

OCTOBER 1981/\$1

# AIR FORCE

PUBLISHED BY THE AIR FORCE ASSOCIATION

MAGAZINE



**The Total Force:  
Air Reserve Forces' Vital Role  
Air Guard and Reserve Status Reports  
Strength in Reserve**

# Air Force Power



TF34-POWERED A-10 CLOSE AIR SUPPORT AIRCRAFT



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# AIR FORCE

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### ABOUT THE COVER



Three A-7Ds of the South Carolina Air National Guard in formation for refueling from a KC-135 of the 452d Air Refueling Wing (AFRES) typify the contributions of the reserve forces to the Total Force. (Vought Corp. photo)

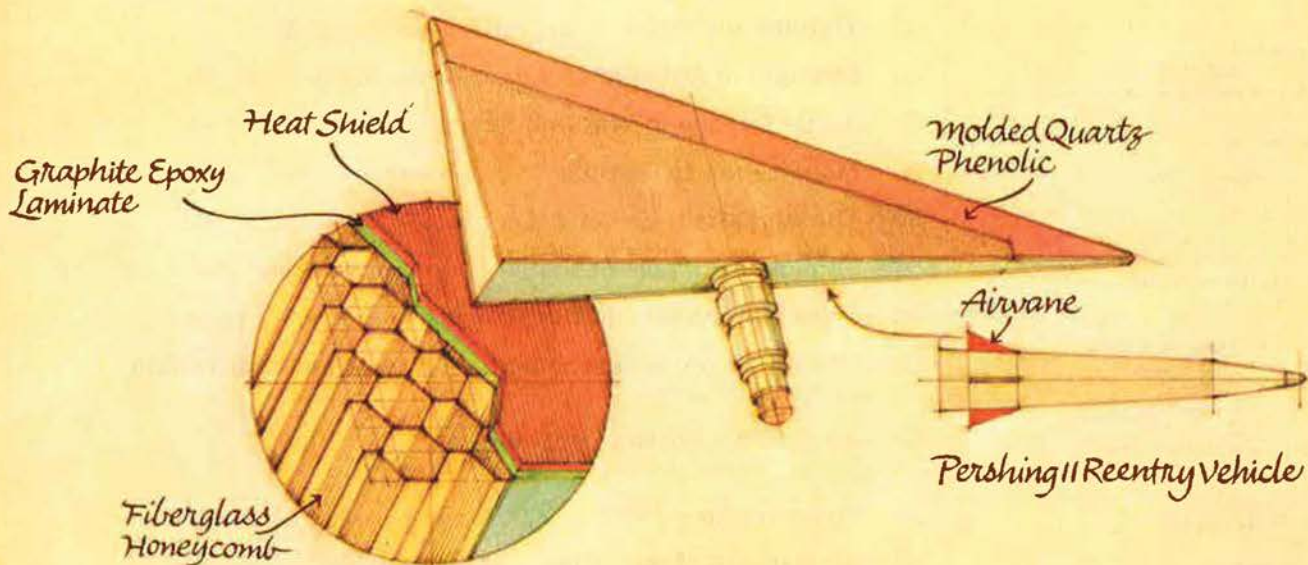
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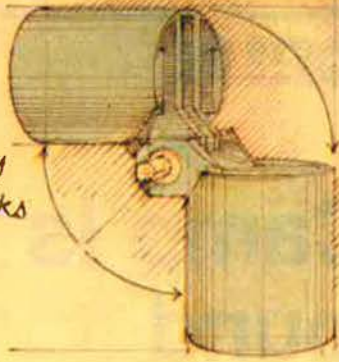
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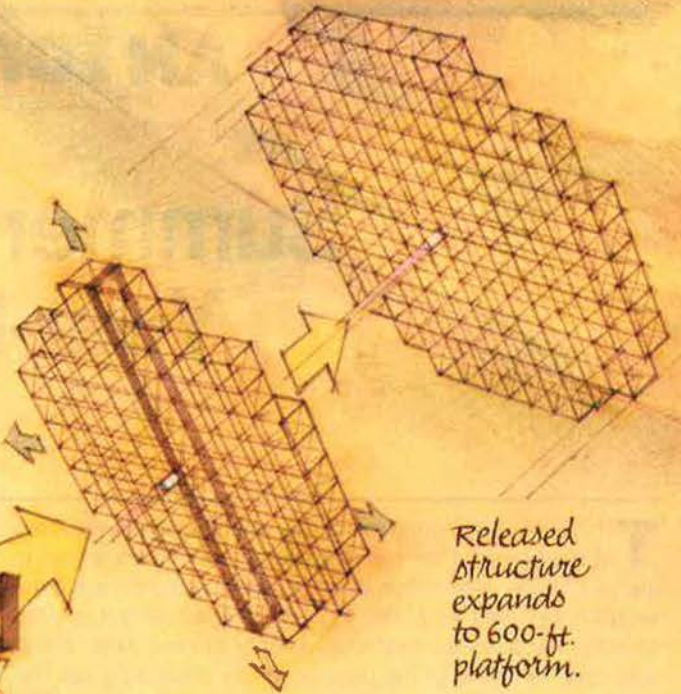


26-ft. module  
rises to vertical



Shuttle opens cargo doors

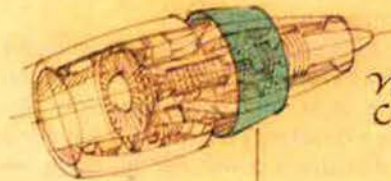
Package opens  
for deployment



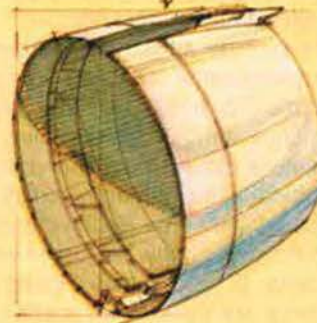
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# AN EDITORIAL

## Summer Camp Is Year-Round

**T**HOSE of us with long memories will recall the awful state of readiness of the nation's tiny active military forces in the late 1930s. More often than not, they had to simulate the weapon systems and aircraft they needed to defend the country, because the real ones simply did not exist. If that was bad, the state of the reserve forces (including the National Guard) was worse. Fortunately, the people involved, both active and reserve, were dedicated to preparedness, they stuck it out, and were ready mentally when the crisis came. Then, when the industrial giant awakened and began producing aircraft, ships, and all the rest, their simulation and mental readiness paid off. The summer camps and weekend meetings laid the foundations.

In the postwar era, the nation reverted, as always, to a near-unprepared state. The reserve forces once again were worse off than the active units, which were in pretty bad shape themselves when the North Koreans invaded. Ditto for the crises over Berlin, the missiles in Cuba, and the Vietnam War. The reserve forces still met on weekends and went to summer camp. In equipment, they were second-class soldiers expected to exchange their broomsticks for rifles and turn in a winning performance when crisis hit.

Now, however, the situation is different. The days when Air National Guard and Air Force Reserve units could be tagged "Raggedy-Ass Militia" are gone. Air reserve forces (Air National Guard and Air Force Reserve) perform daily the many missions that constitute aerospace power. For this issue, we looked at the Total Force and found many examples that validate claims of a better-prepared reserve.

At present, reservists provide almost fifty percent of the aircrews and about forty percent of the maintenance for the Military Airlift Command's C-5 and C-141 fleet. More than seventy percent of all tactical airlift and almost thirty percent of USAF rescue capability is provided by reservists, and an ever-larger chunk of tactical fighter strength comes from reserve units. Most important, Air Force Reserve and Air National Guard units are functioning daily, not just on weekends and during summer camp. In fact, summer camp is year-round, and weekend drills are seven days a week, as you discover when visiting reserve units.

Go to Des Moines, Iowa, for instance, to a typical Air National Guard fighter unit—the 132d Tactical Fighter Wing of the Iowa Air National Guard. You will find an outstanding unit with the best-maintained fighters in Twelfth Air Force, and an unprecedented four Outstanding Unit ribbons. The wing's A-7 fighters and personnel deploy routinely several times each year to Central America, the United Kingdom,

and in the US, performing live missions of the US tactical air forces.

How does the 132d TFW achieve "best maintained" fighters? Begin with the line chief, CMSgt. Chris Peterson. Chief Peterson has twenty-five years in the unit, plus five on active duty, all in fighters. The wing's crew chiefs average seventeen years on fighters. The same applies in the shops. Thus, Brig. Gen. Paul Thompson, the wing commander, and Chief Peterson can fill maintenance slots by sorting from a group of people who are "best-qualified" and experienced.

Go now into the aerial ports at McGuire, Dover, and Charleston AFBs at any time, day or night, weekday, weekend, or holiday. Reserve aerial port squadrons and detachments are keeping the ports humming, moving cargo and people in a continuous flow. In fact, in midsummer, AFRES aerial ports take over entirely the operation of the McGuire and Charleston ports for a period.

Now visit Hq. AFRES, at Robins AFB, Ga. You learn that reserve units are flying about 600 missions per week. That includes about 160 on regular MAC airlift runs, plus missions for TAC, SAC, AFLC, and others. This is year-round.

Drop in on the 116th TFW, Georgia Air National Guard. You learn from Brig. Gen. Ben Patterson, the wing commander, that he has a waiting list of 100 pilots wanting to fly in it. The 116th flies the F-105G Wild Weasel aircraft, comprising about twenty percent of USAF's fixed-wing Wild Weasel assets. They participate regularly in Red Flag and work routinely with the Navy and Army. Aircrews average eight missions per month.

Then visit the 103d TFG, Connecticut Air National Guard. The unit flies brand-new A-10 attack aircraft. Its pilots log an average of 158 hours per year on missions exactly like those flown by active units. The difference: The Guard pilots probably get more flying time. In less than two years after completing undergraduate pilot training, the outfit's most junior pilot logged 515 hours in the A-10.

From Col. Don Joy, the CO, you learn the range of occupations of his people—engineers at Hamilton Standard, airline pilots, insurance people, a dentist, bank employees—they represent the entire work force of Connecticut.

The punch line to all this: USAF's reserve forces are as totally representative of their communities as they have always been, but the difference is that they are now totally integrated into the execution of active-force missions around the clock.

They put real meaning into the "Total Force."

—F. CLIFTON BERRY, JR., EDITOR IN CHIEF



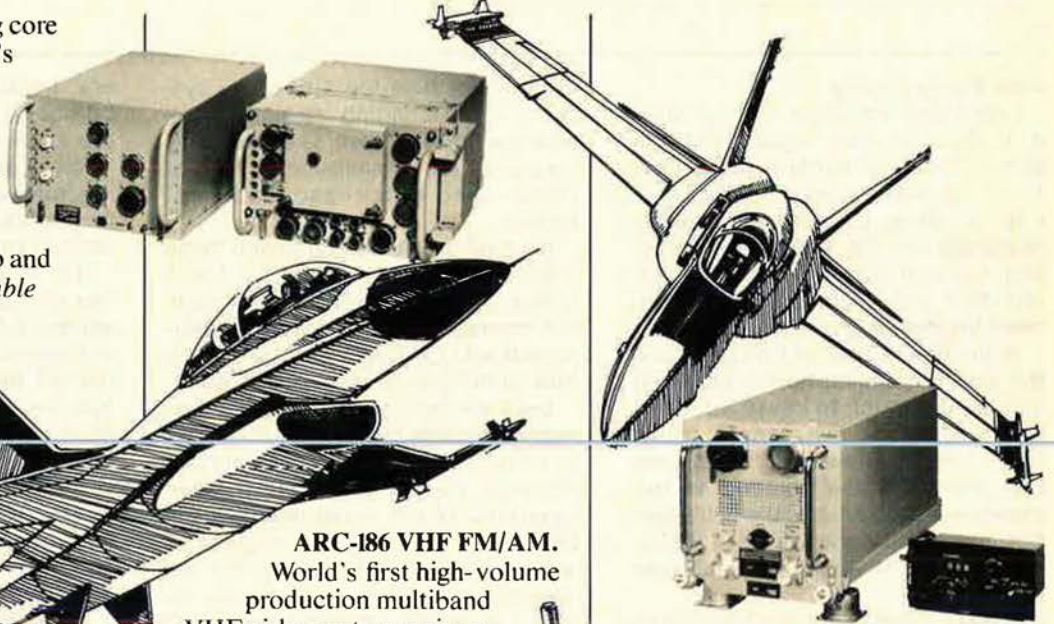
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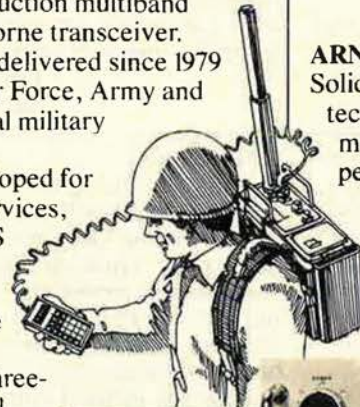


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# AIRMAIL

## Own Worst Enemy

I read your interview with Lt. Gen. A. P. Iosue in your August 1981 edition ("Personnel Outlook Improving, If . . ." p. 34) with great interest since I am a strong supporter of military readiness and the Air Force in particular. General Iosue is essentially correct that our military personnel do need increases in pay and benefits.

While the attitude of Congress and the past Administration toward our military did much to cause our manpower shortage, we cannot blame them entirely, however. To assume that money is the solution to our manpower problem hits the bull's-eye, but not necessarily in the center. Sometimes the Air Force is its own worst enemy.

In 1971, I was grounded from flying status and worked very hard from that time (until I resigned in 1977) to seek a return to the cockpit. In the spring of last year, I heard that the Air Force was considering a restricted flying category for people who were grounded for marginal reasons. I corresponded with the Commander at Military Airlift Command and called the C-141 assignment section at the Manpower and Personnel Center and confirmed that a decision was forthcoming on such a flying status.

As a result of a query I made to return to active duty, I received a call in December 1980 from MPC guaranteeing me a job flying C-141s at Norton AFB, Calif., if I were to return to the Air Force. On January 5, 1981, I reconfirmed this guarantee with MPC. Based on that guarantee, I resigned my job, sold my home, and moved into an apartment to await orders. In March, I was recommissioned a captain in the Air Force, and three days later received a call from MPC that my records had not been properly screened, that they did not realize that I had been grounded in 1971, and, therefore, they could not honor their guarantee.

As it turns out, I did not qualify for the restricted flying status since that applies only to those on active duty.

