Lt. Elwood "Pete" Quesada, now a retired Air Force lieutenant general, flew the last leg of the final AACMO transcontinental airmail flight, piloting a B-10. The elapsed time from Oakland to Newark was fourteen hours, including several stops, bettering the best commercial airline time.

Organizing the Operation

On February 10, General Foulois formed an organization to initiate AACMO. Brig. Gen. Oscar Westover, Assistant Chief of the Air Corps, was put in charge with an already functioning staff. Maj. Carl Spaatz (later to become first USAF Chief of Staff) was Chief of the Training and Operations Division, Office Chief of the Air Corps, and acted as General Westover's Chief of Staff. I was G-3 (Operations) under Major Spaatz, and I vividly recall the task placed upon the entire Air Corps during those first ten days and the succeeding months until the airmail was turned back to the airlines on June 1, 1934.

During the first ten days, all Air Corps activities in the continental United States, including those of the Air

The author, left, who was operations officer for the AACMO, reviewing Eastern Zone routes with then Maj. Carl Spaatz, who later became USAF's first Chief of Staff.

with lights, radio beacons, and emergency landing fields, running through all three AACMO Zones from Newark via Cleveland, Toledo, Chicago, Des Moines, Omaha, Cheyenne, Rock Springs, Salt Lake City, Elko, and Sacramento to Oakland. The AACMO routes coincided with those of the airlines, as shown on the accompanying map.

When their contracts were canceled, the airlines were using 500 airplanes and carrying 3,000,000 pounds of mail a year over a 25,000-mile federal airways network.

The route mileage flown by AACMO was less than half that of the airlines. During AACMO, the Air Corps flew 1,600,000 airplane-miles and carried 800,000 pounds. Had the Air Corps continued to fly the airmail for a full year, it would have carried 3,200,000 pounds of mail (more than that carried by the airlines in 1933) with half the number of airplanes.

Upon notification of the impending operation, all Air

National Guard, were notified of the impending operation. The National Guard Bureau, the governors and adjutants general of each state, and the commanding generals of the six Army Corps Areas were notified and their cooperation requested.

All Air Corps communications facilities were placed on twenty-four-hour alert; special legislation was requested to obtain funds, since Post Office funds could not be transferred to the Air Corps. This caused the delay in per diem funds, creating some severe hardships. For example, Lt. Paul K. Jacobs, now a retired Air Force colonel, who was control and engineering officer at

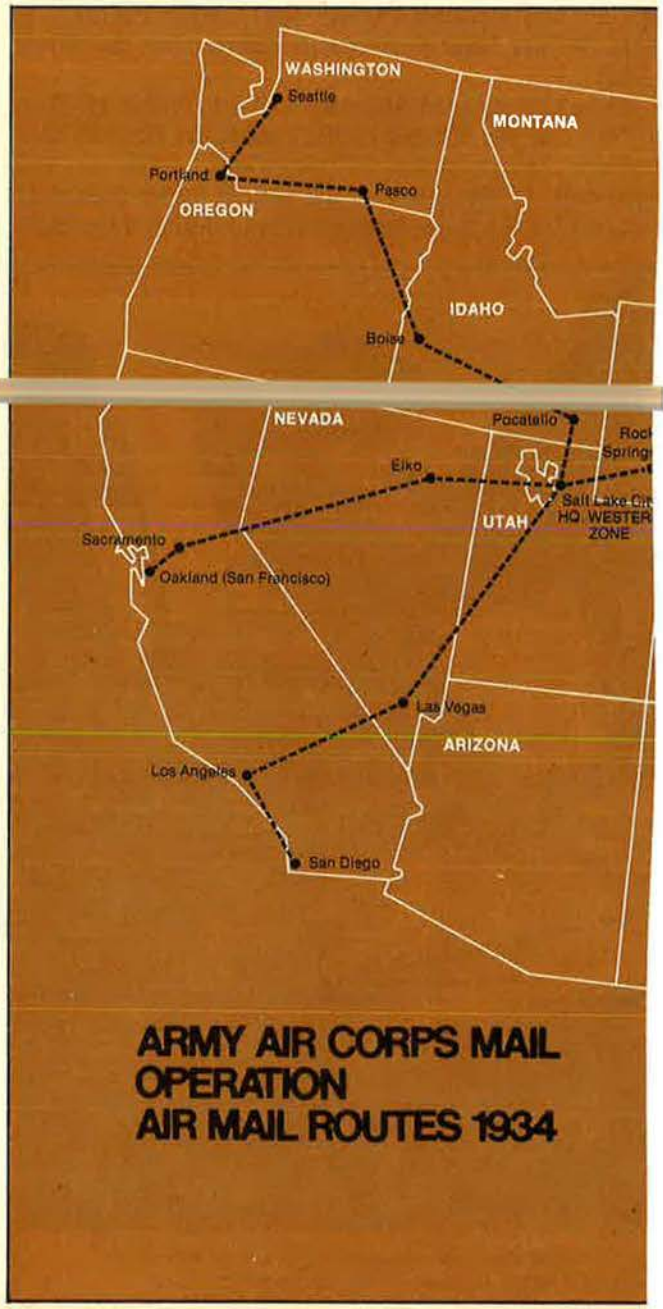
the city, six miles from the nearest town, and no accommodations within three miles. This was particularly difficult for mechanics who, after long hours on duty, walked to their lodgings if they could obtain credit, before per diem payments started. Some often went hungry and slept on hangar floors or in cockpits.

In cooperation with postal officials, the continental United States was divided into three Air Mail Zones: Eastern, Central, and Western. Each Zone was divided into routes, and each route into sections with designated airmail stops.

The Eastern Zone, with the most extensive routes of the three, included the territory east of a line from Chicago, St. Louis, and Memphis (all excluded), to New Orleans (included), and was commanded by Maj. Byron Q. Jones, whose headquarters was finally established at Mitchel Field, N. Y., on March 12. The Central Zone, with headquarters at Municipal Airport, Chicago, was commanded by Lt. Col. Horace M. Hickam, and extended from the Eastern Zone boundary to a north-south line through, but not including, Cheyenne. The Western Zone ran from there to the western seaboard and was commanded from headquarters at Salt Lake City Municipal Airport by Lt. Col. Henry H. Arnold.

All Air Corps personnel except those especially exempted and all equipment except a minimum at bases was available to Zone Commanders, subject to coordination with Corps Area commanders and the Chief of the Air Corps.

Basically, there was the transcontinental federal airway



Corps activities began working round-the-clock to install instruments and radio equipment, and remove all military equipment from many planes to provide mail compartments. Training in night and instrument flying and following the radio beam began, and continued after February 19.

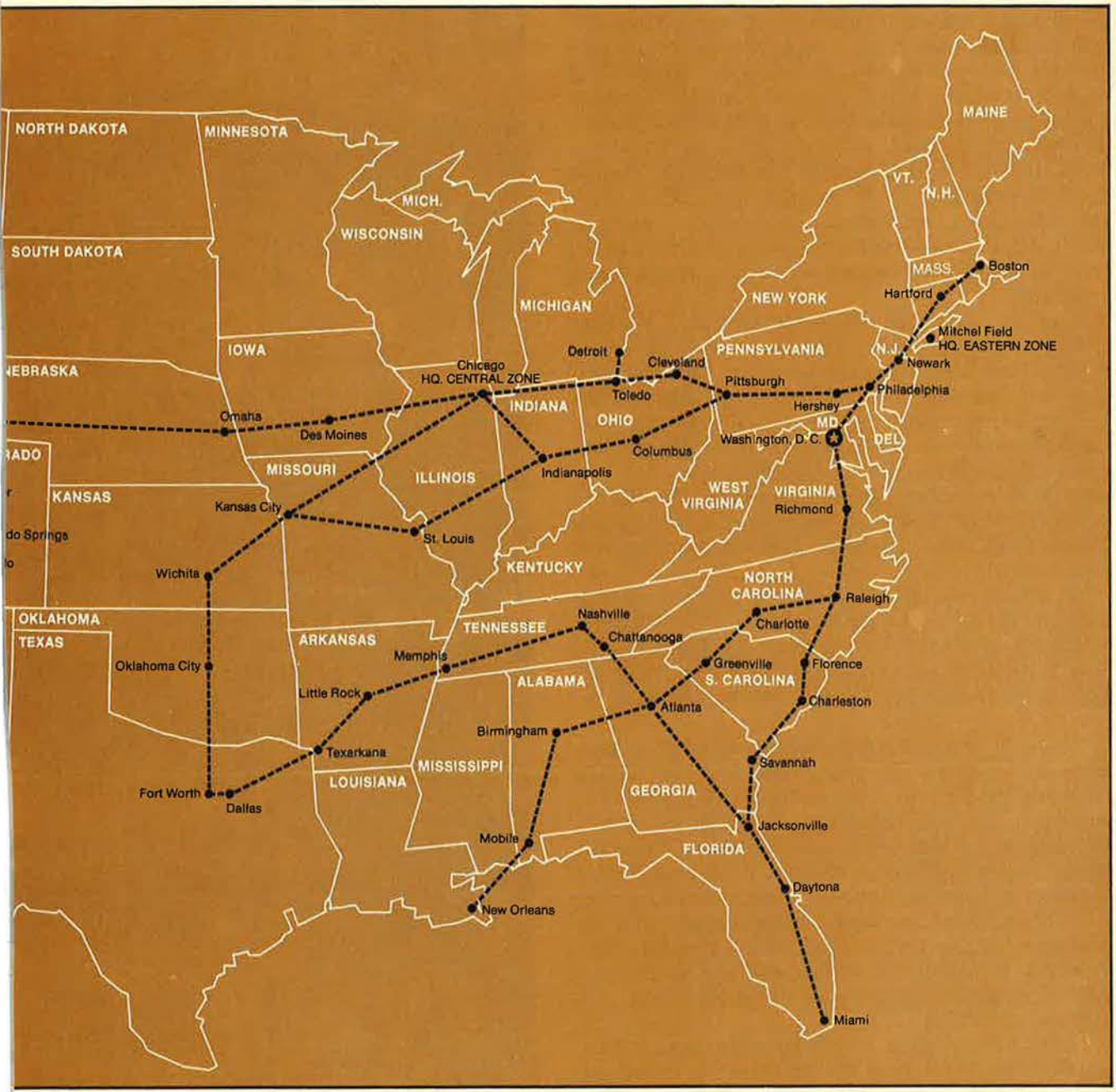
An officer at Langley Field, Va., with a crew of twenty, installed fifty-two radio sets in planes from February 12 to 16. Comparable work was progressing at all major Air Corps stations, Air Corps detachments, and National Guard units. The question arises as to where all those instruments and radios had been reposing prior to the emergency, and why. And why had not a directive been issued previously making it mandatory that all pilots be fully trained in instrument flying?

With the establishment of the routes, the feverish rush began to place personnel (control officers, engineering officers, pilots, and mechanics), airplanes, and spare parts at control points by February 19 or earlier, to allow familiarization flights over the routes.

Morale was high throughout the preparatory period. Everyone was striving to live up to the inscription on the New York City Post Office, in spite of the multitude of additional obstacles encountered along the way. When the accidents, fatalities, but especially criticism started, morale reached a low ebb.

A Pyrrhic Victory

Everyone and everything was reported in place by February 19, the day the operation was to begin. I recall standing in the entrance of the Munitions Building in Washington that February morning and not being able to see across Constitution Avenue because of the dense fog. It was a foretaste of the bad weather that dogged AACMO much of the time from February 19 to June 1, 1934. The adverse weather, together with the deficiencies



previously mentioned, was responsible for fifty-seven accidents and twelve Air Corps fatalities, all given full publicity.

In a recent conversation with Brig. Gen. Joseph G. Hopkins, then a lieutenant, he described his experience on an airmail flight into Denver in a P-12 open-cockpit pursuit plane. He landed, taxied to the line, stopped the engine, and had to reach over with his right hand to unclench the fingers of his frostbitten left hand from the throttle. Variations of that experience were typical during AACMO operations.

Several fatal accidents were caused by radio failure in bad weather, coupled with lack of instrument flying training, and the inability of pilots to interpret meteorological information.

Lt. Norman D. Sillin, now a retired major general, reported after the death of his roommate, Lt. D. C. Lowry, that he and Lowry, both experienced pilots, had memorized a sentence, each word of which began with one of the ten code letters used by the flashing beacons on each 100-mile segment of the lighted airway. This was all for naught. Lieutenant Lowry crashed fifty miles off the radio beam. His death was attributed to radio failure in bad weather.

Lt. Beirne Lay, Jr., reported his first night practice flight from Chicago to Nashville in a P-12E in which the radio failed, the compass spun, and he had only Rand McNally maps without adequate data. He "climbed from the cockpit at Nashville ahead of schedule, but an old man."

Accidents and casualties in the Eastern Zone were typical: Seven airplanes crashed because of engine trouble. One bomber was abandoned at night, the pilot and two passengers parachuting successfully. When another bomber was landed in a swamp among small trees, the pilot was uninjured but the crew chief was killed and a passenger fractured a collarbone.

In the Western Zone, two accidents in one day resulted in the deaths of three pilots before operations began on February 19. Both airplanes were on familiarization flights, one at night.