So, what's the lesson in all this? Well, after being unemployed for five

months because the Air Force "system" of "managing personnel resources" broke down, I realized why I resigned my commission in the first place—and that reason was not money.

It would be interesting to poll those officers who have left the Air Force at the magical ten-year point. I think our managers just might be embarrassed and Congress somewhat vilified as the bogey man on this issue.

Until we find corrections to a personnel system that so often refuses to recognize that our most important resource, people, lacks the objective ignorance of our computers, we will find ourselves going to Congress as we have in the past saying: "We absolutely must have more money so that our people can more easily tolerate the mess we have created."

Robert L. Gore  
Las Vegas, Nev.

## Still Flying

As I read "Flying the B-17 *Sally B*" (September '81, p. 98), the old motion pictures we all carry in our heads began to roll. Frank Armstrong, handsome as any movie star, is sitting in the 1st Division briefing room and looking morose. He would have us believe he wants to go home, that we people out in the bomb groups are the reason he is still in England instead of sunny Texas. If we would just screw up a few times, he would be relieved and on his way. We are, of course, not taken in. It is just Frank Armstrong's approach to motivation.

Lieutenant Stoddard mentions Grafton-Underwood. On a misty spring afternoon in 1943 a British voice cleared me for landing as the advance party of the 351st Bomb Group. Grafton was held down by a small RAF cadre who were clearly pleased to see us and our magnificent B-17E. We were visible proof the Americans were coming over in force, and come over in force we did.

From those small beginnings B-17s soon became one of the English landscape's more familiar sights. Aircraft hardstands were scattered around, often enough, through farm-

ers' fields. It made an odd scene, bombs being loaded into a B-17 while the harvest went on nearby. Not so oddly, Land Army girls and Yankee mechanics occasionally struck up an acquaintance as a result of this convenient propinquity.

It is very sad to think *Sally B* is the last of those hundreds, maybe thousands, of B-17s that once were based in England. Lieutenant Stoddard has had all the proper reactions to that fine old airplane. It did handle beautifully, and it did make a wonderful sound. *Sally B*, we are told, has lost her turbosuperchargers, and that is a pity, for the turbos allowed the B-17 to cruise comfortably at 25,000, and even 30,000, feet. (Comfortably, that is, for the airplane, not its crew.)

In the early days of our war in England, those high unpressurized altitudes cost lives all too frequently as oxygen systems froze in the subzero temperatures. Later on, the oxygen got fixed, but we stayed cold and unpressurized. Still, we were young and didn't know any better, so that was the least of our worries, not in it with our concern about Me 109s and FW 190s.

Though all those B-17 machine guns did give the Luftwaffe their bad moments, we took some fierce beatings before P-51s came along to give us long-range escort. And so, while the idea of a Flying Fortress that could fight its way deep into enemy territory proved impractical, the B-17 came as close as any airplane could to giving the theory a chance. It was a great old bird, one that would bring you home so long as it had wings and a couple of engines working. And if you couldn't make it across the Channel, you could always ditch. An out-of-gas B-17 usually floated like a raft.

All the old Fortresses had names, usually girls' names, painted on their noses. Thus, *Sally B* is just the last in a long and distinguished line.

It is good to know she is still flying.  
Gen. T. R. Milton, USAF (Ret.)  
Colorado Springs, Colo.

• General Milton is a regular contributor to AIR FORCE Magazine (his



monthly column may be found on p. 88 of this issue). A West Point graduate, he was a B-17 pilot during World War II, and he led the Schweinfurt mission of October 1943.—THE EDITORS

### Who Will Do It Then?

I am compelled to cite a major deficiency in the fiber optic scheme of things (as prompted by the detailed article, "The Promise of Fiber Optics" by Bill Walsh, p. 42, July 1981).

While AFLC and AFSC deserve recognition for their joint development and procurement efforts, are those fine folks also going to install the systems? Or will they continue to rely on civilian contract assistance—as I assume will be the case when . . . demonstrated later this year for NATO allies during Reforger '81 exercises in Europe."

Right now the Air Force should be developing a blue-suit, in-house capability to install, maintain, and repair fiber optic transmission systems. Unless, of course, the "contractors" are willing to do the same when C<sup>3</sup> restoration time comes in a shootin' war.

Lt. Col. Jim Parker, USAF  
McClellan AFB, Calif.

### The Retention Problem

I'd like to comment on the Electronic Systems Division Commander's [Lt. Gen. James W. Stansberry] remark, in Mr. Edgar Ulsamer's fine article ("C<sup>3</sup>: Modern Warfare's Nervous System," p. 53, July '81), regarding a retention problem of middle-level managers.

This is apparently a specific problem of the ESD, and the Air Force in general. Having spent twelve years in USAF, all in electronics, and having pursued and received a social science degree between overseas tours, I nonetheless felt qualified to try for a commission. In spite of all tests taken and passed, for myself (and many others) it was an uphill battle against time, budget restraints, and narrow-minded lower-level decision-making. Evidently all the years spent in the technical environment amounted to nil.

The result was the departure of a sizable number of once dedicated, now totally frustrated, degree holders (and those well on their way to one) from active duty. I'd still rejoice today, if the price were right.

Presently, I am a member of Navy Reserve, and they are willing to commission me O-2 direct, if I finish my master's in management before age thirty-eight. The Air Force need is ill served by middle managers who re-

buff degree-holding enlisted personnel desiring to get commissioned with (and I quote): "Why should we promote you guys? We can get fresh college graduates much cheaper!" and "This is unofficial, but you're the wrong color."

Birds don't do in their own nest what USAF does on some of their own people.

Karl C. McGuinness  
NAS Pt. Mugu, Calif.

### Come December

Mr. Berry really hit the nail on the head in his editorial "A Message of Hope" (August '81, p. 4).

I must disagree with his statement that the ". . . tide seems to be flowing in the opposite—and right—direction. . . ." Here at Tyndall AFB, Fla., we have just completed a base appearance evaluation. Air Force majors, captains, lieutenants, and senior and junior enlisted personnel were directed to clean latrines, sinks, and the insides of trash cans. These duties just happen to be a contract maintenance function. While this important work went on, how many airplanes flew? You can guess.

It really is a terrible shame that commanders, at any level, would place "beautification" above mission readiness. I have seen reality, and made a choice. My commitment to the Air Force ends in December and, with any amount of luck, my affiliation with the Air Force will also end in December.

Name Withheld by Request

### The Jump That Was

I enjoyed the very interesting article on the A-26 in the July issue ("A-26: Three-Decade Aerial Workhorse," p. 92). I particularly found the article in the box on p. 96 about "The Jump That Wasn't" enlightening.

A couple of years after the "jump that wasn't," I was called to Pope AFB/Fort Bragg, N. C., for "a special air-drop operation" with the Army Special Forces. I was an Air Force Combat Controller and felt no special significance about the operation until we were briefed that we were to use a B-26 from Hurlburt Field, Fla., for our delivery aircraft. We were to do a HALO (High Altitude Low Opening) infiltration out of the bomb bay. We put two Air Force Combat Controllers and two Army Special Forces troops into that airplane in the same place that bombs used to go. We got a "bomb's-eye

view" of the takeoff and climb-out and were greatly relieved when the bomb bay doors finally swung open in flight.

Our exits were uneventful with the exception of having to squeeze between a bar across the middle of the bomb bay and the wooden platform on which we sat. Making like a bomb wasn't that difficult and the B-26 didn't treat us that badly at all. It just showed us another aspect of its capabilities.

The date of that jump, according to my parachute records, was February 23, 1966.

Col. David R. Hughes, USAF  
Howard AFB, Panama

### A Look at Portugal

Gen. T. R. Milton's recent article on "The Increasing Importance of Spain and Portugal" (August '81, p. 74) caught my eye and prompted this letter. His section on Portugal was of special interest since I have just returned from a short visit there.

It seems somewhat strange to read the names of Salazar, Caetano, Spínola, and Carneiro in connection with the Air Force. For the last five years both these subjects have been part of my life, but connecting the two, as the General did, had never seemed so natural.

There were several points that came to mind while reading the article. These included a somewhat partial opinion regarding the government's attempt "to whip up the crowd" in regard to April 25, Portugal's Revolutionary Day. After having spent three weeks in the upper region of Beira Alta, the rather strong opinions of the people there influenced my thinking. The older generations still speak of Salazar as someone just short of a god. The younger generations are somewhat divided; some supporting a further development of Portugal without the reminder of "the bloodless revolution," others still expecting some Communist attempt to get involved once again.

There is no need to remind the Portuguese of April 25, since even the streets are markers of political division. Just as the streets of New York are posted with various banners, so are those in Lisbon, Coimbra, and even the villages where televisions are just beginning to become household items. The banners in Portugal, however, are not of paper, but rather of black, red, and green spray paint that has not worn off with time or weather.

The General, on another point, wondered why the Portuguese would leave the cities on their free holidays. With gasoline prices there at \$3.50 a gallon, or more in some places, it seems the General is saying the Por-

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 interest of space or good taste. Names will be withheld on request, but unsigned letters are not acceptable.



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tuguese should remain in the cities on holidays. I beg to differ. The Portuguese are more family-oriented than anything. They would think nothing of sacrificing themselves for a weekend with their families away from the cities. There were, for example, young soldiers who would travel six hours by train every weekend to be with their families. Imagine leaving Lisbon late Friday, arriving home early Saturday, and having just thirty-six hours with your family. Most Americans might try that once a month, but the Portuguese would do it, and I saw it done, every weekend. That says a lot about the Portuguese.

The involvement and further development of the Portuguese military with NATO and USAF are positive aspects for Portugal. Just as California needed spraying to prevent further contamination of its fruit, Portugal needs military expansion to bring its old-worldness out of the way. Hopefully, as Portugal's involvement increases, so will the unity of Europe and the strength of NATO and USAF.

Thank you for bringing to my attention some of the military aspects of Portugal that I wasn't aware of, and for allowing others to see that the Iberian peninsula really could be an important ally to the US military and especially to USAF.

Evonne Morgado  
Danbury, Conn.

### Oops!

While I was very pleased to see the photograph of *Pudgy V*, Maj. Thomas B. McGuire's WW II P-38 Lightning on p. 26 of the August issue, I (among others) was bothered by the inaccuracies in the accompanying comments.

The P-38 shown was restored by the volunteer personnel at McGuire AFB, N. J., not by the Air Force Museum as indicated in the caption. To the best of my knowledge, this aircraft was obtained by the Air Force Museum through a trade with RPM Aviation and private owners. It will be mounted for display at McGuire AFB. On August 19 the display site groundbreaking ceremony was held, with Gen. James R. Allen presiding.

As the P-38 Project Maintenance Officer, I have planned, supervised, and worked the process of restoration of this aircraft. The actual restoration started the day it arrived at McGuire AFB. The aircraft was painted in a camouflage pattern and had structural damage in the nose area. With only three weeks in which to work (since my goal was to display the P-38 on May 25), and a crew limited to volunteers, we managed to trans-

## AIRMAIL

form successfully this plane into a vision of the past. *Pudgy V* was displayed at the McGuire Open House/Airshow on Memorial Day. Major McGuire's crew chief assigned to *Pudgy V* during WW II, Mr. Frank Kish, attended this event. When Mr. Kish saw the P-38, he was amazed at the likeness and recalled memories of being with Major McGuire and maintaining the aircraft.

Credit is due to many people for their efforts to acquire and transform this P-38 back to the *Pudgy V* configuration. Don Sperring's artwork was perhaps the most visible contribution, but others applied their technical skills on the airframe, internal systems, engines, structural repairs, and preservation. Polishing the metal alone involved many people stopping by to help.

Some of the dedicated individuals working with me who should be commended for their contributions are: MSgt. Raymond Markey, for his work on the hydraulic systems and aid in just about all of the sequence of events; TSgt. William Rowe, for the great job on the engines; SrA. Charles Brinkman, for all the work involved in the corrosion preventative process and aid in the painting; and several sheet metal specialists, for restoring the structural integrity.

I hope all will look to this as a great memorial to Maj. Thomas B. McGuire, and that all individuals involved in this effort will take pride in their work.

1st Lt. Patricia C. Hatem, USAF  
McGuire AFB, N. J.

In your August 1981 issue you published a photograph of the P-38 *Pudgy V* depicting the aircraft flown by Maj. Thomas B. McGuire in the Southwest Pacific in World War II. You credit the restoration to the United States Air Force Museum. This is incorrect.

While the aircraft is part of the US Air Force Museum collection, it is on loan to McGuire AFB for display there. The aircraft was delivered there on May 4, 1981, in rather decrepit condition. It was the McGuire AFB restoration team of volunteers who transformed the delivered aircraft into the handsome tribute to Major McGuire which you carried in your magazine. Moreover, this transformation was accomplished in just

twenty-one days, so that it could be displayed at the McGuire AFB Open House on May 24, 1981.

These dedicated volunteers of McGuire AFB deserve a "well done" and a correction in a future issue of AIR FORCE Magazine, please.

R. E. Baughman  
Chief, Public Affairs Division  
Air Force Museum  
Wright-Patterson AFB, Ohio

● *We regret sincerely the inaccuracies contained in the caption accompanying the Pudgy V photo, and extend a hearty "well done" to all the McGuire AFB volunteers on the P-38 restoration project.—THE EDITORS*

### Oops! (Part Two)

Your August 1981 issue article titled "Paris Air Show 1981: No Surprises, Heavy Competition" (p. 80) has an error in it.

The F-16/79 is powered by a General Electric J79, not a Pratt & Whitney engine. GE manufactures the J79.

Warren F. Klima  
Norman, Okla.

● *Mr. Klima is correct, and we regret the error. In fact, author F. Clifton Berry, Jr., was so embarrassed by the mistake that he went to Texas for a ride in the F-16/79 as an atonement. See "Flying in the F-16/79," p. 73 of this issue.—THE EDITORS*

### Oops! (Part Three)

Reference the section on F-111Fs on p. 144 of the May 1981 edition of AIR FORCE Magazine. It states, "The F-111F-equipped 48th TFW moved to RAF Lakenheath in 1977."

Actually, the F-100-equipped 48th Tactical Fighter Wing moved to RAF Lakenheath in 1960, and received its F-111Fs in 1977.

Of course, that one insignificant mistake doesn't mar a valuable, outstanding magazine in the least.

MSgt. James T. Swinning III, USAF  
Wing Historian  
48th Tactical Fighter Wing  
APO New York 09179

● *Sergeant Swinning is indeed correct. Originally constituted in 1952 as the 48th Fighter-Bomber Wing, the 48th TFW (also known as the "Statue of Liberty Wing") has operated with F-84, F-86, F-100, F-4, and F-111 aircraft. On July 4 of this year the 48th TFW received its third Outstanding Unit Award for outstanding performance. Keep up the good work!—THE EDITORS*

### Sweat'er Out

The 15th Air Base Wing, Hickam



AFB, Hawaii, is currently restoring an RB-26C (s/n 44-35596) for display on base. In the process of stripping off layers of civilian and military paint, we have uncovered what we believe to be original wartime artwork. The artwork is not located on the nose, but on the outboard side of the right engine nacelle. The artwork shows a comely young lady and the legend *Sweat 'er Out*.

We are highly interested in corresponding with any individuals who were crew members on the aircraft. Specifically, we are seeking details on the aircraft's operational history and her wartime paint scheme.

Please contact:

Capt. Stephen M. Hoar, USAF  
15th ABW/LGE  
Hickam AFB, Hawaii 96853

### 22 Crash Rescue Sqdn.

During the Korean conflict there was a small and unheralded operation working under the 6160th ABG, Itazuke AB, near Fukuoka, Japan.

The operation was, at first, simply called "Detachment One." It later became identified as the "22 Crash Rescue Squadron."

This title was somewhat misleading as the eighty-five-foot "crash boats" were armed and we were detached to the Eighth Army, G-2, who in turn detached us to the covert operation known as "The Leopard."

I understand that the Tactical Air Command still has our purpose and missions classified; therefore, I will not go into details.

If any readers were members of that operation during 1950-52, and would be interested in a reunion, I would be more than willing to set one up if they will contact me.

Robert E. Sickinger  
Manager, Special Projects  
Gould Inc.,  
NavCom Systems Div.  
4323 Arden Dr.  
El Monte, Calif. 91731

### WW II Special Ops

I am continuing research on US Army Air Forces units in the ETO/MTO that flew aerial resupply to Resistance groups, agent drops, psychological warfare leaflet drops, and other special operations (including support of OSS missions). This research will go into a comprehensive combat history of the units involved in these operations during World War II.

Among the units of primary interest are: 801st/492d Bomb Group Carpet-baggers; 8th Air Force Night Leaflet Squadron 422d/406th; 15th Air Force 885th Bomb Squadron; 12th Air Force Italian-based C-47 troop carrier

## AIRMAIL

squadrons involved in resupply to partisans in Italy and the Balkans; and the B-24, C-87, and C-47 operators (including the pseudo-civilian American Air Transport Service) that flew clandestine special missions into Sweden from the UK in 1944-45.

I would greatly appreciate it if former unit members would get in touch with me.

Capt. Bernard V. Moore II,  
USAF  
PSC Box 1336  
APO New York 09057

### Books on Korean War

I am currently under contract to a major publisher to write a comprehensive, annotated bibliography of books on the Korean War. Gathering information on books from major publishers will not be a problem; however, learning about works published by individuals, private printing companies, local and/or regional presses, and other organizations

whose works do not receive national exposure will prove more difficult.

For the latter, I am requesting readers' assistance. If you know of any such publications, please send me the author, title, date, and place of publication and, if possible, something about its content. All such information will be greatly appreciated.

Dr. Keith McFarland  
Department of History  
East Texas State University  
Commerce, Tex. 75428

### Unknown Soldier of WW I

AFA member researching selection of the Unknown Soldier, Chalons-sur-Marne, France, needs information from or about Sgt. Edward F. Younger and other members of the escort detail (or from anyone present), and photos, diaries, personal recollections, etc.

Please contact:

Maj. Robert H. Becker,  
USAF (Ret.)  
2201 Emmaus Ave.  
Zion, Ill. 60099

### F-105 Thunderchief

Wanted: material on the Republic F-105 Thunderchief. Anyone who flew or worked on the F-105 is requested to send photos or any other information you may have on the Thud (especially if flown in combat).

## UNIT REUNIONS

### AWACS

A Dining-Out of members of the E-3A Systems Program Office will be held on October 23, 1981, in the Officers' Club at Hanscom AFB, Mass. Former members are invited and encouraged to attend. **Contact:** Capt. Jim Harris, USAF, ESD/YWEI, Hanscom AFB, Mass. 01731. Phone: (617) 271-2983; AUTOVON 478-5980, MITRE ext. 2983.

### Eagle Pass WASPs

The Eagle Pass WASPs' thirty-seventh-year reunion will be held on November 6-9, 1981, in Eagle Pass, Tex. **Contact:** Col. Hal Bundy, USAF (Ret.), 1612 Air Force Village, 4917 Ravenswood Dr., San Antonio, Tex. 78227.

### 27th Bomb Group (L)

A reunion for the 27th Bomb Group will be held on October 16-18, 1981, at Maxwell AFB, Ala. **Contact:** Charles Cook, 3822 Cumberland Way, Lithonia, Ga. 30058. Phone: (404) 981-3945.

### 33d Pursuit Squadron

Members of the 33d Pursuit Squadron who arrived in Iceland in August 1941, and all replacements to October 1942, will hold their reunion on October 30-November 1,

1981, at the Contemporary Resort Hotel, in Lake Buena Vista, Fla. **Contact:** Lt. Col. Ronald Hall, 5803 Chipola Circle, Orlando, Fla. 32809. Phone: (305) 855-3073.

### Class 40-G

A reunion of Class 40-G will be held on November 12-15, 1981, at the Del Monte Hyatt House in Monterey, Calif. **Contact:** George W. Leggatt, 49 Blanca Lane #611, Watsonville, Calif. 95076. Phone: (408) 724-2581.

### AFROTC Det. 90

AFROTC Detachment 90 at Colorado State University, Fort Collins, Colo., will celebrate the thirty-fifth anniversary of "AIR ROTC" at CSU on November 20, 1981, with a Dining-In. **Contact:** Anniversary Project Officer, AFROTC Det. 90, CSU, Fort Collins, Colo. 80523.

### 352d Fighter Group

The 352d Fighter Group ("Blue-nosed Bastards of Bodney") will rendezvous for a minireunion with other units of the Eighth Air Force, in St. Paul, Minn., on October 15-18, 1981. For more information, **contact:** Robert H. Powell, Jr., 1545 Rainier Falls Dr., N. E., Atlanta, Ga. 30329. Phone: (404) 636-3747.

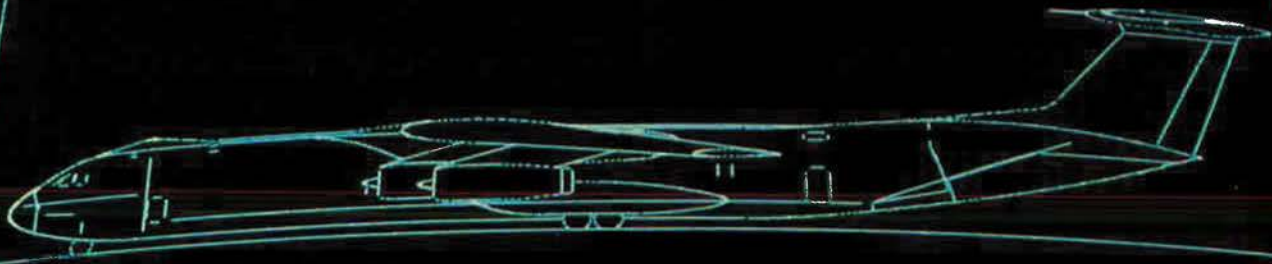


# Shaping Airlifter Technology

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## Creating a drawing board as big as 48 football fields.

*Above, a CADAM projection of a stretched C-141 airlifter.*

A revolution in the design and manufacture of airlifters has been taking place at Lockheed-Georgia Company. In semi-darkened scope rooms, engineers are designing advanced airlifters, using a copyrighted Lockheed software system that has freed them from the confines of drawing boards.



*CADAM projection of a complex aileron hinge fitting.*

screens—the parts, the systems, the tooling.

In effect, the CADAM system gives them a drawing board 20,000 inches by 20,000 inches in size, more than enough to accommodate any airlifter ever built. The engineers no longer have to design to a small 1/8 or 1/4 scale with all the problems that go with reduced scale designs. They can blow up designs 100 or more times with the CADAM sys-

tem. In an instant, they can see the smallest detail—or the whole airlifter.

The system is CADAM—Computer-Graphics Augmented Design and Manufacturing. Using electronic pencils, engineers design airlifters on computer

tem. In an instant, they can see the smallest detail—or the whole airlifter.

Just as important, the CADAM system helps link airframe technologies together. It provides a huge and common data base instantly available to engineers in all the myriad disciplines involved in design and production of an airlifter. The production designer can call up on the screen the work of those in advanced design. Tool designers have instant access to the work of design engineers. Numerical control programmers, quality assurance engineers, facility engineers—they all use the CADAM system to speed their work, eliminate mistakes, design parts and tools with an accuracy impossible under old methods.

All theoretical benefits? Not at all. The CADAM system played an important role in the highly successful stretch of the C-141 airlifter, in which the cargo compartment has been increased 33% in length. That program is running under budget and ahead of schedule, and the CADAM system has been used in it from the start.

When it comes to airlifters, the engineers at Lockheed-Georgia know how. They have more experience, by far, in designing and building airlifters than anyone else in the world.

 **Lockheed-Georgia**



# SCIENCE/SCOPE

A weapon delivery system that will automatically identify, track, and designate many surface targets day or night from low-flying aircraft is now in engineering development. The new LANTIRN (Low Altitude Navigation Targeting Infrared for Night) system would be mounted in a pod outside U.S. Air Force F-16 and A-10 aircraft. LANTIRN includes a forward-looking infrared sensor and a terrain-following navigation subsystem. It automatically can recognize targets and "hand off" for rapid firing of Maverick missiles against successive targets. It also can designate a target with a laser beam so a laser-guided weapon could home on the reflected energy. Hughes, teamed with Martin Marietta, is responsible for the target recognizer and boresight correlator for Maverick hand-off. The LANTIRN program is directed by Aeronautical Systems Division, deputy for reconnaissance/electronics warfare systems at Wright-Patterson AFB.

Two technological hurdles have been overcome by a fiber-optic communications system that would let a safely concealed gunner guide missiles with imaging seekers toward battlefield targets. The first breakthrough was development of long lengths of a high-strength fiber-optic cable. The cable, just 300 microns in diameter, has an unusually high tensile strength of 200,000 psi and shows low signal transmission loss when wound or unwound. The other advance was a way to pay out the cable at missile velocities without snapping or snarling. Hughes and principal subcontractor IIT Electro-Optical Products Division are developing the Integrated Fiber-Optic Communications Link for the U.S. Army.

For the sixth straight year the U.S. Army has honored Hughes for finding ways to lower product costs and sharing the savings. Hughes was named a recipient of the U.S. Army Materiel Development and Readiness Command Award for Outstanding Achievement in Value Engineering. During fiscal 1980 the company cut the Army's acquisition costs by nearly \$20.3 million. Through Value Engineering, employees examine how products work and develop cost-effective alternatives while maintaining essential performance, reliability, and other customer requirements.

Both the current and future models of the U.S. Navy's Phoenix air-to-air missile have turned in impressive performances in recent test launches. The improved version of the radar-guided Hughes Phoenix, the AIM-54C, scored three hits in its first three firings when the unarmed development models passed well within lethal distance of the drone target. The current version, the AIM-54A, was successful in 10 of 12 operational readiness exercise launches in 1980. One failure was due to a problem in the launch aircraft and not in the missile.

A multimission helicopter has been assigned a new role -- that of a tank fighter -- by using a lightweight roof-sight version of the airborne TOW missile system. The Bell TexasRanger was developed for foreign military sales without U.S. government participation. The TOW system for the TexasRanger is the only such system that can be completely removed and reinstalled in the field without a requirement for re-boresighting. The airborne TOW (Tube-launched, Optically tracked, Wire-guided) missile system, including the roof-mounted sight, is being produced in the United Kingdom by British Aerospace under license from Hughes.

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Any material sent will be returned on request. Please contact:

Edward J. Nieszvic  
17 Edinburgh Close  
Rothwell, Northants.  
NN14 2AH England

### 366th Air Service Gp.

I've been wondering if the 366th Air Service Group (Eighth Air Force in Okinawa) has ever got together since its inglorious ending in Okinawa.

We started off poorly—instead of being associated with one of the established Pacific Theater air outfits like the Twentieth, we were associated with the Eighth, which was not a Pacific outfit. Our commanding officer was hauled off the ship in irons when we landed on Okinawa, and he was diagnosed as a nervous breakdown and wound up in an old soldiers home. We were disbanded and sent to other outfits shortly afterwards.

With all this background who wants a reunion? Well, if we haven't had one ever and anyone wants one, write me and I'll see what can be done.

Bob Walsh  
480-H Country Dr.  
Dover, Del. 19901

### F-86 Special Projects in Korea

Wanted: photos, color slides, and information on F-86 Sabre special projects in the Korean War.

I would like to hear from anyone in the 4th Fighter-Interceptor Wing who was connected with Project GUNVAL (20-mm cannon-armed F-86Fs), the rocket-assisted 4th FIW F-86Fs (the rockets were used to fight MiGs, not for takeoff), and the olive drab F-86As flown by 4th FIW pilots in 1951.

I would also like to hear from anyone with photos, color slides, and information on Project ASHTRAY RF-86As flown by the 15th Tactical Recon Squadron.

This information is to be used for my next book for Squadron/Signal Publications, titled *Airwar Over Korea*. Please contact me at the address below.

Larry Davis  
Squadron/Signal Publications  
4409 12th St., S. W.  
Canton, Ohio 44710

### Gun Barrel at Zaragoza

Hanging in the Officers' Club at Zaragoza AB, Spain, is a 20-mm gun barrel. It is chromed and mounted on a nicely finished wood display board. One can detect that there was some sort of plaque mounted on the wood, but the plaque is missing.

We believe that the display was presented to the base, or to a unit

## AIRMAIL

assigned here, prior to 1973. Can anyone fill us in on the history of the display?

If you know the story behind it, please drop us a line at the following address.

Maj. David Campbell, USAF  
406th TFTW/DOA  
APO New York 09286

### P-47 Pilot Sylvan Feld

I hope to write a thumbnail history of Sylvan Feld, who was killed in 1944 while flying against the enemy in a P-47 with the 373d Fighter Group, Hq. Section.

Mr. Feld had been the highest scoring USAAF Spitfire fighter pilot with the 52d Fighter Group, 4th Fighter Squadron, prior to joining the 373d. Anyone who remembers Sylvan Feld can help reconstruct his history by writing to me at the address below.