At tragic cost, the spotlight of adverse criticism brought into sharp relief the deficiencies of the Air Corps in training and equipment due to the fiscal policy of the War Department and its concept of the Air Corps mission as purely auxiliary to the other branches of the Army.

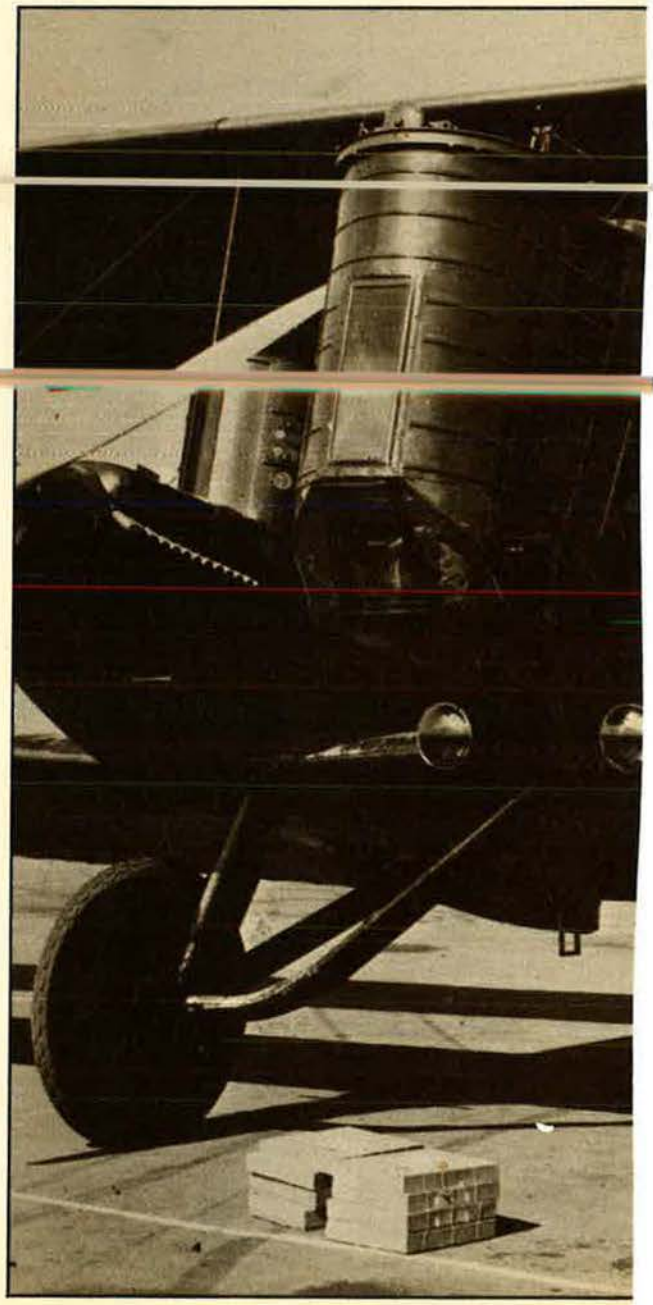
When the President began receiving adverse criticism from the Congress, the press, radio, and the airlines (they had lost forty valuable contracts), he—apparently wishing to forestall unfavorable political reactions—called Generals MacArthur and Foulois to the White House and blamed the Army and Air Corps for the accidents and deaths. General Foulois, who had considered the accidents and deaths commensurate with the increased flying activity, is reported to have said: "Mr. President, airmail or not, there is only one way to prevent flying accidents and deaths in the Air Corps, and that is to stop flying."

The immediate effect of AACMO was stated in General Foulois's final report: "In the blaze of editorial and congressional reaction to the deaths of army flyers, th President and the Congress were, in my opinion, force to release funds for immediate use in Air Corps experi mental and research work, for the immediate procure ment of advanced types of aircraft and aircraft materie and for the immediate training of Army Air Corps per sonnel."

AACMO—Catalyst of Airpower Independence

There was another far-reaching effect AACMO ha on the Air Corps, one that has not heretofore been suffi ciently emphasized: a decisive role in the progressiv changes in Air Corps organization from an inheren branch of the Army to an independent Department c the Air Force.

In order to establish a line of departure for this evolu tionary process, one must retrogress more than a ha century to 1921–23 and the sinking of the naval vessel

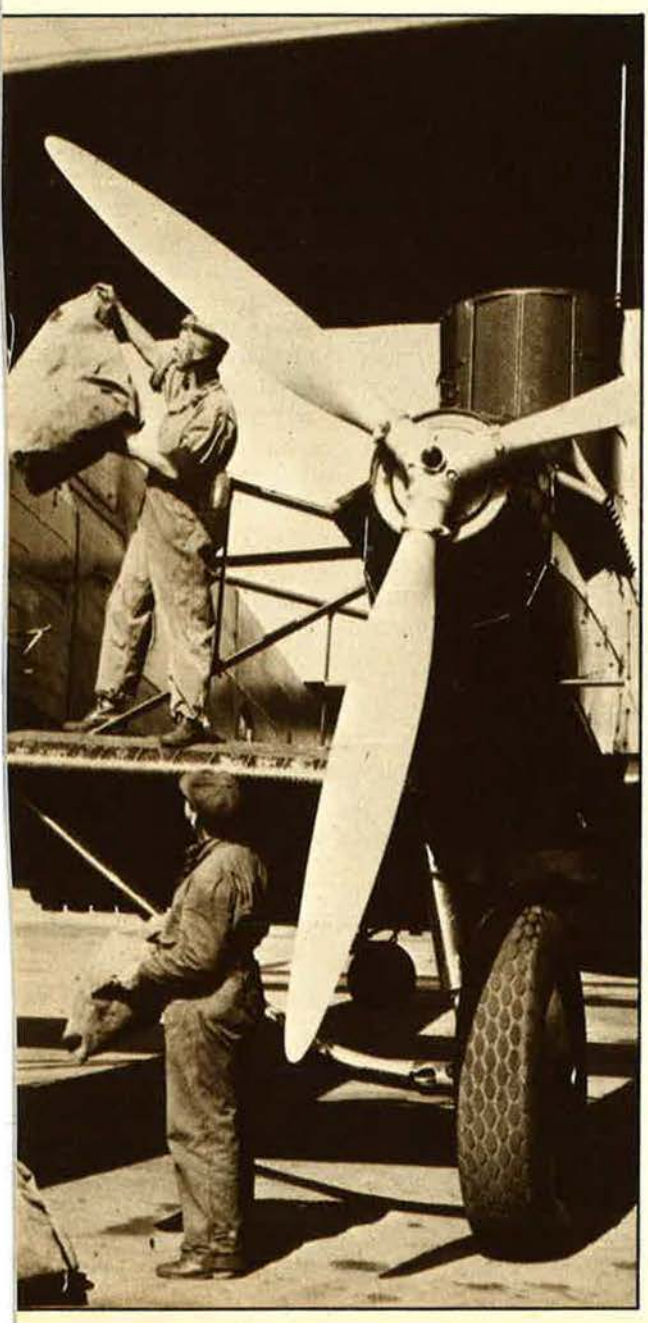


by aerial bombardment off the Virginia Capes and Cape Hatteras under the command of Brig. Gen. William Mitchell, Assistant Chief of Air Service. The sinkings were much to the surprise and no doubt disappointment of the War and Navy Departments. The War Department saw the possibility of losing a branch of the Army. The Navy saw a definite threat to the prestige of the battleship. The War Department should have been delighted, for it was then engaged in a debate with the Navy Department before the Joint Board as to which should be responsible for coast defense.

The euphoria caused by the brilliant success of General Mitchell's bombers created throughout the Air Service a wave of enthusiasm for a separate air force, expressed volubly and vehemently by those officers who participated in the bombing, and by others. Among those officers, then considered dissidents and undisciplined malcontents by the War Department General Staff, but now looked on by the Air Force as pioneers, far ahead of their times, were General Mitchell; Majs. H. H. Arnold, Herbert Dargue, and Carl Spaatz; Capts. Robert Olds, George Kenney, Harold Lee George, and Donald Wilson; and Lt. Kenneth Walker. All reached general officer rank.

Much of Brig. Gen. Ross G. Hoyt's career, which extended from 1918 to the closing months of World War II, was associated with the command of fighter units and development of fighter aircraft. He participated in many pioneering flights, including refueling the Question Mark *during its record endurance flight of 1929. At the time of his retirement, he commanded the 8th Fighter Command's Air Defense Wing in England. He has been a frequent contributor to this magazine. General Hoyt now lives in Washington, D. C.*

General Mitchell's court-martial in 1925 and the disciplinary action against Major Arnold for his activities in General Mitchell's behalf suppressed outward expression of the movement temporarily, but by 1933 the movement was stirring again. But efforts of the General Staff to suppress any progress toward a separate air force never ceased.



Slow, improperly equipped bombers, this Curtiss B-2 among them, were the heavy haulers until the closed-cockpit B-10 became available late in the operation.

It appears that when the War Department General Staff wished to adopt a new policy or reaffirm an old one, a board was appointed, the results of which confirmed the preconceived ideas of the General Staff.

Accordingly, on August 11, 1933, a special committee of the General Council, known as the Drum Board, was appointed, chaired by Maj. Gen. Hugh A. Drum, Deputy Chief of Staff and a determined opponent of anything smacking of a separate air force. Other members of the Board were the Assistant Chief of Staff, War Plans Division; the Commandant of the Army War College; the Chief of the Air Corps; and the Chief of Coast Artillery. The Board was to review and revise the Air Plan for the Defense of the United States, which the Chief of the Air Corps had been directed to submit for the use of a GHQ (General Headquarters) Air Force in each of three war plans. (A GHQ Air Force did not exist at that time except in war plans.) It had been conceded that such a force was desirable in war, but only under the War Department and the Army commander in the field.

The Drum Board did not accept the recommendations of the Chief of Air Corps, General Foulois. The Board proceeded to "formulate its own views thereon and to embody them in a report of the Committee as a whole as a substitute for the one under consideration." A slap in the face for the Chief of Air Corps.

A detailed study of the Drum Board report reveals how completely the General Staff integrated GHQ Air Force into the Army war plans, tactically, and strategically. The Chief of Air Corps signed the report, thereby concurring. For the time being it was the nadir of hopes for a separate air force. (In those days, the proponents of a separate air force metaphorically defined a Board as something "long, narrow, and wooden.")

In April 1934, because of AACMO experience, but before its termination, Secretary Dern appointed the War Department Special Committee on the Air Corps, known as the Baker Board, chaired by former Secretary of War Newton D. Baker. The Board was charged to "make a constructive study of the adequacy and efficiency of the Army Air Corps for its mission in peace and war."

The Baker Board consisted of six civilians experienced in military aviation including James H. Doolittle, recently resigned from the Air Corps, and four general officers of the General Staff including General Drum as vice chairman, and General Foulois, Chief of the Air Corps.

The Baker Board made many recommendations beneficial to the Air Corps, but always as an integral part of the Army. It concurred with the Drum Board as to control of the GHQ Air Force, probably due to the influence of General Drum and the other three general staff officers. The report stated, "this force, when adequately equipped and organized, will be able to carry out all missions contemplated for a separate or independent air force, cooperate efficiently with the ground forces and make for greater economy." Doolittle submitted a strong minority report in favor of a separate air force. It kept the thought and spirit alive.

Brig. Gen. Oscar Westover, Assistant Chief of Air Corps and later its Chief, was picked by General Foulois to head the Army Air Corps Mail Operation.

However, the Baker Board recommended the organization of the GHQ Air Force, effective March 1, 1935. It consisted of all pursuit, bombardment, and attack units in the continental United States, under the command of a general officer of suitable air experience, with headquarters outside Washington. The first commanding general of the GHQ Air Force was Maj. Gen. Frank M. Andrews. His death in an aircraft accident at Rekjavik, Iceland, early in World War II was a great loss to the Air Force and the nation.

GHQ to USAF

Even though it remained under the Army, the GHQ Air Force was the first small step toward a Department of the Air Force—a concession that there was a strategic mission for the air arm separate from that of the ground forces and a chink in the armor of the opponents of a separate air force.

Another action for which AACMO was responsible together with the general burgeoning of aviation at the time, was the appointment by President Roosevelt, in June 1934, of the Federal Aviation Commission (FAC) whose mission was to "make recommendations concerning all phases of aviation." Many Air Corps officers were called to present their views on the future organization of the Air Corps. They were instructed by the General Staff to familiarize themselves with War Department policy and not to testify contrary thereto unless their statements were identified as personal opinion. They expressed themselves in convincing terms in favor of a separate air force.

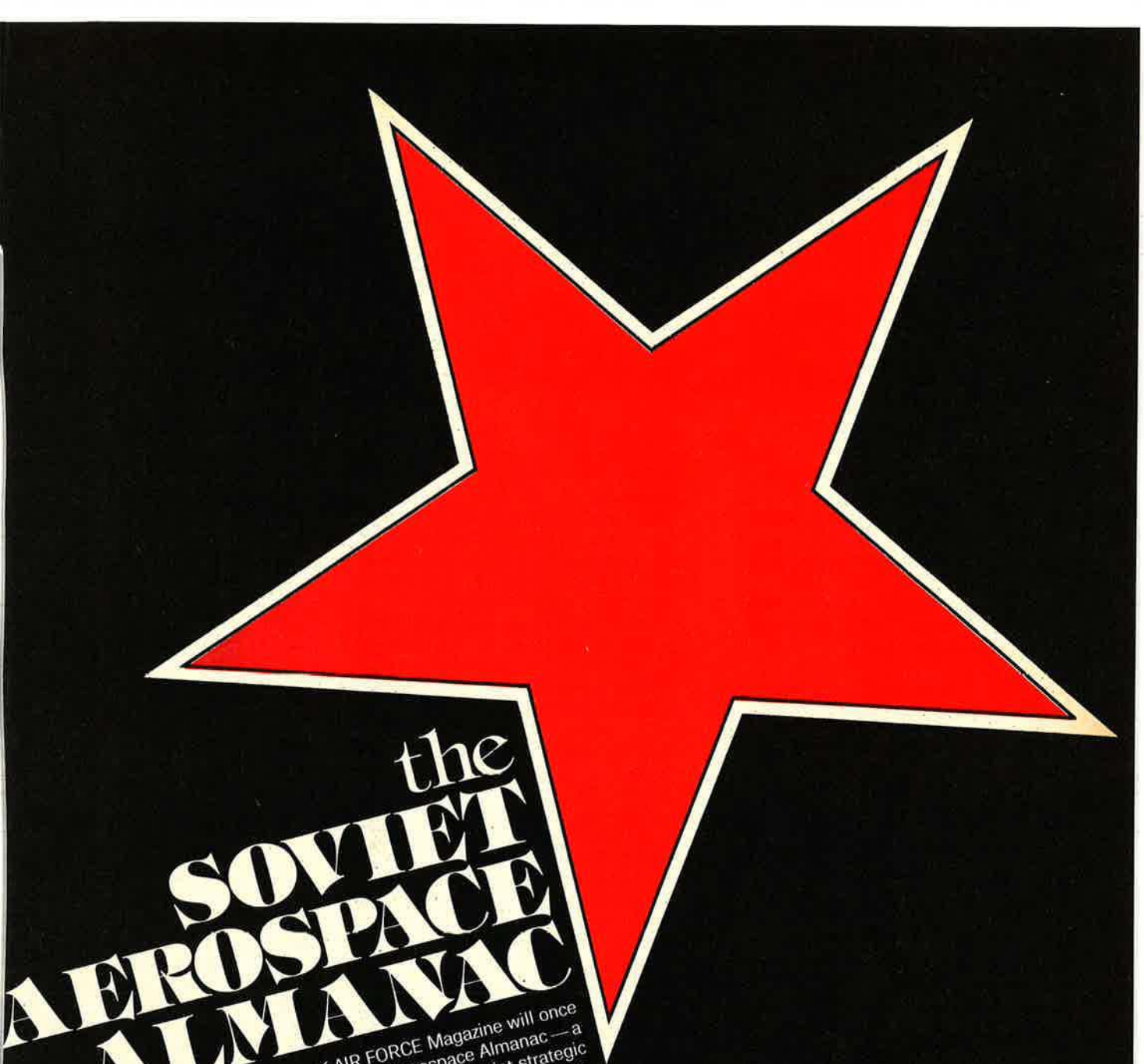
In view of the fact that the GHQ Air Force was to be organized, the FAC refrained from commenting directly on the matter of an independent air force. However, it did state: "It must be noted that there is ample reason to believe that aircraft have now passed far beyond the former position as useful auxiliaries, and must in the future be considered and utilized as an important means of exerting directly the will of the Commander in Chief. An adequate striking force for use against objectives both near and remote is a necessity." Once again, the principle of an independent air force was expressed.

AACMO, by its disclosure of deficiencies in the Air Corps, triggered actions by the War Department, the Congress, and the President that caused a tremendous upsurge in the technical development and performance of aircraft.

Thus, the tools, in the form of greatly improved fighters and bombers, were provided the USAAF. Operating as a separate air force in World War II, these tools enabled it to destroy German industry, the Luftwaffe, and the will of the German people to effectively resist, and in cooperation with the US Navy to defeat Japan.

Those successes, together with the continued pressure and persuasion of Generals Arnold, Spaatz, Kenney, George, McNarney, Eaker, Norstad, and Kuter, along with their converts—President Truman, Generals Marshall, Eisenhower, MacArthur, and many members of Congress—gave sufficient impetus to the movement toward a Department of the Air Force to convince Congress to enact the necessary legislation—the National Security Act of 1947.

General Foulois's "yes," when asked if the Air Corps could carry the mail, set forces in motion that provided the means for the USAAF to prove in combat that it was capable of assuming the role of an independent United States Air Force.



the SOVIET AEROSPACE ALMANAC

The March issue of AIR FORCE Magazine will once again feature The Soviet Aerospace Almanac — a comprehensive examination of Soviet strategic and tactical aerospace forces, including organization, deployment, missions, doctrine, and concepts ... key military leaders ... Soviet R&D ... military space applications ... analysis of total military-related expenditures ... statistical data on Soviet aerospace forces and budgets ... a "Jane's" prepared Gallery of Soviet Aerospace Weapon Systems ... plus other features ... a must for military planners ... a year-round reference issue ... a great advertising opportunity. Closing for reservations is January 27, copy by February 8.

AIR FORCE MAGAZINE

PUBLISHED BY THE AIR FORCE ASSOCIATION

Airman's Bookshelf

A Return to Geopolitics

The Geopolitics of the Nuclear Era: Heartland, Rimland, and the Technological Revolution, by Colin S. Gray. Published for the National Strategy Information Center, Inc., by Crane, Russak & Co., New York, N. Y., 1977. 67 pages. $2.95 paperbound.

Thirty years or so ago, most military people—at least those who had attended a service school—had a nodding acquaintance with geopolitics. If they remembered nothing else, they could recall Sir Halford Mackinder's geopolitical dictum:

Who rules East Europe commands the Heartland;
Who rules the Heartland commands the World-Island;
Who rules the World-Island commands the World.

After World War II, geopolitics fell into disrepute, partly because of confusion between it and the *Geopolitik* of Karl Haushofer whose *Institut für Geopolitik* at Munich furnished Hitler with a rationale and propaganda for expansionism; partly because of the arrival of nuclear weapons and intercontinental delivery systems that seemed to negate Mackinder's formulation. (Mackinder saw geopolitical concepts as contributing to achievement of a stable balance of power, in contrast to Haushofer's view of the state as an expanding organism.)

Although little has been written (or thought) about geopolitics in many years, US policymakers—consciously or unconsciously—acted on geopolitical principles in developing post-World War II foreign policy. The objective of "Containment" was to prevent the USSR, which now ruled both East Europe and Mackinder's Heartland (approximately the central half of the USSR) from breaking through the Rimlands to control the World Island of Eurasia plus Africa; hence the world. Today, the tendency of our policymakers is to treat local conflicts or incidents in isolation from their larger meaning.

Colin Gray's purpose is to introduce—or reintroduce—his readers to the classical writings on geopolitics (reinterpreted as necessary in a technologically advanced era) as a means of fostering global thinking about policy issues. A member of the staff of Hudson Institute and a frequent contributor to this magazine, Dr. Gray is not a geographical determinist except in the qualified sense that "foreign and defense policy are substantially determined by political culture, and political culture is very largely the product of national historical experience, which—in its turn—reflects evolving national geographical circumstances." Mackinder's progression of command does not have the inevitability of cosmic law, but a study of geography in a political context does give clues to a great power's style and objectives, and to probable long-term consequences of its actions and an opponent's counter-actions or lack of them.

Among the conclusions that emerge from Dr. Gray's geopolitical perspective are that "conflict between East and West is a permanent premise in Soviet thought," that "Americans should think of their forward NATO commitment as a *permanent* investment," and that NATO itself needs to abandon its parochial orientation for a more nearly global strategy. If the Western maritime powers allow the USSR, traditionally a land power, to beat them at their own maritime game, seize control of the Rimlands, and exclude them from presence or influence in the World Island, it will not be due to any lack of capability. It will be because of "the pusillanimous [and fragmented] character of the Western response" to the Soviet challenge, both of which can be at least partially explained in geopolitical terms.

—Reviewed by John Frisbee, Executive Editor.

The Soldier-Scholar

American Defense Policy, Fourth Edition, edited by John E. Endicott and Roy W. Stafford, Jr. The Johns Hopkins University Press, Baltimore, Md., 1977. 626 pages with glossary and index. $22.50 hardcover, $7.95 paperback.

This volume is a straightforward reader on defense policy ideas, intended mainly for undergraduate studies but suitable in some graduate courses as well. The text of this fourth edition is essentially new. Excerpts from policy documents have been furnished as a context for strategy discussions, and more attention has been given bureaucratic processes from management techniques to weapons acquisition.

As with the preceding edition, the book aims at bridging the soldier and scholar roles of the military officer. Facilitating this aim, suggested Professor Richard F. Rosser in his foreword to the third edition is the fact that, notwithstanding natural tension between them, these two roles are basically compatible. "The soldier-scholar searches for new answers to defense problems but ultimately acquiesces in the decision of his civilian and military superiors. The role of the soldier always must prevail."

In helping prepare the soldier-scholar with an analytical basis for participating in the defense policy process, editors Endicott and Stafford, both Associate Professors USAF Academy's Department Political Science and Philosophy have culled material from spokesmen in Executive departments, Congress, the military, and academe. While of various persuasions, the positions expressed in this volume are generally mainstream and most have been previously published.

The material has been organized into nine chapters covering such areas as the international conte

of US defense policy, strategy evolution, bureaucratic decision-making, historical changes in the military institution, and case studies. Former and current political science faculty members at the Academy introduce each of the chapters, in many cases including an overview of chapter contents.

—Reviewed by Capt. Anthony Lynn Batezel, Contributing Editor.

New Books in Brief

ACTA No. 2, edited by Robin Higham and Jacob W. Kipp. The International Commission for Military History met in Washington in August 1975, and the results of the conference are printed in this summary of proceedings. Thirty-nine delegates from throughout the world presented papers on a wide range of military history topics. Military Affairs/Aerospace Historian Publishing, Kansas State University, Manhattan, Kan. 66506, 1977. 198 pages. $15.

Another World 1897–1917, by Anthony Eden. This is the former British Prime Minister's last autobiographical work. It chronicles his early years, from a peaceful, happy childhood and school days at Eton to devastating experiences he encountered during World War I. Photos. Doubleday & Co., Inc., Garden City, N. Y., 1977. 175 pages. $7.95.

Aviation Badges and Insignia of the United States Army, 1913–1946, by J. Duncan Campbell. This volume covers the origin and development of military aviation badges and insignia for the Aviation Section, Signal Corps; the Air Service; the Air Corps; and the World War II Army Air Forces. Text contains original National Archives sketches, with most badges and insignia shown in actual size. Appendix, bibliography. Triangle Press, Penbrook, Harrisburg, Pa. 17103, 1977. 87 pages. $7 paperback; $12 hardcover.

Fighter Pilots of World War I, by Robert Jackson. Fifteen fighter pilots who distinguished themselves during World War I are featured. Includes a glossary of aircraft. St. Martin's Press, New York, N. Y., 1977. 150 pages. $8.95.

(The American Fighter Aces Association will shortly publish a large commemorative volume covering American fighter aces from World War I through Vietnam. Includes biographical sketches, listings of all US aces, and photos of aces and their aircraft. The book is an embossed, hardcover limited edition. Cost is $30. Orders may be placed with: Wm. N. Hess, Recording Secretary, AFAA, P. O. Box 61268, Houston, Tex. 77208.)

Fleagle: The Son of a Ruddy Duck, by Stan Hardison. Here are the delightful antics of Fleagle, the cartoon creation of the author, who is art director for Tactical Air Command's TAC ATTACK, and who first used Fleagle to illustrate safety in the TAC magazine. Includes a foreword by Milt Caniff. The Donning Co., 253 West Bute St., Norfolk, Va. 23510. 158 pages. $2.50.

Ford Tri-Motor All-Metal Monoplane. Originally published in 1929 by the Airplane Division of the Ford Motor Co., this special reissue will interest aviation history buffs and others who recall passenger flights in the 1930s. Includes specifications, operating instructions, servicing, fuel and oil systems, electrical systems, instruments, equipment, and assembly for the Ford Tri-Motor monoplane, the workhorse for 1930s air travelers. Photos, illustrations, index. Reissued by Post-Era Books. Available from Aviation Book Co., 555 West Glenoaks Blvd., Glendale, Calif. 91202. 114 pages. $10.

Ghost Squadron, CAF *Dispatch.* This book is published twice a year as a digest of the Confederate Air Force's *Dispatch* Magazine. It chronicles what the CAF is trying to do: namely, preserve a complete, flyable collection of World War II combat aircraft used by all US military services during the war. This volume includes stunning color photos and text for many old-time fighter aircraft. Association Service Corporation. Available from CAF *Dispatch,* 2202 Oakhill Rd., San Antonio, Tex. 78238, 1977. 120 pages. $5.