Paul A. Ludwig  
P. O. Box 9844  
Queen Anne Hill  
Seattle, Wash. 98109

### 556th Bomb Sqdn., 387th Bomb Gp.

A reunion during the summer of 1982 is being planned for former members of the WW II Martin B-26-equipped 556th Bomb Squadron, 387th Bomb Group (M).

Those interested should contact me at the address below.

Paul R. Priday  
7755 Harriott Rd.  
Plain City, Ohio 43064

### Capt. J. Altwater

I have a copy of the August 1, 1957, first-day issue USAF fiftieth anniversary commemorative postage stamp.

If anyone can locate the original recipient, Capt. J. Altwater (or his heirs), I will forward the stamp to them.

Sgt. Mark S. Carroll, Ohio ANG  
8537 North Akins Rd.  
North Royalton, Ohio 44133

### P-51 Mustang Restoration

I am urgently seeking information on a North American P-51D Mustang of the 352d Fighter Group, 328th Fighter Squadron, Eighth Air Force, stationed at Bodney, Norfolk, England, in 1944. Pertinent information includes: P-51D-10NA, 44-143??; *Barbara M. IV*; squadron code PE; and a red rudder with an "E" on the vertical fin.

This important information is re-

quired for a Mustang currently in restoration to these markings. Any vets of the 352d that can furnish any help, please contact me at the address below.

Malcolm L. Gougon  
45505 N. Leatherwood Ave.  
Lancaster, Calif. 93534

### 3d BG and 731st BS (AFRES)

I am preparing a book on the Douglas B-26 Invader, and I would like to include coverage of the 3d Bomb Group and 731st Bomb Squadron.

I would like to hear from any former members who feel that they can assist me in detailing the group's aircraft and activities, 1945-56.

The book is to be a largely pictorial history of the Invader, so I am in particular need of photographs, though any other information that readers may have is also most welcome.

John Horne  
15/20-22 Speed St.  
Liverpool, N.S.W.  
Australia 2170

### 505th Bomb Group

We'd like to hear from any former Group members involved in B-29 operations from Tinian Island during 1944-45. Would you be interested in a 1982 reunion?

Lt. Col. William J. "Hoot" Gibson,  
USAF (Ret.)  
5214 Pierce Ave.  
Ogden, Utah 84403

### 487th and 491st Bombardier Training Squadrons

I am attempting to get together all of my old squadron mates for a reunion in Midland, Tex. If anyone knows the present addresses of any members of the 487th and 491st Bombardier Training Squadrons (1942-45), please contact me at the address below.

Kenneth B. Ray  
Box 491  
Olton, Tex. 79064  
Phone: (806) 879-2316

### Punching Out

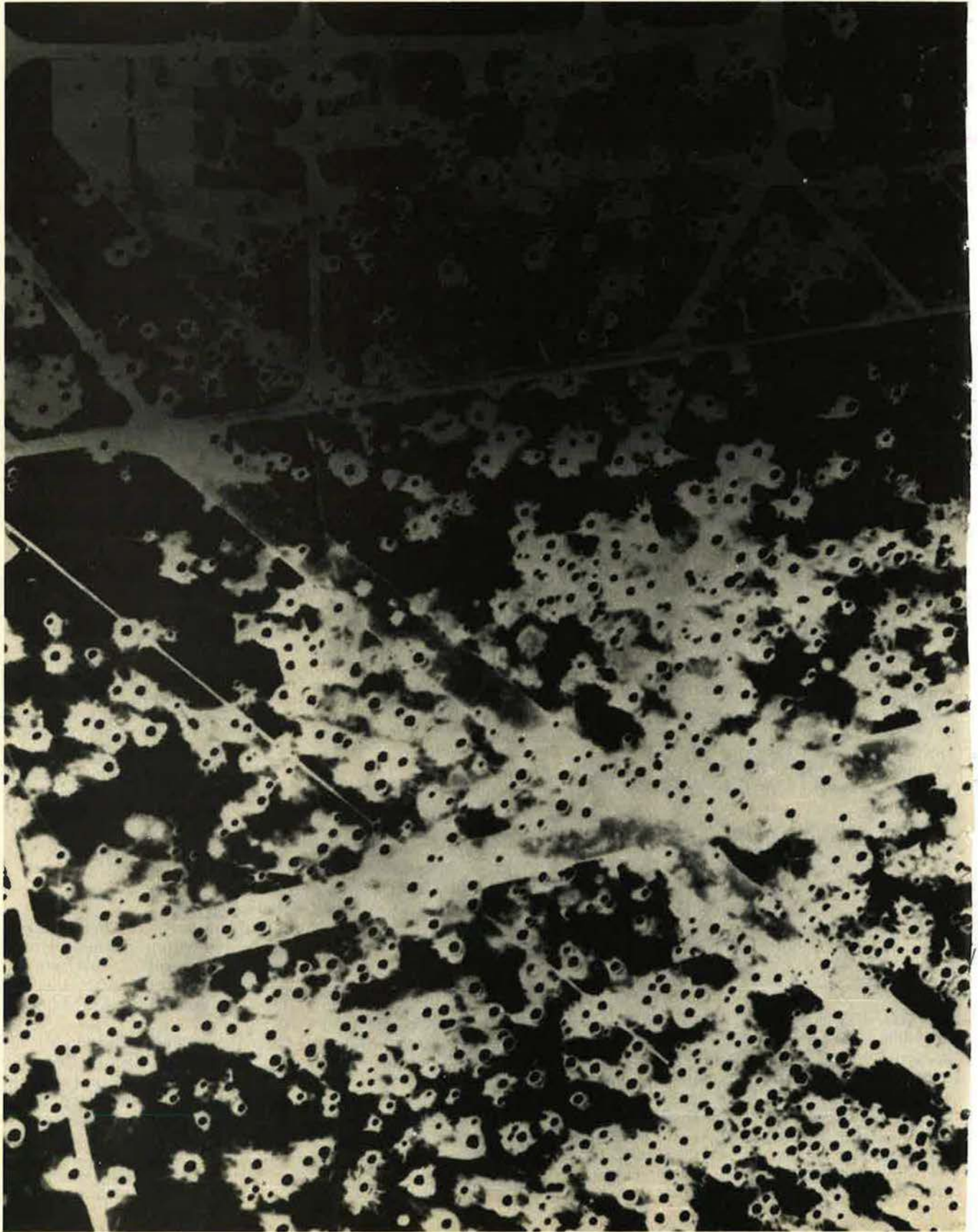
I am currently working on a video series and writing articles about airmen—from pilots of World War II to gunners in today's B-52s. I write by topic. My current topic is "Punching Out."

I am interested in hearing from any readers who may have an interesting story. Any help, whether it be a short story or a picture, will be appreciated. All inquiries will be answered, and safe return of pictures is guaranteed.

Jim Robinson  
3639 Beckham Dr.  
Shreveport, La. 71104



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By Edgar Ulsamer, SENIOR EDITOR (POLICY & TECHNOLOGY)

Washington, D. C., Sept. 2

## Go-Ahead on USAF's ASAT Program

Under Secretary of Defense for Research and Engineering Dr. Richard D. DeLauer recently told this column that the US plans to start operational testing of its space interceptor system, the so-called ASAT, beginning in 1983. This decision probably sounds the death knell for the ill-advised negotiations with the Soviets initiated by the Carter Administration that were aimed at barring the testing in space and deployment of such weapons.

The Soviets, who have been testing operational satellite killer weapons for years in various modes, are understandably eager to effectuate such a ban before the US completes development of such weapons and starts testing them in space. Additionally, there is reason to believe that this country—if it decides to pursue ASAT technologies energetically—could field systems that are considerably more advanced than the current generation of Soviet ASATs. These factors probably motivated a Soviet propaganda campaign in the United Nations this summer that alleged the Kremlin's devotion to keeping space a sanctuary from military activities and plugged the importance of keeping US ASATs from defiling the "purity of the cosmos."

Current US plans are to achieve operational status of the initial version of the ASAT by 1985. This will involve launching solid-propellant missiles from specially equipped F-15s; in turn, these missiles—a modification of SRAM, SAC's Short-Range Attack Missile—will deliver the so-called Miniature Homing Device to an orbital collision course with the target in order to effect a "kill."

Beyond this first generation of US ASATs are options for weapons that can reach targets in high-altitude orbits, including geosynchronous altitudes of about 22,300 miles, where many of the most important military satellites are positioned. The Soviets are known to pursue similarly advanced designs.

There is concern in Congress and elsewhere that currently proposed funding levels for the Air Force's ASAT program are marginal and could cause a schedule slippage.

## The Improved Accuracy Program

A key element of the strategic force modernization package about to be approved and announced by President Reagan is development and deployment of the D-5 SLBM, known also as the Trident II missile. The D-5 differs from the C-4 SLBM now being deployed on Poseidon and Trident SSBNs in terms of range and throw-weight as well as, most importantly, increased accuracy. The latter, the Navy hopes, will reach levels sufficient to qualify as a hard-target killing system.

The difficulties of providing SLBMs with CEPs (circular error probable—the statistical standard that predicts that fifty percent of a given type of ballistic missile will deliver their warheads within a specified radius from the "aimpoint") akin or close to those of ICBMs are major. The paramount factor is that ocean currents cause a submarine to be in a state of constant motion relative to the earth's land mass, where the SLBM targets are located.

The result is a twofold problem. For one, the position of an SLBM on lift-off is known less precisely than in the case of an ICBM being launched from a silo or shelter. But this problem is less critical—and can be corrected far more readily—than the random horizontal motion imparted to the SLBM as it breaks through the ocean's surface. This becomes an unknown component of the missile's velocity. While this horizontal motion is relatively modest, it translates into a major error factor over the missile's trajectory and causes a significant accuracy degradation.

In theory, there is an easy way out of the problem; it is the use of terminal guidance similar to the techniques that are being incorporated in "smart" munitions, tactical missiles,

and other general-purpose force systems. But terminal guidance probably won't be suitable for ballistic missiles in this century for a variety of reasons. The Navy, along with other Defense agencies, therefore, is working on other technological approaches as part of its Improved Accuracy Program (IAP) in order to solve the SLBM accuracy problem. At first, there was the notion that technologies borrowed from the Air Force-managed Navstar Global Positioning System (GPS) might be the answer. But this approach lacked sufficient survivability, would have caused major operational restrictions, and, thus, had to be dropped.

IAP-sponsored research led recently to a new concept that uses technologies distantly related to the TERCOM guidance and navigation technology that provides the Air Force's ground- and air-launched cruise missiles with high accuracy. The latest IAP approach involves sonar mapping of the ocean floors, mainly in the patrol areas of Trident SSBNs. Because of security classification, further details of IAP's radiometric SLBM guidance technology have not been announced.

There is indication, however, that the Defense Department's current hopes for providing the D-5 SLBM with a hard-target kill capability stem from the assumption that these advanced techniques can be made to work. There is, on the other hand, considerable concern in the technical community that this approach will require many years of additional research before the operational feasibility of this approach can be established. Further, there is some evidence that the Soviets are pursuing this or similar technologies and, presumably, are as aware as US scientists of the vulnerability of this technology to "spoofing" and other forms of hostile interference.

Even if the new IAP technology proves technically and economically feasible—and can be protected from countermeasures—there are other factors that make it difficult to build



SLBM systems that can achieve a reliable hard-target kill capability comparable to that of land-based ICBMs. The inability of submerged submarines—at least for the time being—to receive information from satellite systems about wind and weather conditions in the target area represents a significant drawback compared to ICBMs.

The latter use that information to compensate for such variables as prevailing winds, air pressures, and erosion of the reentry vehicle's nose cone due to rain or snow that will be encountered along the reentry path.

### The Overblown "Bias" Factor

Fostered by a handful of self-styled experts who lack rudimentary knowledge of the highly classified guidance technologies used by modern ballistic missiles, a recent spate of news reports created the impression that inertially guided ICBMs—whether US or Soviet—are inherently inaccurate.

Premise for this allegation is the media's "discovery" of bias, which is being portrayed as mysterious gravitational anomalies that affect a missile's trajectory from liftoff to impact on the target. Coupled with this half-truth is the contention that neither the US nor the Soviet missileers have made allowance for bias and that, therefore, neither side has any realistic chance of destroying the other's hardened missile silos. The conclusion that follows in the wake of this largely incorrect assumption is that no new survivably based missile system such as MX is needed, since the Soviet ICBMs can't seriously threaten the currently deployed Minuteman and Titan ICBMs.

It would, of course, be comforting if the Soviets indeed couldn't hit hardened US targets. Unfortunately the facts tell a different story. Not only does hard intelligence prove that the Soviets understand—and have corrected for—bias, but the large-yield warheads they continue to deploy on their new ICBMs more than compensate for miscalculation of the bias factor.

So far as the Minuteman force is concerned, bias is allowed for in establishing accuracy (CEP) assessments. True, no US ICBM has ever been fired across the Arctic region into the Soviet Union. As a result, there is now the contention that the Strategic Air Command does not know, and has not allowed for, the particular gravitational and other influences on an ICBM's trajectory, spanning the vast distance from its silo in the US heartland to the Soviet ICBM

fields along the Trans-Siberian Railway.

The fact that the US never test-launched any of its ICBMs from operational silos and never fired any ballistic missiles toward the polar region has been criticized in this space and elsewhere for years. The Soviets, by contrast, have done so on several occasions (and caused heavy adrenaline flow at SAC Headquarters and the National Military Command Center in the process). But this is not to say that either gravitational measurements of the areas between the US ICBM fields and their targets are lacking or that the SIOP's (Single Integrated Operational Plan) ICBM sortie plan fails to take bias influences into account.

The Defense Mapping Agency (DMA), for instance, compiles—and constantly refines—global gravity models by using satellites and on-site survey data. Additionally, Minuteman ICBMs—Is, IIs, and IIIs—have been test-launched in various, except northerly, directions. The information from these operational test launches showed no significant error sources being introduced by changes in the direction of ICBM launches. Similar empirical information from SLBM launches along various azimuths corroborated these findings.

The fundamental fact overlooked by academicians out of touch with modern US missile guidance technology—who spawned the current media debate—is that sophisticated computers on board modern ICBMs calculate velocity changes caused by gravitational influences and correct for variations along the missile's trajectory.