The Giants: Russia and America, by Richard J. Barnet. The author, who was formerly with the Harvard Russian Research Center and was an adviser in the State Department during the Kennedy Administration, discusses the latest stage in Soviet-US relations, how it came about,

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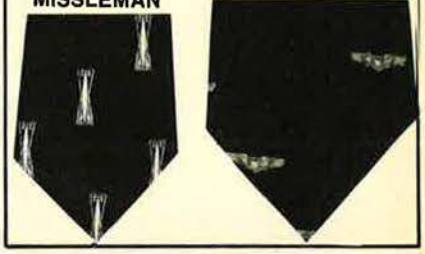

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Airman's Bookshelf

and where it is headed. To arrive at an understanding of détente, the author analyzes sixty years of coexistence. Index, bibliography. Simon and Schuster, New York, N. Y., 1977. 190 pages. $8.95.

"Historical Highlights from Space," narrated by Hugh Downs. This 36-minute audio cassette records the authentic sounds and voices heard during twenty years of space exploration, from Sputnik and John Glenn to Apollo and Soyuz. Royalties will go to the nonprofit National Space Institute, an organization founded by the late Dr. Wernher von Braun to communicate the benefits of the space program to the general public. The cassette is currently being offered over-the-counter at the Kennedy Space Center and at the National Air and Space Museum at a higher price. To order, send a check or money order for $3.50 to: Historical Highlights from Space, P. O. Box 31251, Washington, D. C. 20031.

No Need of Glory, by Regis A. Courtemanche. This is the story of the North American and West Indian Station, one of eight foreign naval bases maintained by Britain during the Civil War, and commanded by Vice Adm. Sir Alexander Milne. His firm and tactful leadership enabled Britain to maintain a policy of neutrality during the war. Notes, subject and ship indices. US Naval Institute Press, Annapolis, Md. 21402, 1977. 204 pages. $13.95.

Nuclear Strategy and National Security Points of View, edited by Robert J. Pranger and Roger P. Labrie. Debate over nuclear strategy and national security policy is taking place between two schools of thought, the authors say. The schools are those who would rely on the threat of massive nuclear destruction as the best deterrent and those who would bank on a more comprehensive deterrence ranging from early tactical use of atomic weapons and limited strategic exchanges to more widespread destruction. The book contains official documents, policy statements and informed analyses of nuclear weapon policies and their relationship to US security. The rationale behind current nuclear strategy, the increasing vulnerability of fixed land-based missiles, and the feasibility of civil defense are examined individually and in relation to SALT. American Enterprise Institute for Public Policy Research, 1150 17th St., N. W., Washington, D. C. 20036. 1977. 515 pages. $6.75.

Nuclear Weapons and World Politics, by David C. Gompert, Michael Mandelbaum, Richard L. Garwin, and John H. Barton. Fifth in the 1980s project series, this book discusses four drastically different nuclear weapons futures, from a world in which these weapons are widespread to one in which they are totally eliminated. The project is being conducted by the Council on Foreign Relations. Appendix, index, glossary. McGraw-Hill Book Co., New York, N. Y. 1977. 370 pages. $10.95 hardcover, $6.95 paperback.

The Officer's Handbook: A Soviet View, edited by General-Major S. N. Kozlov. Thirteenth in the Soviet Military Thought series, published under USAF auspices, this volume is intended to assist Soviet officers in broadening their outlook and in resolving problems related to the training and education of subordinates. It also covers Soviet military psychology, key terms in Soviet military thought, Soviet concepts of cadre organization, centralization, and unity of command, data on the legal status of Soviet active-duty and reserve officers, and much more. Available from the Superintendent of Documents, US Government Printing Office, Washington, D. C. 20402, 1977. 358 pages. $4.

World Power Assessment 1977: Calculus of Strategic Drift, by Ray S. Cline. The former Deputy Director of the CIA examines the strategic direction in which nations and alliances are drifting in the 1977 and recalculates the critical factors in international power relations, introducing new evidence essential to the power equation. Index, notes, charts. Westview Press, 1898 Flatiron Court, Boulder, Colo. 80301. 1977. 206 pages. $12.75.

—Reviewed by Robin Whit

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The Bulletin Board

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

AFers Get Wartime Jobs

If the balloon goes up, the Air Force will be in a difficult manpower situation. The work week, of course, will automatically jump from forty to seventy-two hours. Even so, for certain skills—security police, medical, and engineers are examples—immediate requirements would not be met. Question: How to plug this gap and thereby increase readiness?

The Air Force's answer, recently adopted following lengthy study and planning, is a project called WARSKIL. The first phase is being launched this month when certain members serving in various support skills will receive on-the-job training in specific "wartime-critical" functions at their present bases. The OJT will last up to ten days, followed each quarter by two to three days of additional training. If war should come, they'd serve in their new skill—WARSKIL.

The first trainees are being drawn from staff sergeants and below in four skills—accounting, computers, personnel, and administration. Planners explained that they represent younger, less-experienced people who can be spared from their primary jobs, at least during the first month or two of a war.

From these four job areas and others to be added later, the E-5s and below will be chosen—volunteers are preferred—for OJTing into one of the following six skills USAF calls "significant wartime shortfalls": pavements and construction equipment operators, both in civil engineering; air cargo specialist; law enforcement; medical services; and medical administration. Others, such as weapons loaders, may be added later, officials told AIR FORCE Magazine.

But why these particular six? They explained that all are "non-technical skills that lend themselves to OJT. The engineering skills are required for rapid runway repair, the air cargo people to load C-5s and C-141s, the medical people to handle casualties, and the security forces to deal with the increased security and base defense roles."

USAF isn't rushing WARSKIL. For the two civil engineer skills, for example, about 900 airmen at twenty bases will soon receive their initial OJT. Eventually, the Air Force may use up to 6,000 security police WARSKIL augmentees in a war, but initially it's limiting the January-March OJTing to about 800 of them.

WARSKIL, while it envisions a conventional war in Europe, also includes "CONUS sustainment." Thus, the plan calls for regular security police forces to fight the war and "WARSKIL augmentees" protect CONUS resources."

Each USAF member below [illegible] nel, whether or not trained into a particular WARSKIL, will receive a WARSKIL specialty code. For mo

Air Force authors of outstanding technical papers received AFA awards at Wright-Patterson AFB, Ohio, recently. The occasion was the AF Systems Command 1977 Science and Engineering Symposium. Participants included (from left) Assistant AF Secretary (R&D and Logistics) Dr. John J. Martin; Maj. Gen. Gerald K. Hendricks, the AFSC Science and Technolo Director; 1st Lt. Dale D. Burchby, Edwards AFB, Calif.; Capt. Robert F. Hoeberling, Kirtland AFB, N. M.; Glenn W. Williams, Wright-Patterson; AFA National Director Jack Withers; and Edward L. White, Wright-Patterson. Besides Burchby, Hoeberling, Williams, and White, Drs. Robert B. Miller and David C. Straw, both from Kirtland, also received AFA awards.

of course, it will be his/her regular AFSC.

Headquarters officials say the program will give young airmen a chance to learn another skill and broaden their military experience. Lt. Gen. Bennie L. Davis, the Hq. USAF DCS/Personnel, has urged commanders to sell the program actively and provide realistic training. Don't give the augmentees all the dirty jobs, but use them in deployments, he said.

"WARSKIL," General Davis told recent commanders conclave, will build on current on-going augmentation programs (*i.e.*, the Reserve forces) to permit tracking of trained personnel so our investment isn't lost."

Recruit Attrition Heavy

About forty percent of all non-prior-service (NPS) youths who enlist in the US armed services don't complete their enlistments. Some leave for medical reasons, others for dependency or hardship. But the vast majority depart for what the Defense Department calls "failure to meet minimum behavior or performance standards."

Among new recruits without high school diplomas, the early dropout rate tops fifty percent. Many leave before completing one year of a three- or four-year hitch.

That's the sad story told recently by Dr. John P. White, Assistant Secretary of Defense (Manpower, Reserve Affairs and Logistics). Though he said there is a service-wide drive afoot to improve these figures, he noted that the turnover among young people in private industry is "about the same or higher." Still, it's an extremely costly business to the taxpayers, the military budget, and overall readiness.

AFA Believes . . .

Veterans Administration—A New Spirit

Recently, AIR FORCE Magazine, along with other association representatives, met with Veterans' Administrator Max Cleland and his department heads. The occasion was the first "how-goes-it?" look at the VA since the new Administrator took over on March 2 of last year.

In our opinion, it's going rather well. A new spirit can be sensed in the long brown halls of the VA's Washington headquarters, a spirit that has to be tied to the appearance of Max Cleland on the scene.

Style is not substance, of course. Activity is not action. No one man can completely recast the largest independent agency in government, with almost a quarter of a million employees and an annual budget of more than $19 billion. Not in less than a year. But in our opinion Max Cleland's Administration is off to an impressive start.

A former Georgia state senator and later a staff member of the Senate Committee on Veterans' Affairs, Cleland, at age thirty-five, is the youngest Administrator—and the first Vietnam veteran—to head the VA. He is a triple-amputee, wounded at Khe Sanh, and was a patient in VA hospitals for some eighteen months.

But performance is the yardstick, and, to date, the performance is encouraging. Gathering a top-notch staff, Max Cleland has, in his short tenure, attempted to make the VA truly responsive to those it is chartered to serve—nearly 30,000,000 veterans plus their dependents and survivors of deceased veterans—a potential clientele that includes nearly half the US population.

Item—Responsible for the largest medical system in the country, Cleland endorsed in November a space-age experiment in biomedical communications, a satellite broadcast network linking some thirty-seven community and VA hospitals in twelve western states, from Alaska to the Mexican border. Via a satellite parked 23,000 miles above the Pacific Ocean, telecasts to the hospitals will be possible from various points in the nation. Physicians in the most remote area of the serviced region will have immediately available the same consultants and other professional resources as their more geographically favored colleagues.

Item—Recognizing that the bulk of VA hospital patients are in the forty-sixty age group, the VA has launched major studies that will make it the preeminent source of information on problems and modes of treatment for the aging patient.

Item—With one of the largest education programs in America and a compensation and pension program that distributes more than $8 billion a year to more than 5,000,000 veterans and survivors, the record-keeping task is monumental. To improve it Cleland has contracted for a nationwide computer system called Target, which, when Phase I is fully implemented by January 1979, will link fifty-six regional offices in forty-nine states with centers in Los Angeles, Philadelphia, and Chicago. The system will be able to call up information needed for processing benefit claims in *seconds* compared to the week or more now needed with the current files system. The new system will be partially operational by mid-year.

Item—At the end of 1977, Cleland completed a project begun prior to his administration—a statewide toll-free telephone service to VA offices for veterans or their dependents. This service, listed under "U. S. Government" in local phone books, puts the VA at the customer's fingertips.

Item—Cleland has moved to make the National Cemetery System more equitable and more accessible. For example, when VA took over the system, there were only 2,500,000 grave sites—a figure that has since doubled. Five new cemeteries are being developed and at least two more are to come. Twelve others have been expanded. Cleland's aim is to put national grave space within the geographical reach of the majority of veterans, recognizing that more than 13,000,000 will be eligible for this service between now and 2000.

But perhaps this new spirit at VA can best be summed up by a film, produced in-house, which was premiered at the meeting. It is entitled "VA—May I Help You" and it is the keystone of a six-month-long campaign aimed at emphasizing the personal commitment needed by VA employees to deal with their customers. It tells every employee exactly why the VA is in business by imaginatively depicting the services it performs. It would be a good primer for anyone interested in the VA. (AFA Chapter Presidents who wish to borrow this film for a meeting should contact their nearest Director of a VA Regional Office or hospital.)

Along with the film, there are posters, stickers, and lapel pins to carry the message into all VA work areas. But these are only the outward trappings. What Max Cleland wants is spelled out in a personal letter to his people, reminding them that the customer is entitled to service that is "competent, courteous, and compassionate." Max Cleland, who not too long ago was one of those customers, says, "This campaign is my way of letting employees know that this is a new time with a new feeling in VA. Pride in work counts. Together, we'll let veterans know it, too."

There indeed appears to be a "new feeling" in the VA operation. It's too early to applaud results. But we applaud the attempt. It's long overdue and it appears to be off to a successful start. We wish Max Cleland all the best in this effort.

—JAMES A. MC DONNELL, JR.

The Bulletin Board

Air Force's attrition rates, of course, are lower than the other services. Though they have varied from year to year, the several-year average is about twenty-two percent among high school graduates and forty-eight percent among non-graduates during their first terms. But since nine out of ten Air Force recruits are high school grads, USAF's NPS attrition rate among all its first-termers has averaged about twenty-seven percent. Though the best among the services, Air Force officials would like to improve it.

All the services, aware that poor producers and troublemakers are heavily concentrated in the non-high school graduate group, have pointed their recruiting guns at the diploma contingent. But only Air Force has enjoyed reasonable success. During FY '77, for example, eighty-eight percent of its NPS entrants were diploma holders. The [illegible] nine and seventy-two percent, respectively.

By reducing first-term attrition, the services hope to cut the number of new recruits. They're all planning to boost the intake of young women Defense officials feel are more likely to complete their enlistments (for more on USAF's plans for utilization of women, see "Widening Horizons for Air Force Women," p. 32).

Training, Education Plans Unveiled

Look for modest reductions in the number of officers the Air Force enters in its Professional Military Education (PME) program in the future. Likely to be hit are entrants into the Air War College and command- and staff-level schools, Maj. Gen. Charles G. Cleveland told AIR FORCE Magazine recently.

The Hq. USAF Director of Personnel Programs also said Air Force plans to maintain its present 1,200 graduates per year rate from the Senior NCO Academy. This means continuation of the thirteen percent overall attendance opportunity for USAF's 14,000 E-8s and E-9s.

On the officer graduate education front, General Cleveland said the service will try hard to maintain its in-school "load" authorization—the total number enrolled—above the 1,000-member mark. A decade ago some 2,500 USAF officers were in the program, but under heavy flak from Congress and the Defense Department, the authorization has been steadily reduced. The current load is about 1,070.

Air Force officers, meanwhile, will garner an estimated 8,000 additional graduate degrees this year and next—ones they will have earned on their own via the GI Bill or the tuition assistance program. But, General Cleveland said, this doesn't fill all of USAF's needs. There will still be a shortage of officers with the specific degrees required for many technical and scientific jobs.

Formal training Air Force-wide is also under Cleveland's staff jurisdiction, is in for some changes. He cited planned increases in AFROTC, OTS, and pilot training (UPT) production, as follows:

(1) AFROTC—from 2,650 graduates this fiscal year to 2,980 in FY '79 and about the same thereafter; (2) OTS—from 690 last year to more than 1,500 this year, with

Ed Gates . . . Speaking of People

Should Your Ex-Spouse Get Your Benefits

"Marriage is an economic partnership" to which the wife "made a significant contribution to the service member's ability to perform his job and consequently earn wages and benefits." But when the marriage is dissolved, "present policy recognizes no obligation to the woman." She receives none of the military benefits provided her former spouse nor, when he retires, any portion of his retirement pay.

That's the nub of a complaint receiving attention from Rep. Patricia Schroeder (D-Colo.), other members of Congress, women's groups, divorce attorneys, and others. Their immediate remedy: enact legislation that will require the government to extend medical and dental care to the divorced spouses of military personnel. And they have waiting in the wings a plan to give such divorcees a share of the service member's retirement pay.

Supporters of these changes hold that far too many ex-wives are suffering financial hardships because their service-member husbands failed to provide reasonable support. So, they insist, it's time for the government, more particularly the Defense Department, to see that it's done. The military, not surprisingly, has little taste for getting involved in this no-win thicket, which some officials regard as an out-and-out welfare project.

While Representative Schroeder is quarterbacking the aid-the-divorced-spouse drive, other lawmakers, such as Rep. John L. Burton (D-Calif.) and Rep. G. William Whitehurst (R-Va.) are actively supporting it. Their immediate goal is to secure passage of H.R. 8258, which provides the aforementioned medical and dental care in cases where the marriage lasted at least twenty years.

Hearings on H.R. 8258 were held this past November House Armed Services subcommittee, but it issued no re While the group shelved the measure at least tempor there were indications the bill may be revived if suppo apply enough pressure. Military officials, meanwhile, the plan will remain on the shelf permanently. Approv Congress, some fear, could be but a first step toward g tens of thousands of divorced spouses commissary, exch club, and other military benefits, as well as part o government pensions their former husbands draw for a time.

Representative Schroeder earlier last year introduc bill that would entitle divorced, unremarried spouses o Service employees who were married at least twenty to a pro-rata share of the employee's retirement annuit death benefits.

Refinements to that bill are scheduled to be the su of hearings early this year of a House Post Office and Service subcommittee. The measure, if it becomes law

- Lower the twenty-year marriage requirement to bu years.
- Require the government to honor state court o that consider pensions joint property subject to division. ever, if the courts refuse or fail to include the retir

further increases" thereafter; and
3) UPT—from 1,000 each this year
nd next to 1,175 by 1980 and hope-
ully more thereafter.

UPT flight simulator testing, now
nder way at Reese AFB, Tex., is
oing smoothly and will be ex-
anded to other training bases, he
ndicated. While it means seventy-
ve hours in the simulator for each
rainee, it reduces each one's actual
ying time by forty hours. And this
eans considerable savings in op-
rations and maintenance costs.

SAFers Cool on VEAP

The Veterans Education Assis-
nce Program (VEAP), the succes-
or to the GI Bill, became effective
year ago. Service newcomers, if
ey elect to participate, must con-
bute $50 to $75 per month. The
overnment later will match the
tal contribution two-to-one, thus
roviding an educational kitty for
e participant.

But Air Force newcomers have
oided VEAP like the plague. As
October, fewer than 300 new
SAF members had embraced the
an, compared to nearly 20,000
ldiers and about 9,000 sailors.
owever, the Air Force isn't plan-
ning to bend any arms. It has been informing new members about VEAP and explaining the provisions, nothing more. Starting about now, each new member as he or she completes one year in service will be reminded again of the VEAP option.

Many reasons are given to explain the lack of interest. Probably the main one: earlier, in appraising the likely impact of VEAP, the Air Force secured additional tuition assistance funds. Many of the newcomers are using them to cover off-duty education fees.

GI, WASP Measure Now Law

The President signed the GI Bill Improvement Act of 1977 into law November 23. Its 6.6 percent boost in education payments will have shown up in December checks. Rep. Olin Teague (D-Tex.), the House floor manager of the measure, rejected charges that the rates are too low for veterans attending schools with extremely high costs.

The new statute also extends VA benefits to the World War II Women's Airforce Service Pilots (WASPs) and "other similarly situated groups" (a long-sought AFA goal). However, the Defense Department must certify that the service performed constitutes active-duty time and issue honorable discharges. (*See last month's "Bulletin Board" for other provisions in the new law.*)

It's possible that future GI education tuition adjustments may be tied to the annual cost-of-living index, the way military pay increases are handled. H.R. 10072, sponsored by Rep. Michael J. Harrington (D-Mass.), would do the job.

House Armed Services Committee action late last year sent H.R. 8647 to the House floor for an expected early vote. It allows CHAMPUS to share the cost of medical bills up to the ninetieth percentile. CHAMPUS now pays only its share of bills up to the seventy-fifth percentile. The change, if okayed by Congress, should encourage more doctors to participate in CHAMPUS and thus save patients money.

The Committee also voted to scrap the ancient law that bars military bandsmen from moonlighting in their specialty. But there's opposition to this AFA-endorsed measure. A floor fight could erupt.

Other new military-veterans bills

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ty as part of marital property, the ex-spouse will auto-
ally receive a pro-rata share of the civil servant's pen-

Allow employees to designate a former spouse as re-
it of survivor benefits (at time of retirement or at time of
vorce).

Require the former spouse to apply to the Civil Service
nission within ninety days of the divorce to qualify for
on sharing.

ile this bill applies only to civilian employees, the Colo-
lawmaker said she "will introduce similar legislation for
ilitary and the foreign service."

ne supporters of such "spouse" legislation would go
r and delete the twenty-years-of-marriage requirement
ly. Then, pensions could be garnisheed regardless of
ngth of the union. Embracing this position is Henry H.
, Jr., of the American Bar Association. In remarks to
ess last year, he declared that "unless the twenty-year
ement is abolished, grave injustice will be unnecessarily
id on many wives whose marriages were of shorter
on."

his rhetoric, of course, has considerable appeal among
n's groups and lawyers. According to a recent report
siness Week, "many divorce lawyers routinely regard
ns as a part of the kitty subject to distribution. . . ."

haping her case for reform, Representative Schroeder
men hire women to bear and rear children and to do
vork because they are physically incapable of the first
cause their time is too valuable to devote to the second
ird. Women hire men to be breadwinners and to earn
ges which they are generally not able to command."

calls divorcees "the new poor," claiming that only
n percent of them receive alimony. She also points
at the US divorce rate is soaring, particularly among
s who have been married for many years. Liberalizing legislation is also needed, she maintains, because of the increase in no-fault divorce settlements. In other words, too many bad guys get off free. Opponents of that position, of course, could point out that wives can also wreck a marriage and stick the ex-husband for a stiff settlement that keeps him financially strapped.

Government figures show that 5,000,000 women over sixty-five live alone and half of them subsist below the official poverty line, Representative Schroeder says. Since "marriage is a partnership in which each spouse makes a different, but important contribution . . . it is time . . . [the idea] became embodied in law," the spouse bill champion declares.

Military officials agree that the going is rough for many military ex-wives, but that it is hardly up to the Defense Department to rectify the situation. "This is a matter for the courts," one source told AIR FORCE Magazine. He said H.R. 8258 and related bills would also create new administrative headaches and make the already tough health care problem worse. "There aren't enough service physicians and dentists now to care for those presently eligible, and the doctor situation is worsening. So it's not the time to add thousands of additional would-be patients to the eligibility list," he said.

A spokeswoman for Representative Schroeder countered that "this may be so, that there may be some inconvenience and it will cost money. But the congresswoman feels that what is right is right, and that corrective action must be taken."

Asked to comment on spouse-type proposals, another military source said, "If the government wants to help these women—and they are as deserving as many of the groups it is already subsidizing—it shouldn't dump the problem in the lap of the military, which is already overburdened and quivering under a tremendous budget crunch. Put the matter where it belongs, on the government's welfare agency, the Department of Health, Education and Welfare." ■

The Bulletin Board

of note that have been introduced include:

• H.R. 9892 (Rep. John N. Erlenhorn, R-Ill.) establishes a central organizational unit in the Pentagon to run the military's dependent schools.

• S. 1688 (Sen. George McGovern, D-S. D.) provides special psychological therapy, counseling services, and follow-up treatment for Vietnam-era veterans and their dependents.

• H.R. 9432 (Rep. Robert L. Leggett, D-Calif.) authorizes extra medical and dental care for Reservists and Guardsmen.

• H.R. 9865 (Rep. Mark W. Hannsford, D-Calif.) removes the requirement that Junior ROTC students be US citizens.

• H.R. 9846 (Rep. B. F. Sisk, D-Calif.) allows servicewomen who volunteer and are qualified to serve in "all duty assignments." For more

New Hike Regs "Must" Reading

Hq. USAF officials urge all officers wanting to understand the complexities of the officer promotion system to get acquainted with new AFRs 36–11 and 36–89. They've been completely overhauled and, while they change few policies, should answer any promotion question a person might have—except possibly the answer to "Why wasn't I promoted?"

The appearance of the new directives doesn't mean Air Force has "given up" on passage of the Defense Officer Personnel Management Act (DOPMA), a Hq. USAF personnel official told AIR FORCE Magazine. Under DOPMA, the confusing dual promotion (temporary and permanent) program would be merged and simplified; the new regs would be altered substantially.

Aerospace Course Coming Up

About fifty persons are expected to attend the second annual Civil Air Patrol-sponsored Aerospace Education Leadership Development Course, July 9–24, 1978, at the Air University, Maxwell AFB, Ala. Meanwhile, the forty-eight graduates of last summer's first course are providing active leadership in aerospace education throughout the country, according to CAP officials.

The Colorado AFA state organization and the Front Range and Flatirons Chapters helped three of last year's course attendees financially, and all have become involved in aerospace education. They will serve as directors of aerospace education workshops this year. (AFA National also sponsored an AFJROTC instructor's attendance at the course.)

More Bases Opened to Women

Air Force has come out with a new, expanded list of bases to which enlisted women may be assigned. At most sites, Stateside and abroad, there is no limit on the number who may be assigned. This includes Loring AFB, Me., many other remote sites, and the major northern tier installations. The "no limit" rule applies to most sites in Germany and to such places as Misawa AB, Japan; Izmir, Turkey; Lisbon, Portugal; the US embassies [illegible] bases in Alaska.

Reserve Bonuses Begin

For years military officials and some lawmakers have insisted that bonuses for the Reserve forces would improve personnel retention, even bring the components up to authorized strength. (AFA has supported this idea.)

Now, starting the first of this month (ending next September) they'll find out if they were correct. On that date, reenlistment bonus offers were to start for first-termers of selected Army Reserve and Guard units whose hitches are expiring. The maximum bonus pays $1,800 for six more years' service, half that for three years.

This is a test, high on the Pentagon's priority list. It is being conducted by the Defense Reserve Compensation System Study (RCSS), a high-level panel searching for ways to improve the Reserve pay system and in that way improve component retention.

Test results will be compared with re-ups in other Army component units where no bonus is offered. If successful, re-up bonuses may be extended to the other Reser forces. Rear Adm. Richard G. A mann, who heads the RCSS, also looking for money to allow t services to offer enlistment bonus to prospective Reservists a Guardsmen.

All the Selected Reserve forc remain below authorized levels. T Army Reserve and Guard are in t worst shape, the reason they we chosen for testing. The USAF R serve at a recent reading was 2,2 short of its 52,000-member auth ization, a four percent deficit. T Air Guard, with 91,200 membe against an authorized 93,300, w only two percent short.

The reenlistment test progra has been criticized because, unc rules laid down by Congress, F servists who previously served active duty are ineligible f bonuses. Also ineligible are me bers of the Individual Ready F serve, including some 65,000 IRRe in the USAFR. Defense Manpow chief Dr. John P. White has call the IRR shortages "very serious.

Admiral Altmann's RCSS rep on Reserve-Guard compensation slated to go to the President June.

Recruiter Helper Plan Expand

Last fiscal year nearly 3,400 " cruiter helpers" returned to th hometowns for two weeks to h regular USAF recruiters nail do good prospects. This assistan according to the Air Force Recr ing Service, accounted for about enlistments per helper.