As a result, "gravity errors" in case of Minuteman III contribute only about two percent to the weapon system's "inaccuracy," meaning a deviation measured in tens of feet, rather than in excess of a nautical mile, as implied recently by some newspaper and magazine articles. By way of a benchmark, the effects of aerodynamic drag and climatic conditions in the target area on reentering Minuteman III RVs can cause at least as great a degradation in CEP as gravitational errors.

The real culprits behind accuracy degradation of ballistic missiles are irregularities in their acceleration profile. But even these deviations in combination with all other error sources are becoming meaningless. The reason is that the "lethal zone," meaning mainly the size of the crater dug up by detonation of a high-yield warhead, is large enough to accommodate the missile's CEP.

(Other factors, such as the enor-

mous thermal and shock waves generated by the exploding warhead also come into play, but generally their range of highest lethality matches the size of the crater. For instance, if the radius of the crater is 1,200 feet, it doesn't really matter if the warhead impacts at a distance of 600 feet from the aimpoint. Assuming the aimpoint is a Soviet ICBM silo, the cratering effect would upend the Soviet missile and the warhead's blast and heat wave would melt or otherwise destroy its critical components, even though theoretically the US warhead "missed" its aimpoint by several hundred feet. CEPs of that order are within the ken of modern US and Soviet ICBMs.)

### Washington Observations

★ The current infatuation on the part of some senior Administration officials with the so-called "common missile," envisioned as a hybrid between MX and the Navy's D-5 SLBM, appears to be born of incomplete analysis of what's common—and what's different—between these two types of ballistic missiles. Exhaustive studies of the largely uncommon "common missile" invented by the Carter Administration more than three years ago caused the subsequent scuttling of this approach. The facts have not changed; only about ten percent of the components can be shared among ICBMs and SLBMs that are designed with maximum commonality in mind. The requirement for different launch and guidance modes is the key reason why "common missiles" really are not common. About the only elements that common missiles can share are two out of three propulsion stages, which account for about ten percent of the systems' costs. The performance degradation inflicted on an ICBM that shares these components with the D-5—compared to MX—is major. The missile's throw-weight and, hence, the number of warheads it can deliver over intercontinental distances is roughly cut in half, from between ten and thirteen in case of a pure MX to between five and seven for a "common missile."

★ The prospect of greater-than-forecast deficits in the federal budget over the next few years has caused last-minute revisions of DoD's instructions to USAF's planners and programmers. The Air Force was requested to prepare a new, additional version of its five-year budget plan that is more than \$12 billion lower than the baseline Air Force figures for FY '83 through FY '87, or about the same as what the Carter Administration had allocated. ■



# AEROSPACE WORLD

## News, Views & Comments

By William P. Schlitz, SENIOR EDITOR

Washington, D. C., Sept. 7  
★ "Condor Redoubt '81," billed as "the most comprehensive readiness exercise ever conducted by the Air Force Reserve," took place during the last three weeks in August.

Air Reservists nationwide participated in the test of readiness planning, mobilization, and force deployment. The exercise focused on the ability of AFRES units to mobilize and augment their active-force gaining commands while working with them to test new procedures.

For the first time in this fifth in an annual series of exercises, long-range assault tactics were employed, as was deployment to bases in Western Europe, Central America, and Canada.

Another first was the involvement of Reserve C-9 Nightingale aircrews and aeromedical teams from AFRES's only C-9-equipped unit. Reserve medical specialists were also tested in a battlefield environment. In all, thirty-seven medical Reserve units participated in the "most massive" medical exercise in AFRES history.

Of the 55,000 Reservists who took part with their units or as Individual Mobilization Augmentees, 3,000 were deployed to forward operating locations.

For its part, the Air Reserve Personnel Center in Denver (also see story, p. 64) contacted members of the retired regular force, exercising for the first time a policy that provides for the mobilization of this additional manpower resource.

Adding realism to the exercise were the communications jamming and disruptions conducted by Air Force Communications Command-gained AFRES units.

While the entire exercise spanned nineteen days, nondeploying AFRES units undertook readiness drills at home stations during training assemblies on the last three weekends in August.

Condor was initiated at AFRES's Westover AFB, Mass., at one minute after midnight on August 15 when the 414th Composite Wing was activated as the primary unit responsible for all deployment action originating at the

base or at Goose Bay Airport in Newfoundland, Canada. The exercise was kicked off by a simulated mobilization alert message from the Secretary of Defense through the Air Force Secretary to gaining commands. AFRES units received notification of the alert via a contingency support staff at Hq. AFRES, Robins AFB, Ga. The units then contacted their members.

Westover served as an aerial port of embarkation and Goose Bay as a major FOL.

During the operation, Brig. Gen. Donald E. Haugan, Commander of Westover's 439th Tactical Airlift Wing, commanded the 414th. Theater Commander was Maj. Gen. James E. McAdoo, chief of AFRES's Fourteenth Air Force, Dobbins AFB, Ga.

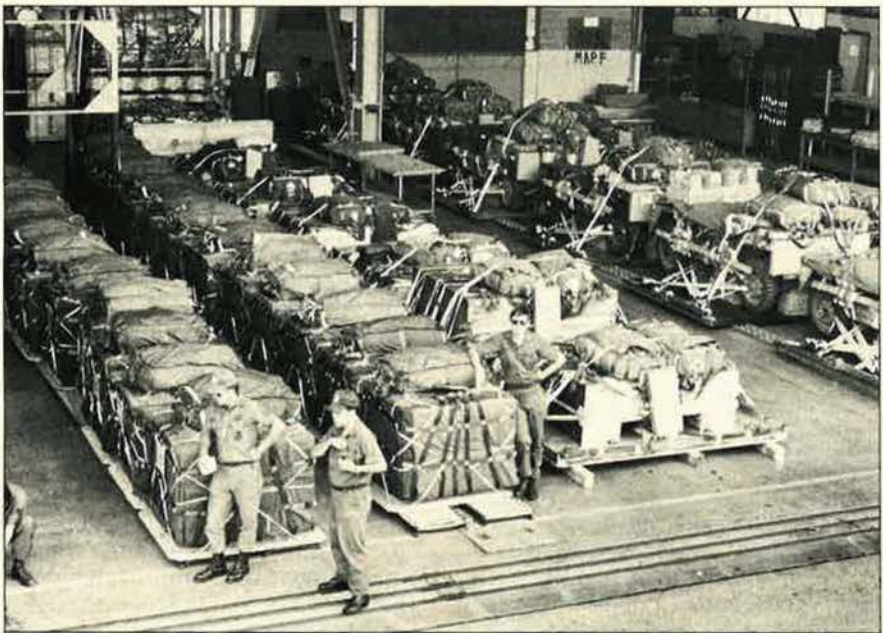
Practicing water and land rescue operations were squadrons of the 403d Rescue and Recovery Wing headquartered at Selfridge ANGB, Mich. (Also see story, p. 38.)

An additional first in the exercise was the involvement of AFRES's only

weather reconnaissance unit. WC-130s of the 930th Weather Reconnaissance Group, Keesler AFB, Miss., flew missions over the Atlantic during fighter and tactical airlift operations. (The year around, the unit performs about seventy percent of USAF's hurricane recon missions over the Atlantic and Gulf Coast areas in support of the National Hurricane Center in Miami.) In conjunction with the weather watch, Individual Mobilization Augmentees stood by at ground stations.

Both AFRES special operations units deployed during Condor. The 302d SOS, Luke AFB, Ariz., sent CH-3Es to Gowen Field in Idaho. (This unit has participated in several notable aerial rescue operations, including the MGM Grand Hotel fire in Las Vegas, Nev.) The 919th SOG, Eglin AFB, Fla., deployed AC-130 gunships to Howard AFB, Panama.

Among other overseas deployments, F-105 Thunderchiefs of the 508th TFG, Hill AFB, Utah, flew to Skrydstrup, Denmark, where they



Six jeeps and more than sixty tons of cargo are ready for loading and air drops during the initial phases of "Condor Redoubt '81" at Westover AFB, Mass. Work was done by 905th Mobile Aerial Port Squadron for the "most comprehensive readiness exercise ever conducted" by AFRES. See item above.





Secretary of the Air Force Verne Orr congratulates Kolligian Trophy recipient Lt. Col. Ricardo W. Mestre of the AFRES 301st Military Airlift Squadron, Travis AFB, Calif. Colonel Mestre demonstrated "exceptional airmanship." See item.

mounted a variety of missions in league with RDAF pilots. A C-141 brought in the 508th's maintenance personnel.

Other AFRES units and individuals also performed during Condor. Among them: aerial port units, civil

engineers, combat logistics support people, and security police.

★ USAF has requested a budget increase of \$1.7 billion for FY '82 operations and maintenance.

The increase would set the O&M

budget at \$19.2 billion and would "support the modernization of our tactical forces, increase flying hours, and reduce the backlog of maintenance repair of our real property," said budget deputy Brig. Gen. Richard D. Murray.

Of the proposed O&M package, \$16.8 billion would go to the active Air Force and would represent a \$998 million increase over FY '81 after accounting for inflation.

Some \$681 million would go to AFRES, \$79 million over the Reserve budget for FY '81, and much of the increase would be used to convert Reserve units to more modern aircraft.

The new budget asks an additional \$1.7 billion for the ANG, \$155 million over last year to cover inflation and force modernization.

The budget would add 101 aircraft to the active inventory, bringing the total to 6,479—with most additions being F-15s, F-16s, and A-10s.

Flying hours would increase by 113,000, with basic flight training and tactical fighter activities benefiting most.

★ An Air Force Reservist—only the second to be so honored—has been awarded the Kolligian Trophy for 1980, an award presented to a USAF aircrew member who most successfully handles an in-flight emergency.

Lt. Col. Ricardo W. Mestre, of the

## INTELLIGENCE BRIEFING

According to *Foreign Report*, published by London's *Economist*: In Angola and Ethiopia the Soviet Union showed how it could quickly set up an "air bridge" to deliver huge quantities of military supplies to its Third World friends and their Cuban allies. . . . In the Baltic, it is showing how on a different scale it can quickly mount a major seaborne assault force.

For the first time, the Russians have brought together landing vessels from the Murmansk, Black Sea, and Baltic fleets to prepare for an amphibious exercise in the eastern Baltic. Also for the first time, a Baltic exercise will be supported by the aircraft carrier *Kiev*, in the Baltic for the first time. The cruiser *Tallin*, from the North Atlantic fleet, is also in the Baltic.

Danish intelligence officers say that if the Soviets can concentrate their amphibious units quickly and successfully over the long distances involved in this exercise, there seems to be nothing to stop them from doing the same thing anywhere in the world.

The main reason for the exercise seems to be to coordinate the three fleets. But another purpose may be to show the units from Murmansk and the Black Sea what the Soviet marines from the Baltic region are capable of. They are regarded in the West as being among the best organized and equipped in the Soviet army.

The assembled landing craft will have the capacity to transport about 8,000 exclusively Soviet troops, fully equipped with armored transport, in a single lift. (The Soviet, Polish, and East

German commands normally have a combined capacity of about 5,000.)

Among warships that have joined the Baltic fleet are the 11,000-ton *Ivan Rostov*, the Russians' largest landing vessel, which can carry a full battalion of naval infantry and fifty armored vehicles. There are two *Alligator*-class landing craft, from the Murmansk and Black Sea fleets, each able to carry a battalion, and several smaller craft, each able to carry a fully-equipped company.

\* \* \*

The strange case of the Tass correspondent in Holland, Vadim Leonov, reveals that the staffers of the official Soviet news agency are expected by their masters to be linkmen with peace movements as well as spies. Leonov has left The Hague.

He was caught by Dutch intelligence while trying to bribe a defense ministry official to reveal state secrets. . . .

Leonov's second task was that of passing on information, even orders, to groups of the Dutch peace movement, which has strong left-wing leanings and includes Communist-front organizations. In one remarkably unguarded moment, Leonov boasted to a Dutch journalist friend that he could line up a demonstration of 50,000 people easily. . . . The Soviet Union is closely interested in peace organizations in Holland, which have been in the vanguard of campaigns to block the development of the neutron warhead and the current plan to install cruise missiles as part of NATO's attempt to counter the buildup of Soviet SS-20 medium-range missiles aimed at Western Europe.



301st Military Airlift Squadron, Travis AFB, Calif., was at the controls of a C-5 transport bound for Honolulu IAP for Guam. On takeoff, with seventy-three passengers aboard, the aircraft experienced an engine failure and subsequent fire. Then-Major Mestre applied emergency procedures, landed the aircraft safely, directed the evacuation of the twenty-one prime and augmenting aircrew and the passengers, and only then did he and the flight engineer leave their posts to survey that all were accounted for.

"Colonel Mestre's astute and professional actions in the wake of such potentially tragic circumstances are a credit to his dedication and skill as an Air Force Reserve aircrew member," commented Maj. Gen. Richard Bodycombe, AFRES Commander.

Colonel Mestre has logged more than 7,000 flying hours, with more than 3,700 in the C-5. In civilian life, he is a self-employed investor in real estate and oil development.

The trophy is sponsored by the family of USAF 1st Lt. Koren Kolligian, Jr., who was declared missing on a flight off the California coast in 1955.

★ The Air Force Accounting and Finance Center announced that AFRES and ANG members can now have their service pay sent directly to their savings or checking accounts.

According to AFAFC, its SURE-PAY program automatically sends a member's service pay through the Federal Reserve System to a financial orga-

## AEROSPACE WORLD

nization of choice, thus eliminating the inconvenience of handling and cashing paychecks. SURE-PAY also ensures that the money will be deposited on time every pay period and reduces to a minimum the possibility of misdirected checks.

Of the 859,673 paychecks processed by the Center in April of this year, for example, only ninety-five went astray, and they were set right by telephone within twenty-four hours of notification. In contrast, 324,673 paper checks were sent by the Center in the same month, with 407 failing to reach their correct destination. It took from six weeks to six months to acquire substitute checks from the US Treasury, Center officials said.

AFRES and ANG members can apply for SURE-PAY by filling out Treasury Standard Form 1199A at their local Air Reserve pay and allowance payroll office. The electronic banking system also provides for members' Leave and Earning Statements to be sent to their homes.

★ In an effort to provide better service, the Air Reserve Personnel Center, Denver, Colo., has been reorganized.

To streamline ARPC's operations, its directorates have been reduced from six to four:



In August, Japan's National Space Development Agency successfully launched an N-II vehicle carrying a geostationary meteorological satellite into orbit. The satellite is designed to warn of perilous storms over millions of square miles in the Western Pacific and otherwise monitor weather patterns in the vast area.