But this year, officials have beg sending the first of 5,000 m helpers back home, and they pect each helper will average enlistments. The helpers—all vol teers and first-termers with g records—get in good licks at th former high schools where t know many students.

Altogether, Air Force is look for 75,000 recruits in FY '78. campaign is off to a good st Maj. Gen. Charles G. Clevela Director of Personnel Program Hq. USAF, told AIR FORCE Ma zine.

Short Bursts

The Air Force is setting up **tiree affairs offices and reti councils** at all Stateside bases. part of an expanded retired ac

ies program, long in the making, ut now set to fly. The idea is for etirees to get involved—act as ommunication links between the ase and community, campaign for he Air Force Assistance Fund, help ther retirees and survivors, etc. Retirees interested in participating hould contact local Central Base ersonnel Offices.

A **"fully qualified first sergeant orce"** is a major Air Force goal. ut more high-quality master ser- eants and E–9 selectees are eeded to train into the first ser- eant AFSC. A base of choice and two-year stabilized tour are the ain incentives offered volunteers.

Before USAF laid on its "con- olled" OER system more than two ears ago, officials planned to give **fficers on the Hq. USAF Air Staff** n extra share of the top ratings. he rationale: Since Air Staffers as group have the best records, they eserve a larger share of the better atings. But when field commanders omplained, the service withdrew ne favored status. However, offi- als suggested that promotion oards would recognize the Air taffers and give them a break. nd that's what has happened, at ast with the recent temporary ght colonel selections. The stats ow that Air Force-wide, fifty- ven percent of all line officers nsidered for the first time were selected. But among those serving at bases and commands, only fifty-four percent were chosen; of those with joint commands, fifty-nine percent were selected; of those with DoD agencies, the rate was sixty-three percent. And the Air Staff? A whopping seventy-seven percent made the prize list!

For another year the service has decided not to conduct **sports championships.** Ten of them were erased in 1975. The same budget and transportation problems the service said were responsible for the action then still prevail, authorities said.

Important reading is the **new regulation on Standards,** AFR 30–1. It deals in depth with the Air Force environment, appearance, conduct, and discipline. "These standards apply to all Air Force people, and I expect everyone to live and work by them. They are our day-to-day code of personal and professional conduct," Chief of Staff Gen. David C. Jones explains in a letter to all personnel. ■

Gen. Daniel James, Jr. (left), has been named Special Assistant to the Chief of Staff, Hq. USAF, Washington, D. C. Replacing him as CINC, NORAD/ADCOM, Peterson AFB, Colo., is Lt. Gen. (Gen. selectee) James E. Hill (right), formerly Vice CINC, Hq. SAC, Offutt AFB, Neb.

Senior Staff Changes

PROMOTIONS: To **Major General:** James A. **Abrahamson;** Anderson W. **Atkinson;** Walter H. **Baxter** III; Robert W. **Bazley;** Rufus L. **Billups;** Robert M. **Bond;** Max B. **Bralliar;** Bruce K. **Brown;** Kenneth D. **Burns;** Gerald J. **Carey,** Jr.; Robert W. **Clement;** Robert F. **Coverdale;** James E. **Dalton;** Van C. **Doubleday;** Howard M. **Estes,** Jr.; Martin C. **Fulcher;** Robert T. **Herres;** William J. **Kelly;** William B. **Maxson;** Thomas H. **McMullen;** John L. **Piotrowski;** Andrew **Pringle,** Jr.; John E. **Ralph;** George W. **Rutter;** Stuart H. **Sherman,** Jr.; Robert B. **Tanguy;** Robert L. **Thompson,** Jr.; Daryle E. **Tripp;** Jack L. **Watkins;** Charles E. **Woods.**

CHANGES: B/G Tommy I. Bell, from Prin. Asst. Dir., Test & Eval., ODDR&E, OSD, Washington, D. C., to Dep. Dir. for F-16 Matters, DCS/R&D, Hq. USAF, Washington, D. C. . . . **M/G Charles L. Donnelly, Jr.,** from Dep. Dir. of Plans, DCS/P&O, Hq. USAF, Washington, D. C., to Cmdr., Sheppard TTC, ATC, Sheppard AFB, Tex., replacing M/G Cecil E. Fox . . . **M/G Cecil E. Fox,** from Cmdr., Sheppard TTC, ATC, Sheppard AFB, Tex., to Cmdr., Oklahoma City ALC, AFLC, Tinker AFB, Okla., replacing M/G Carl G. Schneider . . . **M/G Philip C. Gast,** from C/S, Hq. AFLC, Wright-Patterson AFB, Ohio, to Chief, MAAG, Teheran, Iran . . . **M/G David L. Gray,** from Cmdr., 47th Air Div., SAC, Fairchild AFB, Wash., to Cmdr., 1st Strat. Air Div., SAC, Vandenberg AFB, Calif., replacing B/G (M/G selectee) Stuart H. Sherman, Jr.

M/G Jack I. Posner, from Dir., Manpower and Organization, DCS/P&R, Hq. USAF, Washington, D. C., to V/C, Sacramento ALC, AFLC, McClellan AFB, Calif., replacing B/G Everett L. True . . . **B/G Irving B. Reed,** from Asst. DCS/Ops., Hq. SAC, Offutt AFB, Neb., to Cmdr., 47th Air Div., SAC, Fairchild AFB, Wash., replacing M/G David L. Gray . . . **M/G Carl G. Schneider,** from Cmdr., Oklahoma City ALC, AFLC, Tinker AFB, Okla., to C/S, Hq. AFLC, Wright-Patterson AFB, Ohio, replacing M/G Philip C. Gast . . . **B/G (M/G selectee) Stuart H. Sherman, Jr.,** from Cmdr., 1st Strat. Air Div., SAC, Vandenberg AFB, Calif., to Dir., Manpower and Organization, DCS/P&R, Hq. USAF, Washington, D. C., replacing M/G Jack I. Posner.

B/G (M/G selectee) Daryle E. Tripp, from DCS/Plans, Hq. ATC, Randolph AFB, Tex., to Dep. Dir. of Plans, DCS/P&O, Hq. USAF, Washington, D. C., replacing M/G Charles L. Donnelly, Jr. . . . **B/G Everett L. True,** from V/C, Sacramento ALC, AFLC, McClellan AFB, Calif., to DCS/Plans, Hq. ATC, Randolph AFB, Tex., replacing B/G (M/G selectee) Daryle E. Tripp . . . **B/G (M/G selectee) Jack L. Watkins,** from Cmdr., 45th Air Div., SAC, Pease AFB, N. H., to Asst. DCS/Ops., Hq. SAC, Offutt AFB, Neb., replacing B/G Irving B. Reed. ■

Senator Goldwater Reelected

At the September 21, 1977, meeting of the Foundation's Board of Trustees, Senator Barry Goldwater was reelected as the Chairman of the Board.

Other Officers Reelected

President: Dr. William L. Ramsey
Secretary: Dr. Charles H. Boehm
Treasurer: George D. Hardy

Aerospace Education Foundation

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Newly Elected Trustees

Daniel F. Callahan
Dr. John F. Grede
Dr. James Holderman
Robert S. Lawson
Earle North Parker
Hugh W. Stewart

(*Reelected. The others are AFA National Directors elected earlier by the AFA Board of Directors)

Certificates of Appreciation Awarded

oel Bullock, right, eceives his Certificate f Appreciation at the AFA onvention from then AFA resident George M. Douglas.

he following received Certificates of Appreciation at the AFA Convention Opening Ceremonies for their fforts in helping the Foundation accomplish its objectives.

MSgt. Walter Scott, Enlisted Air Crew Advisor to the Deputy Commander of Operations, Travis Air Force Base, California
MSgt. Alton Hudson, Superintendent, ADCOM NCO Academy, Tyndall AFB, Florida
r. R. L. Devoucoux, Vice President, New England Region, AFA, New Hampshire
r. William W. McKenna, President, Air Force Association, New Hampshire
r. Jack Haire, AFA National Director and Foundation Trustee, Alabama
r. Kenneth Rowe, Foundation Trustee and AFA State Education Director, Virginia
r. Noel Bullock, AFA State Education Director, Colorado
Mr. Ben Snell, AFA State Education Director, California
Mr. James O. Fiske, Jr., AFA State Education Director, Massachusetts
Mr. H. Foster Hamilton, AFA State Education Director, South Carolina
Brig. Gen. William Spruance, AFA National Director and Foundation Trustee, Florida
Mr. J. Gilbert Nettleton, AFA National Director and Foundation Trustee, Washington, DC
Professor Earl Hickey, AFA State Education Director, Michigan
Mr. Tom L. Hindes, AFA State Education Director, Ohio

On October 27, 1977, more than 900 VIP guests attended the Sixth Annual Air Force Ball at the Century Plaza Hotel, Century City, California. The Los Angeles *Times* called it . . .

'A FIVE-STAR EVENING'

THE Air Force Association's Sixth Annual Air Force Ball, which was held in the Century Plaza Hotel's beautiful Los Angeles Ballroom, firmly established the function as the most elegant and one of the most popular events of the AFA year.

Net proceeds from the annual $125-a-plate, fund-raising function go to Scholarships for Children of American Military Personnel (SCAMP) to assist deserving children of US servicemen from all the military services who were killed in action, missing in action, or prisoners of war in Southeast Asia; and to the Aerospace Education Foundation, AFA's education affiliate, to be used in its program of adapting and making available to high schools and community colleges throughout the country occupational education courses developed by the USAF. The six annual functions have raised more than $250,000 for these tw worthy organizations.

The accompanying pictures t the story of this year's ball. Tl Seventh Annual Air Force Ball w be on October 27, 1978.

—BY DON STEEI

The formal portion of the Ball opened with the presentation of the colors by the University of Southern California's Color Guard, and the singing of the National Anthem by Gloria Loring, at the microphone, "America's Unofficial Queen of the Anthem." Miss Loring was accompanied by the Fifteenth Air Force Band, which, together with Steve Paletta and his Orchestra, provided music for dancing later in the evening.

AFA National President and Mrs. Gerald V. Hasler, left, Secretary of the Air Force John C. Stetson and Mrs. Stetson, right, visited just prior to their participation in the Grand March during the opening of the formal portion of the Ball.

Actor Charlton Heston, center, with Sen. and Mrs. Barry M. Goldwater, left, of Arizona, and Air Force Chief of Staff Gen. David C. Jones and Mrs. Jones, right. In addition to Mr. Heston, the entertainment world was represented by Steve Allen, Richard Anderson, Lorne Greene, Gloria Loring, and Louis Nye.

on. Barry M. Goldwater, left, the senior Senator from Arizona nd the Honorary Chairman of the Ball, with Military ohost Lt. Gen. Bryan M. Shotts, Fifteenth Air Force ommander, and Mrs. Shotts.

AFA Board Chairman and Mrs. George M. Douglas, right, visited with Lt. Gen. and Mrs. Thomas W. Morgan. General Morgan, Space and Missile Systems Organization Commander, was one of the Military Hosts for the Ball.

ctor-comedian *Louis Nye and the Mariachi Los Camperos from Los Angeles' a Fonda Restaurant provided the entertainment of the evening. In the photo, Mr. Nye, ft, entertains scholarship winners Steven Gray, Wendy Small, and Susan Hanna.*

General of the Army Omar Bradley, center, the only living five-star general in the United States, and Mrs. Bradley, right, were the guests of Miss Sybil Brand, left. General Bradley received a standing ovation when he was introduced.

umber of airmen and their spouses or dates attended the ll as guests of the California State AFA and its Chapters. n. Alexander M. Haig, Jr., right, Supreme Allied Commander Europe, with CMSgt. David A. Guzman, left, Senior listed Advisor at SAMSO, and Mrs. Guzman.

During the evening, Richard J. Borda, the General Chairman of the Ball, and SCAMP President Martin M. Ostrow, a former AFA National President and Board Chairman, talked with the five SCAMP scholarship winners. Shown are, from left, Mr. Borda; Mr. Ostrow; Susan Ellen Hanna, Oaklyn, N. J.; Steven Cordell Gray, Carlisle, Pa.; Wendy M. Small, San Diego, Calif.; Eugene T. Tatum, Colorado Springs, Colo.; and Kimberley Anne Hartness, Fort Worth, Tex.

AFA News

By Don Steele, AFA AFFAIRS EDITOR

During recent ceremonies in the Office of the Secretary of the Air Force, officers of AFA's Iron Gate Chapter presented a check for $25,000 to the Air Force Assistance Fund. The donation was a portion of the proceeds from the Chapter's 14th National Air Force Salute. Shown are, from left, Air Force Chief of Staff Gen. David C. Jones; Chapter President Burl McLaughlin; Secretary of the Air Force John C. Stetson; Richard A. Knobloch, General Chairman of the Salute and Vice President of the Chapter; and J. Gilbert Nettleton, Jr., General Chairman of several prior Salutes. The fourteen Salutes have donated more than $800,000 to Air Force-oriented charities.

The Ak-Sar-Ben Chapter's Fifth Annual Arthur C. Storz, Sr., Award Luncheon honored Thomas E. Shapland, Capt. Judy B. Blakeney, and Senior Airman William D. Piper, the Outstanding Civilian, Junior Officer, and Airman, respectively, at Offutt AFB, Neb., and featured entertainment by the Strategic Air Command (SAC) Band and the "Up With People" troupe. During the program, an AFA Citation of Honor was presented to Offutt's 4000th Aerospace Applications Group. In the photo, Chapter President Robert Runice, left, leads the applause as Lt. Gen. James E. Hill, center, SAC's Vice Commander, presents Captain Blakeney her award.

The Georgia State AFA sponsored a hospitality suite at the recent Air Force Sergeants Association National Convention in Atlanta. Georgia State AFA Treasurer John Downey, right, a chief master sergeant in the Air Force Reserve, and his wife, Rosemary, visit with, from left, retired Chief Master Sergeants of the Air Force Paul Airey and Don Harlow.

Principals in the Battle Creek, Mich., Chapter's Charter Night Dinner included AFA National President Gerald V. Hasler, the guest speaker; Marjorie O. Hunt, center, Michigan State AFA Secretary, who presented the charter; and Chapter President Howard C. Strand, left.

An AFA Salute to General and Mrs. William V. McBride

Six AFA Chapters—Air Force Mothers, Beaver Valley, Erie, Greater Pittsburgh, Joe Walker, and Steel Valley—in the Pennsylvania State AFA's Western Region recently co-sponsored a dinner saluting the 30th Anniversary of the Air Force and the 31st Anniversary of AFA, and honoring Gen. William V. McBride, USAF Vice Chief of Staff, and Mrs. McBride, both of whom are natives of the area. During the dinner hour, General and Mrs. McBride visited each table and talked personally with each of the more than 250 guests, including members of their families, former classmates, school teachers and neighbors, and leaders of the community, the Air Force, and AFA. Photo No. 1 shows head-table guests, from left, Brig. Gen. Peter R. Phillipy, Commander, 171st Air Refueling Wing, PAANG; AFA National President Gerald V. Hasler, who told of General McBride's great support of AFA; General McBride; L. Butler Hennon, the General's high school basketball coach as he told stories about the General's high school days; Mrs. McBride; and Brig. Gen. H. J. Dalton, Jr., USAF Director of Information, who also spoke. Photo No. 2 shows General and Mrs. McBride visiting cadets at the AFJROTC table. Photo No. 3 shows General McBride, left, as he responded to the three prior speakers. The others in the photo are Deane Sterrett, Vice President for the State AFA's Western Region and the Master of Ceremonies; and Mrs. McBride.

AFA News

Several hundred current and former Idaho Air National Guardsmen and friends recently attend a banquet in Boise's Rodeway Inn honoring Bri Gen. James M. Trail, Idaho's Assistant Adjutant General for Air, and his wife, Rosemary, on the occasion of his retirement from the Air Nationa Guard. Among the many presentations to Gene Trail, left, a former AFA Board Chairman and now a permanent National Director, was an AF. Special Citation, presented by AFA's Assistant Executive Director John O. Gray, right, represe. ing AFA National President Gerald V. Hasler. General Trail's fellow Idaho Air Guardsmen gav him a Life Membership in AFA.

Attending a recent dinner sponsored by AFA's Andrews Area Chapter at Andrews AFB, Md., are, from left, AFA's Assistant Executive Director John O. Gray; Prince Georges County, Md., Chief Executive Officer Winfield Kelly; Chapter President Stan Stepnitz; CBS news commentator J. C. Hayward, the guest speaker; Brig. Gen. William E. Brown, Chief, Security Police; Col. L. R. Peterson, Base Commander; and Brig. Gen. J. M. Kennedy, Commander, 113th Tactical Fighter

The Rushmore, S. D., Chapter's recent dinner meeting featured Steve Ritchie, the Air Force's only pilot ace of the Vietnam conflict, as the principal speaker, and the installation of newly elected officers. In the photo above, Hoadley Dean, left, Vice President for AFA's North Central Region and also Chapter Secretary, presents an AFA Past Presidents pin to retiring Chapter President James Anderson, center, as newly elected President Kenneth Guenthner, right, looks on. In the photo at left, Joe Foss, left, Medal of Honor recipient, World War II ace, former Governor of South Dakota, and a former AFA National President and Board Chairman, chats with Steve Ritchie.

chapter and state photo gallery

New York State AFA President Kenneth C. Thayer, left, and Mrs. Thayer visit with Lt. Gen. and Mrs. Robert C. Mathis during the Rome Air Development Center's 26th Anniversary Dinner in the Griffiss AFB Officers' Club. General Mathis, a former Center commander and presently Vice Commander of the Air Force Systems Command, was the guest speaker.

—PHOTO COURTESY OF CHAMPAIGN-URBANA COURIER

During the Illini Chapter's recent awards banquet, Maj. Gen. Edwin W. Robertson II, left, Chanute Technical Training Center Commander, was named the Chapter's "Man of the Year." Shown making the presentation are Chapter President Warren Manley, center, and Kurt Schmidt, right, Immediate Past President of the Chapter.

AFA's Front Range, Colo., Chapter hosted the recent visit to Denver of the National March of Dimes poster child, Denise Nankivell of Elizabethville, Pa. Denise, center, is shown enjoying Denver's first snowfall of 1977 with, from left, Chapter President Gary Schwartz; Colorado State AFA President Ed Marriott; Jim Hall, Vice President for AFA's Rocky Mountain Region; and Charity des Jardin, daughter of a Marine Corps captain at Buckley ANG Base.

CMSgt. Ronald B. Sauter, center, Senior Enlisted Advisor to the Wing Commander at Kirtland AFB, N. M., was cited by AFA's Albuquerque Chapter for his work in developing an excellent community-relations program. Shown presenting the citation are Col. Archer L. Durham, left, Commander, 1606th Air Base Wing (MAC), and Chapter President John N. Donnellon, a lieutenant colonel in the Air Force Reserve.

This Is AFA

The Air Force Association is an independent, nonprofit, aerospace organization serving no personal, political, or commercial interests; established January 26, 1946; incorporated February 4, 1946.

OBJECTIVES

The Association provides an organization through which free men may unite to fulfill the responsibilities imposed by the impact of aerospace technology on modern society; to support armed strength adequate to maintain the security and peace of the United States and the free world; to educate themselves and the public at large in the development of adequate aerospac power for the betterment of all mankind; and t help develop friendly relations among fre nations, based on respect for the principle freedom and equal rights to all mankind.

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Sherman W. Wilkins
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Jack Withers
[illegible]

Steven L. Chambers
(ex officio)
National Commander
Arnold Air Society
St. Paul, Minn.

VICE PRESIDENTS

Information regarding AFA activity within a particular state may be obtained from the Vice President of the Region in which the state is located.

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Warner Robins, Ga. 31093
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Southeast Region
North Carolina, South Carolina, Georgia, Florida, Puerto Rico

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Northwest Region
Montana, Idaho, Washington, Oregon, Alaska

Lyle O. Remde
4911 S. 25th St.
Omaha, Neb. 6810
(402) 731-4747
Midwest Region
Nebraska, Iowa, Missouri, Kansas

photo gallery

rticipants in the Capt. Eddie Rickenbacker Memorial Chapter's recent graveside memorial service the Greenlawn Cemetery in Columbus, Ohio, commemorating the birthday of Captain Rickenbacker, orld War I ace and Medal of Honor recipient, included cadets from the Westland High School JROTC unit, and, on the right, reading from left, Maj. Phillips K. Foote, Rickenbacker AFB haplain; Col. James A. Nouss, Base Commander; and Chapter President Francis D. Spalding.

own above are the forty-one Alcoa/Maryville and Knoxville, Tenn., area business and civic ders who took part in an orientation visit to Hq. Strategic Air Command at Offutt AFB, Neb. nsored by AFA's Gen. Bruce K. Holloway Chapter, it was designed to increase understanding SAC's roles in the United States defense structure, and present and future Soviet military abilities.

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NEW HIGHER AVIATION DEATH BENEFITS

Dependable Protection from Y

Air Force Associatio

Important Benefits!

COVERAGE YOU CAN KEEP. Provided you apply for coverage under age 60 (see "ELIGIBILITY") your insurance may be retained at the same low group rates to age 75.

FULL TIME, WORLD WIDE PROTECTION. The policy contains no war clause, hazardous duty restriction, combat zone waiting period or geographical limitation.

DISABILITY WAIVER OF PREMIUM. If you become totally disabled at any time prior to age 60 for at least a 9-month period, your coverage will be continued in force without further payment of premiums as long as you remain disabled.

FULL CHOICE OF SETTLEMENT OPTIONS. All standard forms of settlement options, as well as special options agreed to by the insured and United of Omaha, are available to insured members.

CONVENIENT PAYMENT PLANS. Premium payments may be made by monthly government allotment (payable to Air Force Association), or direct to AFA in quarterly, annual or semi-annual installments.

DIVIDEND POLICY. AFA's primary policy is to provide maximum coverage at the lowest possible cost. Consistent with this policy, AFA has provided year end dividends (20% for 1976) to insured members in twelve of the past fifteen years, and has increased the basic amount of coverage on four separate occasions.

Additional Information

Effective Date of Your Coverage. All certificates are dated and take effect on the last day of the month in which your application for coverage is approved, and coverage runs concurrently with AFA membership. AFA Military Group Life Insurance is written in conformity with the insurance regulations of the State of Minnesota. The insurance will be provided under the group insurance policy issued by United of Omaha to the First National Bank of Minnesota as trustees of the Air Force Association Group Insurance Trust.

EXCEPTIONS: There are a few logical exceptions to this coverage. They are:

Group Life Insurance: Benefits for suicide or death from injuries intentionally self-inflicted while sane or insane will not be effective until your coverage has been

The Accidental Death Benefit and Aviation Death Benefit shall not be effective if death results: (1) From injuries intentionally self-inflicted while sane or insane, or (2) From injuries sustained while committing a felony, or (3) Either directly or indirectly from bodily or mental infirmity, poisoning or asphyxiation from carbon monoxide, or (4) During any period a member's coverage is being continued under the waiver of premium provision, or (5) From an aviation accident, either military or civilian, in which the insured was acting as pilot or crew member of the aircraft involved, except as provided under AVIATION DEATH BENEFIT.

Eligibility

All active duty personnel of the Armed Forces of the United States and members of the Ready Reserve* and National Guard* (under age 60), Armed Forces Academy cadets*, and college or university ROTC cadets* are eligible to apply for this coverage provided they are now, or become, members of the Air Force Association.

*Because of restrictions on the issuance of group insurance coverage, applications for coverage under the group program cannot be accepted from cadets or Reserve or Guard personnel residing in Florida, New York, Ohio or Texas. Members in these states may request special application forms from AFA for individual policies which provide coverage quite similar to the group program.

Please Retain This Medical Bureau Prenotification For Your Records

Information regarding your insurability will be treated as confidential. United Benefit Life Insurance Company may, however, make a brief report thereon to the Medical Information Bureau, a nonprofit membership organization of life insurance companies, which operates an information exchange on behalf of its members. If you apply to another bureau member company for life or health insurance coverage, or a claim for benefits is submitted to such a company, the Bureau, upon request, will supply such company with the information in its file.

Upon receipt of a request from you, the Bureau will arrange disclosure of any information it may have in your file. (Medical information will be disclosed only to your attending physician.) If you question the accuracy of information in the Bureau's file, you may contact the Bureau and seek a correction in accordance with the procedures set forth in the federal Fair Credit Reporting Act. The address of the Bureau's information office is P.O. Box 105, Essex Station, Boston, Mass. 02112. Phone (617) 426-3660.

United Benefit Life Insurance Company may also release information in its file to other life insurance companies to whom you may apply for life or health insurance, or to whom a claim for benefits may be submitted.

CURRENT BENEFIT TABLES

AFA STANDARD PLAN

PREMIUM: $10 per month

Insured's Attained Age	Basic Benefit*	Extra Accidental Death Benefit*	Total Benefit
20-24	$75,000	$12,500	$87,500
25-29	70,000	12,500	82,500
30-34	65,000	12,500	77,500
35-39	50,000	12,500	62,500
40-44	35,000	12,500	47,500
45-49	20,000	12,500	32,500
50-54	12,500	12,500	25,000
55-59	10,000	12,500	22,500
60-64	7,500	12,500	20,000
65-69	4,000	12,500	16,500
70-74	2,500	12,500	15,000

Aviation Death Benefit:*

Non-war related	$25,000
War related	$15,000

AFA HIGH OPTION PLAN

PREMIUM: $15 per month

Insured's Attained Age	Basic Benefit*	Extra Accidental Death Benefit*	Total Benefit
20-24	$112,500	$12,500	$125,000
25-29	105,000	12,500	112,500
30-34	97,500	12,500	110,000
35-39	75,000	12,500	87,500
40-44	52,500	12,500	65,000
45-49	30,000	12,500	42,500
50-54	18,750	12,500	31,250
60-64	11,250	12,500	23,750
65-69	6,000	12,500	18,500
70-74	3,750	12,500	16,250

Aviation Death Benefit:*

Non-war related	$37,500
War related	$22,500

*The Extra Accidental Death Benefit is payable in the event an accidental death occurs within 13 weeks of the accident, except as noted under **Aviation Death Benefit** (below).