Air Force Chief of Staff Gen. Law Allen, Jr., on presentation of the Cheney Award to Capt. Kim F. P. Skrinak, center, and Ronald W. Summers of Detachment 1, 37th Aerospace and Recovery Squadron, Davis-Monthan AFB, Ariz. The two distinguished themselves during a bad-weather rescue mission. See item, p. 21.

- The Directorate of Personnel is responsible for Reservist promotions, demotions, discharges, survivor benefits programs, retirements, and the Point Credit Accounting and Reporting System. DP also develops and administers policies, plans, and programs for Reserve Officer and Airman Career management, appointments, reappointments, enlistments, reenlistments, classification of skills, and validation of aeronautical ratings and flying status.

- The Directorate of Personnel Data Systems is responsible for control and maintenance of master personnel records of all nonextended active-duty Reservists and Air National Guardsmen. DS also serves as the focal point for all matters pertaining to the Air Force's Advanced Personnel Data System.



● The Directorate of Individual Reserve Programs provides base-level personnel support—including Reserve orders, pay, and points—to Reservists assigned to individual participant programs. DR also provides direction and administration for the Air Force Reserve Mobilization Augmentee and Designee Programs.

● ARPC's Directorate of Plans is the Center's plans, programs, and mobilization focal point. Plans must determine the changes implemented by higher headquarters policy guidance and directives, then make recommendations to adjust ARPC plans and resources. In times of emergency, XP

coordinates the Center's efforts in Reservist mobilization recalls.

In directing the reorganization, ARPC Commander Col. James Egbert said the new operation will result in more efficient service for ARPC clients.

For a close look at ARPC activities, see story beginning on p. 64.

★ In recent Pentagon ceremonies, Capt. Ronald W. Summers and Kim F. P. Skrinak were presented the Cheney Award for Heroism.

While on duty with Detachment 1, 27th ARRS, Davis-Monthan AFB, Ariz., the two were notified that an injured

civilian pilot whose glider had crashed could not be rescued by a ground party because of bad weather, poor visibility, and hazardous terrain.

They flew an HH-1H to the scene, and despite winds gusting up to forty knots, retrieved the victim on the third try. He was hospitalized and recovered.

The award, established in 1927 in honor of the first US casualty in Italy in World War I, is presented annually to an active-duty or Reserve member performing a humanitarian deed in connection with aircraft.

★ The US Helicopter Team won the

## Fifth Air Force Turns Forty

It's been called the "Nomad Air Force," the "Nickel Air Force," and the "Fighting Fifth," and on September 20, Fifth Air Force, the air force "that never went home," celebrated its fortieth anniversary.

It was on this date back in 1941 when the record book opened with the activation of the Philippine Department Air Force at Nichols Field, Luzon, the Philippines. This unit was to fulfill the need for a strong air arm in the Western Pacific. On October 28, it was redesignated the Far East Air Force (FEAF).

When the Japanese drive in the Pacific drew in FEAF on December 8, it became the first Army Air Corps unit to participate in extended operations in World War II. The command, however, could only provide an all-important delay in the enemy push.

With his remaining aircraft, FEAF Commander Maj. Gen. Lewis H. Brereton was ordered to retreat to the north coast of Australia. After regrouping, he began directing missions against the Japanese in the Philippines.

On January 14, 1942, General Brereton moved his headquarters to Malang, Java, to be within closer striking distance of the enemy. It was there on February 5 that FEAF was redesignated "Fifth Air Force," which then consisted of the 5th Bomber and 5th Interceptor Commands. Later in February, all allied forces were ordered to fall back to Australia in the wake of an enemy advance.

Again they regrouped under the command of Maj. Gen. George C. Kenney. The drive then began through New Guinea, Java, the Philippines, Okinawa, and on to Japan where the Fifth set to work as an occupational air force after the ending of hostilities. This drive created such legendary heroes as Maj. Richard Bong, the all-time leading American ace with forty confirmed victories and Medal of Honor winner—one of twelve Fifth members to receive the highest award.

Fifth Air Force also brought with it an unmatched record of 3,445 aerial victories. Fifth was to become the most decorated numbered air force beginning with the distinction of being awarded the Presidential Unit Citation—the only numbered air force to receive this honor. The Fifth went on to receive this honor three more times.

After setting up command at Irumagawa Army Air Base in Tokyo (later to become Johnson Air Base and Iruma Air Base after reversion to the Japanese Air Self-Defense Force), it wasn't long before the Fifth became a fighting force once again—this time in Korea in 1950.

It was in the beginning hours after the North's invasion, when providing aerial cover for the evacuation of American noncombatants, that the first "kill" was recorded. A North Korean Yak fighter made an untimely challenge to an F-82 assigned to the Fifth.

When the Chinese entered the war in the waning days of 1950 with the MiG-15, the newly obtained F-86 was replacing

the outclassed F-80 and F-51. Fifth's mission with the F-86 was to hold the enemy at bay. The ensuing victory ratio was impressive, with 14½ MiGs destroyed for every F-86 lost. In all, 792 MiGs were destroyed and another 926 damaged. Tens of thousands of trucks and railroad stock were also credited to Fifth strikes.

At war's end, Fifth was charged with guarding the airspace over a tremendous geographical area larger than the continental United States. This was bordered by the Soviet Union, China, and North Korea.

In August 1964, Fifth responded to the conflict in Southeast Asia. Fifth furnished aircraft, crews, support personnel, and supplies until a cease-fire ended American involvement in early 1973.

In the 1970s, Fifth entered the decade as a peacekeeping force, ready to respond rapidly if called on.

In the past two years under the command of Lt. Gen. William H. Ginn, Jr., Fifth Air Force has increased its operational capability with the introduction of the F-15 Eagle and E-3A Sentry airborne warning and control system on Okinawa and the F-16 Fighting Falcon fighter in Korea. In early 1982, the A-10 Thunderbolt II will become part of the Fifth family in Korea.

Operations between the US and Japan and the Republic of Korea include "Team Spirit," a yearly joint exercise held in Korea between military forces from both countries. While in Japan, several "Cope North" joint exercises are held and combine the skills and experience of US and Japan's Self-Defense Forces.

—By 2d Lt. Kevin K. Krejcarek, USAF



A snapshot from the Southwest Pacific during the Fifth Air Force's salad days.



team and individual titles at the Fourth World Helicopter Championships in Poland in mid-August.

In a come-from-behind last-day, last-event finish, the team nosed out the West Germans by two points, amassing 2,253 points in the five-day competitions.

Victors in the individual team title were Chief Warrant Officer George Chrest, pilot; Capt. Stephen Kee, copilot; and PFC. Robert A. Didrikson, crew chief, all of D Troop, 1/9 Cavalry, 1st Cavalry Division, Fort Hood, Tex.

In the competition's first event, three US two-man crews turned in perfect scores, while a fourth crew posted 199 out of a possible 200 points, a fifth crew chalked up 198, and a sixth crew earned 197. On the second day, the nearly perfect US performance saw two of the three US crews entered posting perfect scores.

In the fourth and last event, the US Team started from third place and turned in a score of 597 of a possible 600 in the slalom to beat out the Poles and West Germans.

The US team, sponsored by the Helicopter Club of America, consisted of four US Army aircrews and one from Bell Helicopter, the first time

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the US Army has competed in the championships. Warrant Officer Chrest became World Champion Helicopter Pilot with 761 points, followed by a West German with 747 points.

★ In a test of its operational capability, an over-the-horizon backscatter (OTH-B) radar system under development by AFSC's Electronic Systems Division has successfully directed the intercept of a simulated enemy aircraft at a distance of 1,000 nautical miles.

That is more than five times the distance a conventional ground-based air defense radar system can detect aircraft.

"During the exercise, an ANG KC-135 tanker aircraft played the role of intruder," commented Col. William H. Lewark, Jr., OTH-B Program Director.

"We tagged it as an unknown when it didn't match computer position reporting information on known aircraft we were tracking in the same area."

Word on the intruder was passed to a NORAD Center at North Bay, Ontario, Canada, and when the "unknown" was about 1,000 miles off the Maine coast, the Center had two F-15s on patrol over Labrador intercept and identify.

The OTH-B, which bounces signals off the ionosphere, is in the final stages of a year-long test program and has routinely detected aircraft at distances up to 1,800 miles.

★ The Portuguese Air Force accepted the first of twenty A-7Ps in a brief ceremony at Andrews AFB, Md., in mid-August. The aircraft was presented by Vought Corp. President Robert L. Kirk to Rear Adm. David M. Altwegg, Director of the US Navy's Security Assistance Division, who then presented the aircraft to Portugal's Ambassador Vasco Futscher Pereira.

Ambassador Pereira praised the cooperation between Portugal and the US in delivering the first A-7P. He highlighted the importance of the A-7P to the modernization of NATO's only Iberian air force. He also noted that Portugal's modernization would continue with new systems for the Navy and the Army and, "why not, a second squadron of A-7Ps."

The A-7P is an A-7A rebuilt by Vought under the Military Assistance Program. Deliveries of the twenty aircraft are to conclude in 1982. The squadron is to be stationed at Air Base 5, near the town of Monte Real in central Portugal. From there, the A-7Ps are to perform close air support, tactical interdiction, and sea surveillance missions.

★ This past summer marked the sixtieth anniversary of the establishment of the world's first organized paying-passenger aerial transport service. In effect, the first airline.

That August day, four passengers climbed aboard a converted British World War I four-engine bomber for a flight from a primitive airfield near London to one near Paris. Cargo aboard that flight included a bundle of newspapers and some foodstuffs for delivery in France.

Soon, "tea-time" flights over London were being offered to drum up trade and prove the safety of such travel, although early passengers on the cross-Channel flights were asked to list their next of kin.

It became popular for the well-to-do to fly to Paris for the weekend,

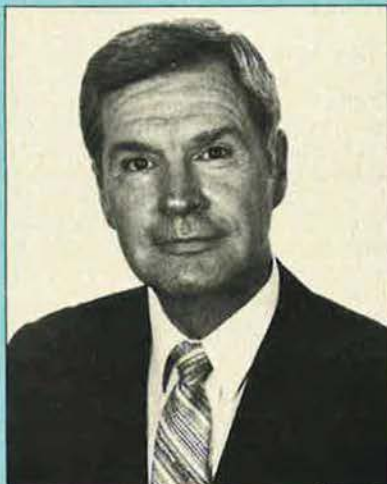
### Anderson Joins AFA Staff

Retired Air Force Lt. Gen. Andrew B. "Andy" Anderson, Jr., joined the headquarters staff of AFA in mid-August as Deputy Executive Director. General Anderson will assist Executive Director Russell E. Dougherty in carrying out Association policy directives.

After graduation from the US Military Academy in 1948, General Anderson attended flying school and embarked on a series of assignments that culminated in his appointment as Air Force Deputy Chief of Staff for Plans and Operations, the position he held prior to his retirement in 1979. He worked then as a financial planning consultant with a Silver Spring, Md., firm.

During his military career, General Anderson flew a combat tour in Korea in C-54 aircraft, was executive assistant to the US President's personal representative at the Paris Peace Talks in the late 1960s, had an assignment in the Plans and Policy Office at the Joint Chiefs of Staff, commanded a SAC bombardment wing and the B-52 air division on Guam during the Vietnam War, and served as Chief of the Joint Strategic Plans Branch of the Joint Strategic Target Planning Staff at Hq. SAC, Omaha, Neb. Before serving on the Air Staff, he was SAC's Chief of Staff.

General Anderson, who recently



New AFA headquarters staff member Andrew B. Anderson, Jr.

completed intensive studies in finance, holds two bachelor's degrees, both in engineering, a master's in history, and is a graduate of the Industrial College of the Armed Forces. A native of Danville, Va., he lives with his wife Barbara in northern Virginia. The couple have one son, Andrew B. Anderson III, an international lawyer in practice in New York City.





From left, Connecticut ANG Maj. Jim Skiff, Maj. Ron Hunter, Capt. Ed Waitte, and Maj. Gary Serisenev, all of the 103<sup>rd</sup> Tactical Fighter Group, recently took top honors in an Air Guard A-10 bomb and strafe competition. They all have been slated to represent ANG at "Gunsmoke 81," when they will compete against tactical fighter teams from AFRES, TAC, USAFE, and PACAF.

thus circumventing the tedious and time-consuming train-ferry-train method of reaching the City of Light.

In those early days, there was no radio communication with the ground, navigation was by dead reckoning or by sight of such ground objects as

rail lines, and one pilot set a record of seventeen forced landings on one flight. Pilots in the exposed cockpit wore goggles as did passengers riding in the open forward station (formerly occupied by the bomb-thrower/gunner), who were also issued flight

suits to wear for protection against the weather.

Wicker seats cut down on weight, all luggage was weighed, and gentlemen averted their eyes when ladies stepped on the scales. Of course, no food was served, although in the rapid progress of aerial travel it wasn't long before gourmet meals were being offered.

★ Four aviation pioneers were recently inducted into the congressionally chartered Aviation Hall of Fame, Dayton, Ohio.

● **Olive Ann Beech**, "the First Lady of Aviation," was honored for her more than fifty-seven years of contributions to general aviation. Her husband, the late Walter H. Beech, was enshrined in 1977. The two founded the aircraft company that bears their name, and are the second husband-and-wife team so honored. The Lindberghs were the first.

● **Charles S. Draper**, a leading space scientist, developed gunsight and artillery fire control systems used in World War II and Korea as well as FEBE stellar-inertial guidance systems and SPIRE, the first fully inertial guidance system, both used in B-29s. Dr. Draper also developed ICBM inertial guidance systems and that used during the Apollo missions. Dr. Draper helped create MIT's Instrument Laboratory, renamed for him in 1970, and of which he is Senior Scientist.

● **Edward H. Heinemann**, "Mr. At-

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tack Aviation," who as an aircraft designer, engineer, and executive helped create warplanes ranging from the SBD Dauntless to the A4D Skyhawk. At one point more than half USN's carrier-based aircraft bore his imprint.

• **Lawrence B. Sperry, Sr.** (1892-1923), an aviator recognized for his pioneering inventions in the fields of automatic flight control, aircraft instruments, and guided missiles. He also designed sports-type aircraft that helped popularize private flying. His father, Elmer A. Sperry, Sr., was enshrined in 1973. They are the first father and son so honored.

The Aviation Hall of Fame also set a precedent this year in honoring USAF's Thunderbirds for creating interest in flying among the nation's youth.

★ **NEWS NOTES**—A most unusual mission: Maj. Felix Czech and his **AFRES crew from the 514th Military Airlift Wing** (Associate), McGuire AFB, N. J., this past July hauled 200 cases, each containing **two pounds of bees and a queen**, to the Azores aboard a C-141. The bees replaced those lost when the islands were sprayed to destroy an infestation of Japanese beetles.

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In another matter involving insects, combat communicators of **California ANG's 162d Combat Communications Group** enlisted in the war against the Mediterranean fruit fly. Nineteen Guardsmen operated a TRC-61 FM radio system and switchboard linking fly-fighting operations.

The Air Force's **Test Pilot School at Edwards AFB, Calif.**, is registering "highly motivated and experienced" pilots for its next class, with an application deadline of January 1, 1982. The course, **forty-four weeks including 631 academic hours and 133 flight hours** for selected US and allied pilots, paves the way for a Master's in Aeronautical Engineering. Consult AFR 53-19 for application procedures.

The **917th Tactical Fighter Group**, Barksdale AFB, La., dominated the recent **AFRES gunnery competition** held at the Gulfport ANG Training Site, Miss. The unit, which converted to new A-10s only last year, took the



A "space creature" in heat-resistant gloves, coat, and face mask removes titanium part from forming block where it was subjected to extreme heat and pressure. The part is bound for the McDonnell Douglas F-15 Eagle fighter.

**overall team gunnery award and two of four individual gunnery events.** Every AFRES fighter unit competed in the event, called "Fighter Comp '81."

The **first of eight advanced C-130Hs** scheduled for delivery to **Georgia ANG's 165th TAG**, Savannah, was rolled out in August at Lockheed-Georgia Co., Marietta. The new aircraft will replace "E" versions. **Thirty-nine ANG and AFRES units** across the country operate C-130s. ■

## 3246TH TEST WING TECHNICAL ADVISOR

The 3246th Test Wing, Eglin Air Force Base, Florida, invites nominations and applications for the position of Technical Advisor.

The mission of the 3246th Test Wing is to conduct tests and evaluation of all types of nonnuclear munitions and electronic systems; provide test environments, instrumentation, and data acquisition and transmission facilities; and exercise surveillance of pertinent technical contractual operations in support of the mission of the Armament Division. The Technical Advisor serves as the principal technical advisor to the Wing Commander and provides authoritative consultant services to the Armament Division Commander and to other organizations and individuals both within and outside the Division.

Candidates are required to have a background in research and development of weapons and electronic systems; expertise in test and evaluation methodology; professional and supervisory experience in technical direction to a scientific staff; ability to perform high-level consultative and advisory work in formulating analytical studies and programs; and

appropriate academic degrees in engineering/technical disciplines. In addition, candidates should have a demonstrated outstanding technical competence in the development of plans and policies for accomplishing scientific programs which include acquisition of supporting resources.

The position is classified under the Senior Executive Service, General, with a salary range of ES-1 (\$52,247) to ES-4 (\$57,673), subject to the current \$50,112.50 statutory salary ceilings.

Letters of nomination and applications (SF 171, "Personal Qualifications Statement") will be accepted until 30 October 1981 and should be addressed to:

3201 ABG/DPCM  
ATTN: Mrs. Betty Cassell  
(Telephone 904-882-2941)  
Eglin AFB, FL 32542

Additional submissions concerning management and technical skills may be required. The 3246th Test Wing and Eglin Air Force Base are equal opportunity affirmative action employers.

Advertisement



# CAPITOL HILL

By Kathleen G. McAuliffe, AFA DIRECTOR OF LEGISLATIVE RESEARCH

Washington, D. C., Aug. 28

## AWACS Sale

President Reagan has a tough battle ahead convincing Congress of the merits of his proposed sale to Saudi Arabia of five E-3A Airborne Warning and Control System (AWACS) aircraft as well as conformal fuel tanks and air-to-air missiles for their F-15s.

The Administration is expected to concentrate its lobbying effort in the Senate since the GOP majority there provides the only realistic hope of getting the sale approved. However, twenty Republican Senators joined thirty-four Democrats in sending notification to the President of their opposition to the arms sale. The letter expressed "deep concern," stating that such action would not be in the national interest.

Little or no chance of approval exists in the House where before the announcement a resolution disapproving the sale was cosponsored by 252 members, including some strong Administration supporters like Rep. Jack Kemp (R-N. Y.).

Hearings in the House Foreign Affairs and the Senate Foreign Relations Committees are expected after official notification of the sale on September 29. Congress then has thirty days in which to disapprove and stop the sale. This would take votes of disapproval by *both* Houses.

Major concern of opponents rests with the security of Israel. Some members of Congress are reserving judgment until hearings commence while others such as Representative Kemp feel a *quid pro quo* is in order to warrant the sale of such sophisticated equipment, *i.e.*, Saudi support for the Camp David accords or acceptance of a US presence in Saudi Arabia.

The Administration stance is that the sale of the AWACS and the F-15 enhancements respond to the "legitimate security requirements of a country that is central to the success of our regional strategy."

## Airmobile MX

While awaiting final decision by the Administration on a basing mode for

the MX, congressional defense experts apparently helped put to rest development of the controversial airmobile system supported by the Secretary of Defense.

Sen. John Tower (R-Tex.), Chairman of the powerful Senate Armed Services Committee, stated flatly that previous airmobile studies showed it to be costly, unreliable, and of questionable survivability, and that Congress, therefore, would not go along with a concept rejected in the technical and military communities. In order for the Air Force to obligate or expend funds for MX, sixty days must pass without both Houses of Congress voting disapproval after the President announces his decision.

Reps. Melvin Price (D-Ill.) and William Dickinson (R-Ala.), Chairman and Ranking Minority Member, respectively, of the House Armed Services Committee, advised Secretary Caspar Weinberger that detailed hearings on MX basing modes resulted in the assessment that the airmobile approach costs would be substantially higher than those for the Multiple Protective Shelter (MPS) plan, and it would not compare to the capability inherent in the MPS system "in terms of independence from warning, survivability, enduring usefulness, and accuracy." Similar arguments were used by three relatively junior members of the committee—Reps. Ken Kramer (R-Colo.), David Emery (R-Me.), and Robert Badham (R-Calif.)—in expressing to the President their concern that an air-launched MX would be "strategically inadequate." Representative Emery subsequently submitted to the Administration an alternate basing plan, which consists primarily of ballistic missile defense systems to ensure survivability of MX missiles in Minuteman III and Titan silos.

## Proxmire Calls for Arms Treaty

Sen. William Proxmire (D-Wis.) said the time is ripe for the President to negotiate and bring before the Senate a strategic arms *reduction* treaty. The Senator attributed this to his belief that the President's popularity

would allow him an easy victory in obtaining the needed two-thirds Senate vote for treaty ratification. Senator Proxmire said that an arms treaty is needed for economic reasons as well as arms control purposes, *i.e.*, projected costs of planned strategic enhancements could constrain efforts to achieve a balanced budget in FY '84.

Discussions of an arms limitation or reduction treaty will become more prominent as the Administration now turns its attention to foreign and strategic nuclear policy. The President feels that redressing the strategic imbalance is basic to any sound arms control agreement. Eugene V. Rostow, Director of the Arms Control and Disarmament Agency, told the Senate that little can be gained by hasty negotiations with the Soviets. He did, however, state that any negotiating is tied directly to decisions on strategic weapons such as the MX and the multirole bomber.

## Neutron Bomb Supported

President Reagan's decision to continue production of the enhanced radiation warhead or "neutron bomb" caused little congressional reaction.

Both House and Senate Armed Services Committees earlier praised the Administration for requesting funds "more in line with committee expectations" for research, development, and production of nuclear weapons in the Department of Energy Authorization for defense programs. An undisclosed amount of the \$5 billion request was included for production of the neutron bomb.

An attempt in the House by Rep. Ted Weiss (D-N. Y.) to delete all funds for the weapon's production was handily defeated. No major opposition is anticipated in the Senate when the bill is debated, although Sen. Gary Hart (D-Colo.), a member of the Armed Services Committee, is known to be against production of the weapon. The Senator contends that it will serve not only to accelerate the arms race, but may jeopardize other defense policies with NATO countries, *e.g.*, getting allies to fund a greater share of the mutual defense burden. ■



# The Total Force

The reserve forces are a vital part of the cutting edge of US airpower, and can be more so if properly manned, trained, and equipped. The top Reagan appointee overseeing reserve matters tells what can be done.

## Reserves Are the Cutting Edge

BY THE HON. EDWARD J. PHILBIN  
DEPUTY ASSISTANT SECRETARY OF DEFENSE (RESERVE AFFAIRS)

**J**OHN Locke, in his classic essay on Civil Government, observed that:

He that shall oppose an assault only with a shield . . . without a sword in his hand . . . will quickly be at the end of his resistance. . . .

In these parlous times when America's vital interests are being challenged by an aggressive Soviet state in a broad spectrum of military, economic, and political arenas, Locke's words are as meaningful as they were in the eighteenth century. In the complex tensile pattern created by US force level requirements and countervailing budget constraints, the combat capabilities of the reserve components constitute not just an increasing area of the American shield but also a significant length of the blade. The air reserve forces are the edge of that length of the nation's blade.

### Dedicated Service

The story of the air reserve forces, a term that includes both the Air National Guard and the Air Force Reserve, is a litany of dedicated, selfless, and sometimes heroic service to the nation. Although it is a success story, it is the best kept secret in the country. An aggressive and creative Air Force leadership—active, Guard, and Reserve—has built a force characterized by professionalism, versatility, reliability, maintainability, and affordability as well as a rapid mobilization and deployment capability.



*Dr. Philbin: "By every unit of measure, of all the reserve components, the air reserve forces 'lead the force' in readiness and responsiveness."*

By every unit of measure, of all the reserve components, the air reserve forces "lead the force" in readiness and responsiveness. Yet few of those not directly involved realize it. In order to broadcast that fact, I welcome this opportunity to reach the Air Force community through AIR FORCE Magazine.

In early May, I was on the first day of my annual tour of duty down in the bowels of Hq. SAC's underground when Assistant Secretary of Defense (MRA&L) Larry Korb telephoned to ask me to take the Reserve Affairs job. I had only one question: "What is my charter and

what are the constraints?" His answer was equally pointed. "Ensure that our reserve components are the most responsive, well-equipped, and trained force in the world. Fix today's problems today—don't defer solutions to the 'out years.'"

And that is the basis on which I accepted the job and the premise on which I operate daily. I can assure you that Secretary Korb's deep concern for the reserve components is not unique in the Reagan Administration. The President himself has a personal interest in the reserve components and has directed that they be supported on a priority basis!

We need all the support we can get because things have changed. In the good old days, rapid mobilization and deployment of our Guard and Reserve forces was not a military imperative. But in the 1980s the potential adversary has the wherewithal to initiate actions that make it crucial to possess the ability to mobilize swiftly and deploy Guard and Reserve forces, if necessary.

The conviction, first articulated in the 1970s, that we could build Guard and Reserve forces capable of mobilization, deployment, and employment in the first days of a crisis was viewed skeptically at best. What was then a radical concept is now accepted military doctrine, graven in stone. During my tenure, I intend to foster that doctrine by capitalizing on the proven professional capabilities of the Air National Guard and the Air Force Reserve to win authorization for *full*



wartime manning and equipment modernization. To achieve the readiness posture demanded by the burgeoning reliance on the air reserve forces to meet contingencies, I also intend to stress mission-related training.

### **Manning the Force**

We are entitled to our pride in the success of the air reserve forces in improving overall manning, but we must not allow a debilitating complacency to creep in like an occluded front. There are always new challenges to be dealt with as we seek to achieve our manpower goals. For example, in the recruiting of nonprior-service personnel, we must simultaneously cope with a disadvantageous population trend and (due to increased retention) with an expected decline in the numbers leaving the active force. And in the critical area of retention, we must surmount the deleterious effects of equipment conversion programs on personnel.

These constitute only one category of the truly formidable challenges we face, but the importance of maintaining a fully manned air reserve force is so critical to national security that we dare not fail. But I am convinced there are enough patriotic young men and women who will get involved in work that is personally meaningful and essential to the country. There are still young people who will dedicate a part of their life to service in the Air National Guard and Air Force Reserve. It is up to us to find them and inform them of the need, the opportunity, and the rewards.

### **Training the Force**

Some of the finest readiness training available to air reserve forces comes in the guise of emergency rescue operations in the wake of disasters such as the Mount St. Helens eruption and the MGM Grand Hotel fire in which Reserve crews covered themselves with glory. These and the many other vital peacetime mission responsibilities of the air reserve forces not only contribute immensely to the day-to-day defense effort but also provide unmatched opportunities to improve individual and team proficiency.

I do not labor under the delusion

that meaningful readiness training can be assured by merely mandating it at the Pentagon. We can provide policies, and we can provide resources. But, ultimately, the value of training will be determined by the degree of dedication and the hard work invested in it by our young leaders. It is the noncommissioned officers, the lieutenants and the captains who must give precedence to mission-related training. As "middle management," they must be encouraged not to become so preoccupied with the satisfaction of administrative requirements that they allow any denigration in training to perform the wartime mission. It is only the ingenuity of our hard chargers that can make classroom academics bloom into a fruitful training experience. It is their professionalism that will provide us with a fully trained combat-ready force. I am committed to providing them with the proper tools to do that crucial job.

### **Equipping the Force**

I intend to press for equipment modernization of the air reserve forces as hard as I can.

Shortly after his installation in 1958, Pope John XXIII announced his wish to convene a Vatican Council. A curial elder objected, "We can't possibly have a Vatican Council by 1963." Pope John answered, "Then we will have one by 1962." And they did. That's an approach to naysaying that I shall keep in mind in pressing for equipment modernization of the air reserve forces sooner than some Pentagon "curial elders" think possible!

The quality and quantity of the equipment of the air reserve forces must be superior to, or at least com-

petitive with, the weaponry in the hands of any potential aggressor. It must also be logistically and operationally compatible and interoperable with that of the active forces. Unitary buys of new weapon systems that will satisfy the needs of both the active and reserve forces is the desired solution, is in consonance with the Total Force policy, and will be vigorously pursued. This concept is *not* something new. In 1970, DoD Directive 1225.6 directed the services to "issue and maintain equipment of combat standard quality in amounts required for training and mobilization in each hardware unit in the selected reserve of the reserve components." This is a policy whose time has come with a vengeance.