***AVIATION DEATH BENEFIT:** The coverage provided under the Aviation Death Benefit is paid for death which is caused by an aviation accident in which the insured is serving as pilot or crew member of the aircraft involved. Under this condition, the Aviation Death Benefit is paid in lieu of all other benefits of this coverage. Furthermore the non-war related benefit will be paid in all cases where the death does not result from war or an act of war, whether declared or undeclared.

OPTIONAL FAMILY COVERAGE

(may be added to either Standard or High Option Plan)
PREMIUM: $2.50 per month

Insured's Attained Age	Life Insurance Coverage for Spouse	Life Insurance Coverage for each Child*
20-39	$10,000	$2,000
40-44	7,500	2,000
45-49	5,000	2,000
50-54	4,000	2,000
55-59	3,000	2,000
60-64	2,500	2,000
65-69	1,500	2,000
70-74	750	2,000

*Between the ages of six months and 21 years, each child is provided $2,000 coverage. Children under 6 months are provided with $250 coverage once they are 15 days old and discharged from hospital.

essional Association! Apply Now!

Military Group Life Insurance

APPLICATION FOR AFA MILITARY GROUP LIFE INSURANCE

United of Omaha

Group Policy GLG-2625
United Benefit Life Insurance Company
Home Office Omaha Nebraska

Full name of member _____
Rank Last First Middle

Address _____
Number and Street City State ZIP Code

Date of birth Mo. Day Yr.	Height Weight	Social Security Number

Please indicate category of eligibility and branch of service.

- ☐ Extended Active Duty
- ☐ Ready Reserve or National Guard
- ☐ Air Force Academy
- ☐ ROTC Cadet _____ Name of college or university
- ☐ Air Force
- ☐ Other _____ (Branch of service)
- ☐ _____ Academy

Name and relationship of primary beneficiary

Name and relationship of contingent beneficiary

This insurance is available only to AFA members

- ☐ I enclose $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		Mode of Payment	STANDARD PLAN	
Members Only	Members and Dependents		Members Only	Members and Dependents
☐ $ 15.00	☐ $ 17.50	**Monthly** government allotment. I enclose 2 months' premium to cover the period necessary for my allotment (payable to Air Force Association) to be established.	☐ $ 10.00	☐ $ 12.50
☐ $ 45.00	☐ $ 52.50	**Quarterly.** I enclose amount checked.	☐ $ 30.00	☐ $ 37.50
☐ $ 90.00	☐ $105.00	**Semiannually.** I enclose amount checked.	☐ $ 60.00	☐ $ 75.00
☐ $180.00	☐ $210.00	**Annually.** I enclose amount checked.	☐ $120.00	☐ $150.00

Names of Dependents To Be Insured	Relationship to Member	Dates of Birth Mo. Day Yr.	Height Weight

Have you or any dependents for whom you are requesting insurance ever had or received advice or treatment for: kidney disease, cancer, diabetes, respiratory disease, epilepsy, arteriosclerosis, high blood pressure, heart disease or disorder, stroke, venereal disease or tuberculosis? Yes ☐ No ☐

Have you or any dependents for whom you are requesting insurance been confined to any hospital, sanitarium, asylum or similar institution in the past 5 years? Yes ☐ No ☐

Have you or any dependents for whom you are requesting insurance received medical attention or surgical advice or treatment in the past 5 years or are now under treatment or using medications for any disease or disorder? Yes ☐ No ☐

IF YOU ANSWERED "YES" TO ANY OF THE ABOVE QUESTIONS, EXPLAIN FULLY including date, name, degree of recovery and name and address of doctor. (Use additional sheet of paper if necessary.)

apply to United Benefit Life Insurance Company for insurance under the group plan issued to the First National Bank of Minneapolis as Trustee of the Air Force ssociation Group Insurance Trust. Information in this application, a copy of which shall be attached to and made a part of my certificate when issued, is given o obtain the plan requested and is true and complete to the best of my knowledge and belief. I agree that no insurance will be effective until a certificate has een issued and the initial premium paid.

hereby authorize any licensed physician, medical practitioner, hospital, clinic or other medical or medically related facility, insurance company, the Medical formation Bureau or other organization, institution or person, that has any records or knowledge of me or my health, to give to the United Benefit Life Insurnce Company any such information. A photographic copy of this authorization shall be as valid as the original. I hereby acknowledge that I have a copy of the edical Information Bureau's prenotification information.

)ate _____, 19 ____ _____
Member's Signature

/ 78
orm 3676GL App

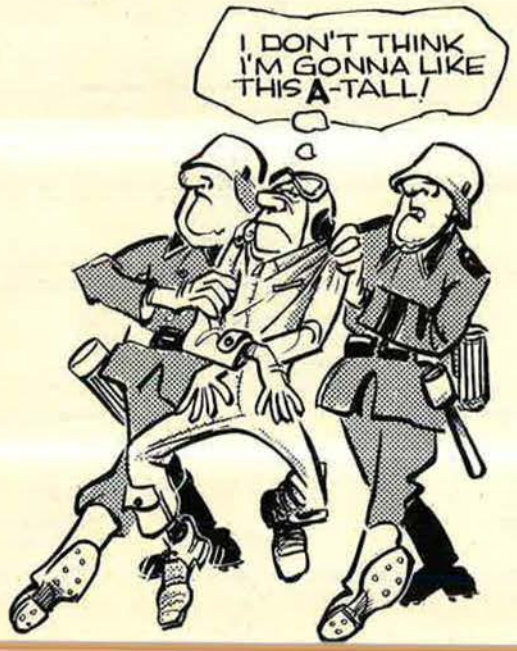
Application must be accompanied by check or money order. Send remittance to: Insurance Division, AFA, 1750 Pennsylvania Avenue, NW, Washington, D.C. 20006

Bob Stevens'

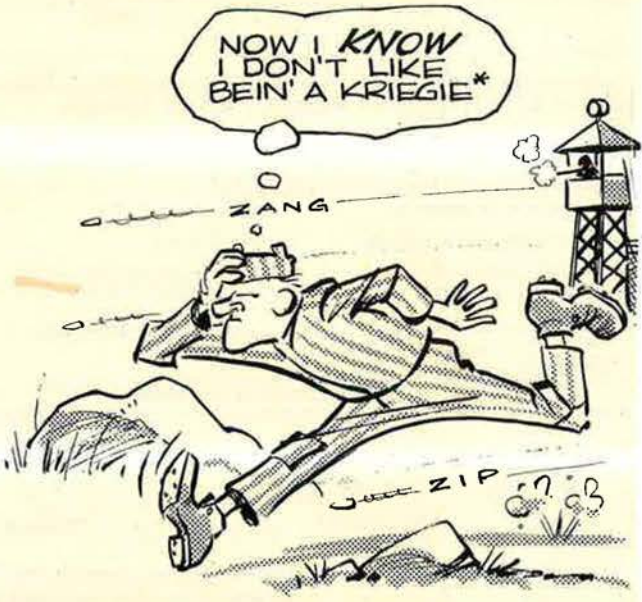
"There I was..."

CONTINUING OUR HARD-TO-BELIEVE BUT-TRUE SERIES, WE TURN NOW TO ONE BRUCE CARR, WHO BECAME AN AMERICAN FIGHTER ACE. BRUCE WAS DOING A STINT IN THE ETO WHEN THE FOLLOWING INCIDENT ACTUALLY HAPPENED:

KNOCKED DOWN OVER DER VATERLAND, CARR WAS PROMPTLY SCARFED UP and INCARCERATED.

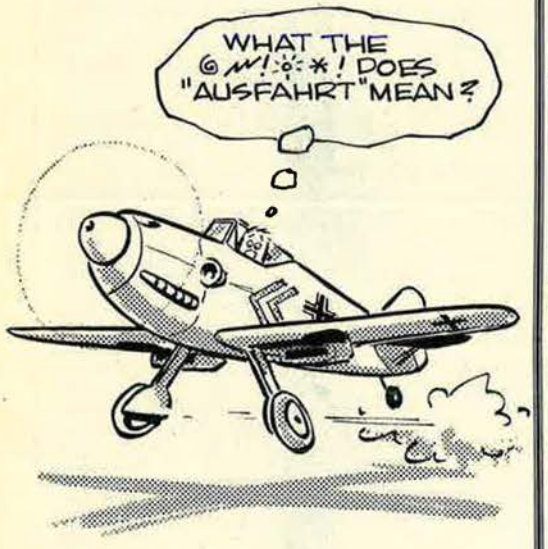


BRUCE MADE REPEATED ATTEMPTS TO ALTER HIS SITUATION—



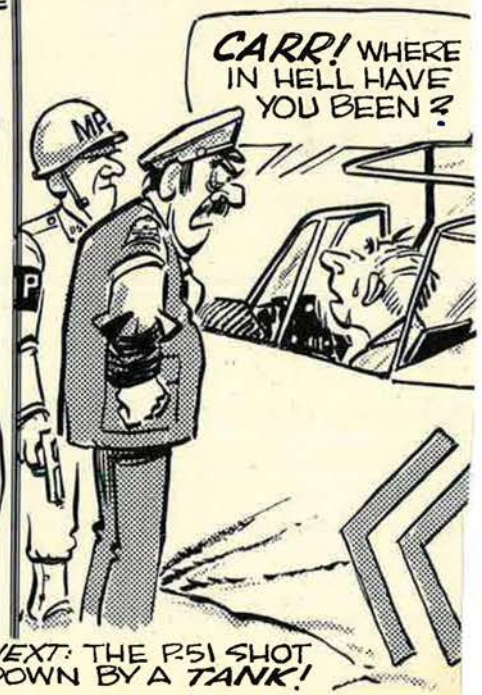
* P.O.W.

AFTER AN EXTENDED PERIOD, HE ESCAPED BY "BORROWING" AN ME-109 FROM THE FIRST AIRFIELD HE CAME TO...



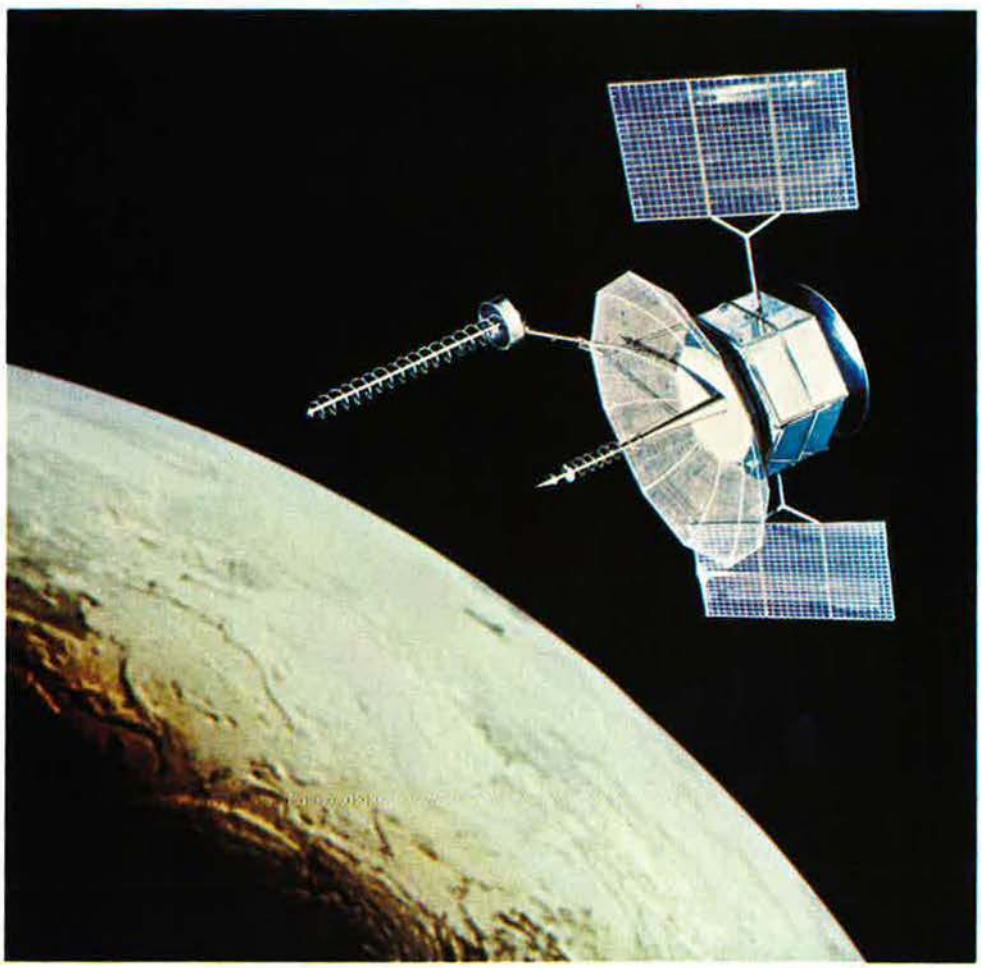
...and THEN FLEW BACK TO HIS BASE IN THE U.K. THE A/A PEOPLE GAVE HIM AN APPROPRIATE WELCOME—

AFTER MAKING A BELLY LANDING, HE WAS PROMPTLY MET BY HIS C.O. (and OTHER INTERESTED PARTIES)



Bob Stevens

NEXT: THE P-51 SHOT DOWN BY A TANK!



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