Readers of AIR FORCE Magazine need no words of warning from me about the Soviet threat. Through the annual publication of appropriate extracts of the IISS's "Military Balance," and its many learned articles on the subject, AIR FORCE has sounded the tocsin with crystal clarity and kept its readership informed of the Soviets' unrelenting attempts to achieve military superiority. But in light of that global environment, I urge you to support substantial increases in the resources devoted to the air reserve forces—indeed resources for all of our reserve components because together they make one balanced team—to ensure that the Air National Guard and the Air Force Reserve of the 1980s and the 1990s will consist of trained, modern, combat-ready forces capable of flying, fighting, and winning side-by-side with their active-force comrades whenever and wherever the nation's security so requires. ■

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*Dr. Edward J. Philbin is the Deputy Assistant Secretary of Defense (Reserve Affairs). This appointment is the culmination of a thirty-one-year Reserve career, which began in 1949 with five years of service as an enlisted Naval Air Reservist. Commissioned from AFROTC at San Diego State University, Dr. Philbin served on active duty as a USAF navigator and bombardier. His subsequent continuous Reserve service includes forty-one months of command experience, more than 1,000 flying hours, duty in Vietnam, and selection as the first Reserve officer appointed to the faculty of the Air War College, after being designated a Distinguished Graduate of the Class of 1978. Dr. Philbin was promoted to colonel in the Air Force Reserve in 1980, and transferred to the Standby Reserve upon appointment to his present post. He earned the Juris Doctorate, summa cum laude, from the University of San Diego School of Law in 1965. He has practiced law in San Diego since 1966, and has taught law at San Diego since 1970.*



# The Total Force

The vitalization of the Air Force Reserve begun in 1968 has produced a potent force meshing daily with the active Air Force and Air National Guard. It is aerospace power in being, no longer unknown.

## Air Force Reserve's Secret Is Out

BY MAJ. GEN. RICHARD BODYCOMBE, USAF

**T**HOSE of you who have heard me speak or have read other articles by me may recall one of my favorite themes: "The Air Force Reserve is the best kept secret in the country." At the time I began using this statement, in the early 1970s, there was a certain validity to the remark. However, due in great part to the support given us by the active force—tangible, aggressive, when-the-chips-were-down support—the secret is now out. The Air Force Reserve, as a full, participating member of the Total Air Force, is now recognized as a trained, manned, combat-ready force in being, and it is time for me to consign my "best kept secret" banner to the archives.

You are holding one proof of this new awareness in your hands. That such a prestigious publication as this would devote an entire issue to the Air Reserve Forces (ARF)—the Air National Guard (ANG) and the Air Force Reserve—bears witness to the new regard now given our nation's air reserve components. My friend Maj. Gen. John B. Conaway, Director of the Air National Guard, offers his comments on the ANG elsewhere in this issue, so I shall confine my remarks to the Air Force Reserve—where we are and where we are going.

My first subject is our people. Without them, there would be no further topic for me to address. Due to the tireless efforts of our commanders and recruiters, we continue to maintain a very favorable manning posture. Our end strength at the end of FY '80 was 58,921,



*General Bodycombe: "If we are to retain those whom we enlist, we must give them real-world missions. . . ."*

exceeding the program by 702. As FY '81 draws to a close, we are anticipating an end strength of just under 61,000. By FY '83, our programmed manning of 65,700 will be the second highest in the history of the Air Force Reserve. By way of comparison, just five years ago our manning stood at 48,500.

Frankly, studying these figures and projecting the trend to the out years leaves me with a slightly unsettled feeling. Where are these people going to come from? Those born during the postwar baby boom are now our middle managers, our mid-grade officers and NCOs. The eighteen-year-old window continues to dwindle and, as pay inequi-

ties are ameliorated, active force fallout (our primary recruitment source) can be anticipated to diminish proportionately. Faced with unfavorable demographic projections for those without prior service and a shrinking roster of veterans, both our recruiting and our retention efforts are going to have to be addressed with renewed vigor.

The results of concentrated recruiting are a more or less known quantity. If X number of candidates are contacted, Y number will enlist in the Reserve. Y may vary somewhat due to outside factors, but will fall within a predictable envelope. The variable—the wild card here—is retention. If we are to retain those whom we enlist, we must give them real-world missions and the opportunity to achieve self-fulfillment through the successful accomplishment of meaningful tasks. This we are doing.

In the past five years we have assumed responsibility for a broad variety of new missions, among them strategic refueling with KC-135s, and the Panama Rotation, using C-130s. We share both of these missions with the Air National Guard. In addition, we have expanded our fighter role and are accepting increased tasking from Military Airlift Command for our associate units.

However, this is only the beginning. Many new challenges and opportunities face us. Selected associate and aerial port units within the Air Force Reserve may be called on to participate as part of the Rapid Deployment Force (RDF). Concurrently, we are engaged in a new as-



sociate program whereby the Reserve will provide one-half of the aircrews for the new KC-10 tanker to be flown by Strategic Air Command. On the fighter side of our inventory, we are replacing our A-37s with A-10s and our F-105s with F-4s, while our piston-driven STOL aircraft, C-7s and C-123s, will be replaced by C-130s.

This flurry of modernization and conversion is creating considerable turbulence within the component. Our people are weathering this trauma magnificently. Currently, all our equipped flying units are combat ready, with the exception of two units converting to newer aircraft. All six of our associate strategic airlift wings and three strategic refueling squadrons are combat ready. And I should mention here that the parent wing for these three refueling units was awarded the prestigious Spaatz Trophy last year for operational excellence. (This unit is the 452d Air Refueling Wing, based at March AFB, Calif. For a special photo-report on their refueling activities, see p. 34.—ED.)

The new opportunities mentioned earlier also extend to our combat support units. In the future, we will see an increase in the number of medical, aerial port, and civil engineering units. There will also be a heightened complexity in these missions.

Combat and combat support units are not the total makeup of the Air Force Reserve. The Individual Mobilization Augmentee Program, whereby Reservists are assigned to and trained by active-duty offices, provides a cost-effective answer to selected wartime requirements. As integrated members of active force staffs, our augmentees in the future will find their tasks increasingly demanding in direct proportion to those

*Maj. Gen. Richard Bodycombe is Chief of Air Force Reserve, Hq. USAF, Washington, D. C., and Commander, Hq. AFRES, Robins AFB, Ga. He holds a bachelor's degree and a master of science degree from the University of Michigan. General Bodycombe flew B-24s in Italy during World War II and participated in the Berlin Airlift. He is a command pilot with more than 16,500 flying hours. General Bodycombe assumed his present position in April 1979.*



Counterclockwise from above: A KC-135 from the 452d Air Refueling Wing at March AFB, Calif., refuels F-105s of the 466th Tactical Fighter Squadron from Hill AFB, Utah. SSgt. Raymond Van Putten inspects the wing of a C-141. Members of the 50th Aerial Port Squadron prepare to load a C-141. SSgt. Michael Steffan seen preflighting a C-141 from MAC's 445th Military Airlift Wing, Norton AFB, Calif. (Photos by William A. Ford, Art Director)



of their offices of assignment. We will rely on them, as will the active force, to perform in the future as they have in the past.

In closing, I again draw attention to the active force and the support they have given—and continue to give—to the Air Force Reserve. Our missions, our training, our people, our equipment, and the challenges we face are now melded into one

homogeneous component. I have often stated that we can only be as good as the active force will allow us to be. And we are good. The Air Force, the Air National Guard, and the Air Force Reserve together constitute a formidable team. As such, we—the three of us—serve as a paradigm for the other services and those of our allies as well. Let's keep it that way. ■



# The Total Force

Having both State and Federal missions, the Air National Guard seemingly serves two masters. That the dual missions are executed well and professionally is high testimony to the dedication of the men and women of the Air National Guard, the cooperation of the States and territories, and the active Air Force.

## Air Guard Is Ready Around the Clock

BY MAJ. GEN. JOHN B. CONAWAY, USAF, DIRECTOR, AIR NATIONAL GUARD

**T**HERE have been many years and many changes in the Air National Guard since the first unit was organized in 1908. Then, the 1st Company, Signal Corps, of the New York National Guard had no airplanes and very few people.

The Air Guard has since come a long way, and the 1980s are a new and exciting decade for us. I believe the Air National Guard can take pride in the challenges ahead and feel that the 1980s will truly be an Air National Guard era.

It is appropriate to me, as we start the 1980s, that AIR FORCE Magazine take a serious and in-depth look at the Air Guard and Air Force Reserve.

The ANG is truly a national resource in that it has both a State and a Federal mission. Historically, the State mission dates back to the days of the original militia when the purpose of the Guard was to protect home and community. Our State mission is much the same today. We provide organized, trained, and equipped Air Guard units, which, under competent orders of State authorities, will provide protection for life and property and preserve peace, order, and public safety. These missions, funded by the States, include natural disaster relief, conducting search and rescue, maintaining vital public services, and providing support to civil defense.

Recent State missions for the ANG range from combating the medfly to packing and transporting radioactive waste. It is the State mission we fulfill as citizen-airmen



General Conaway: "Equally important to the ANG as getting good people is keeping good people."

that makes the Air Guard unique within our total Air Force.

Our Federal mission is to provide units properly equipped and with trained personnel for prompt mobilization as a primary source of augmentation for the United States Air Force in the event of a national emergency or war. The advent of the Total Force Policy in 1973 has found the Air Guard assuming a greater role in the day-to-day operational activities of our "gaining" major commands: TAC, SAC, MAC, PACAF, AAC, and AFCC.

Air Guard people and equipment can no longer be considered just "weekend warriors," but have

evolved into a full-time contingency force with worldwide missions. We participate in deployments around the globe, in such places as Egypt, Turkey, Greece, Germany, Norway, Korea, and the United Kingdom. Guard KC-135 tankers are standing constant alert as part of the European Tanker Task Force. "Ski-equipped" C-130s of the New York Air Guard perform DEW Line resupply missions each year.

Six months of each year, Guard C-130s are in Panama providing airlift support to the Southern Command. On duty in Panama year round are ANG A-7s and support personnel, charged with support of defense of the Panama Canal. In the United States, Air National Guard units stand air defense alert at sixteen locations, twenty-four hours a day, seven days a week, 365 days a year, as we have for the past twenty-eight years.

The Puerto Rico Air Guard provides aerial surveillance of the island, and Hawaii's Air Guard provides 100 percent of that State's air defense capability. Also, the Hawaii Guard last year participated in an exercise called Cope North, where they flew training missions with the Japanese Self-Defense Forces. They were the first American airmen ever to do so.

As these examples illustrate, the Total Force Policy really works between the Air Force and the Air Guard on a daily basis. Various Air Guard units have roles in every major exercise that is planned, and we are involved in approximately





Four A-7D attack aircraft of the 132d Tactical Fighter Wing, Iowa Air National Guard, in formation over their home state. The 132d TFW was cited in 1980 as having the best-maintained aircraft in TAC's Twelfth Air Force, including both active and reserve units.

twelve major deployments a year in locations outside CONUS.

Recently, during Tactical Air Command's Exercise Coronet Can-

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*Maj. Gen. John B. Conaway was commissioned in the Air Force through ROTC at the University of Evansville, Ind., from which he earned a B.S. degree in business administration. After undergraduate pilot training, he flew the F-102 fighter-interceptor in the Air Defense Command. He joined the West Virginia Air National Guard in 1960, flying the SA-16. In 1963, he transferred to the Kentucky Air Guard, flying the RB-57. He was called to active duty with the Kentucky Air Guard in 1968, and served in Alaska, Panama, Japan, and Korea. He returned to Kentucky upon deactivation in 1969, becoming its Air Commander in 1972. He was promoted to brigadier general in 1977 and recalled to active duty as Deputy Director, Air National Guard, a post he held until designation as Director on April 1, 1981.*

vas, the 138th Tactical Fighter Group, Oklahoma ANG, received air-refueling support and equipment and personnel transport from the first KC-10A Extender ever to participate in a deployment. Nine of our flying units and several communication units are tasked to support the Rapid Deployment Force.

Two of our major goals for the 1980s are to increase the combat readiness and sustainability levels of our units and attain the highest state of equipment modernization in Air Guard history. We currently have more than 1,600 aircraft in the Air Guard. These weapon systems represent sixty-three percent of the Air Force's interceptor force, fifty-seven percent of the tactical reconnaissance force, forty-seven percent of the tactical airlift, twenty-five percent of the tactical fighters, seventeen percent of the air-refueling tankers, and fourteen percent of the rescue and recovery capability. We are proud of our contribution

and are planning and organizing now to improve our support for these important wartime missions.

The Air Guard is composed of ninety-one flying units and 235 independent nonflying units. We are constantly evaluating our resources and willingly accept those missions where we can make a positive impact. Recently, we added a Civil Engineering PRIME BEEF Flight on the island of Guam to our forces.

In the overall communications mission, we have more than 20,000 Air Guardsmen and women assigned to 184 Air Force Communications Command and Tactical Air Command-gained units. Air Guard communications people provide fifty-five percent of the Air Force's electronic installation capability. ANG communications units also represent seventy-five percent of the people and seventy percent of the equipment used in mobile communications and air traffic services roles. In FY '82, Air Guard tactical control units will constitute fifty-five



percent of the Air Force weapon system control capability.

Air Guard Civil Engineering units are organized to provide PRIME BEEF and RED HORSE support in the event of mobilization. Our engineering units often perform their annual training away from their home site in support of engineering requirements at various Air Force bases around the world.

In the past five years, eighty-five percent of our Air National Guard units have been modernized with newer equipment. A-7 and A-10 fighters and new C-130Hs, all direct from the factory, are excellent examples of the modernization effort currently taking place in the Air Guard. The Air Force plans to replace the remainder of our O-2s, F-101s, EB-57s, and F-105s. Our goal is to modernize Guard forces in conjunction with active force modernization and achieve the optimum Total Force balance. The force modernization efforts in the Air Guard will lead to incorporating the F-16

into our inventory in the near future.

There are currently more than 97,700 officers and airmen serving in our Air Guard units. Another of our goals for the 1980s is to attain 100 percent of the Air Guard wartime strength of 101,000 people. This is the most ambitious recruiting program we have ever undertaken and one which will take the concentrated hard work of all our people.

Equally important to the ANG as getting good people is keeping good people. Our goal in the 1980s is to retain sixty-five percent of our men and women. Every aircraft, radio, bulldozer, and syringe is only as good as the people associated with it. Good people are the Guard's most important assets, and we want them to grow with us.

We are where we are today, and have achieved one of the highest levels of readiness in our history, thanks to the dedication, expertise, and selfless service of our Air Guard

men and women. We can only be as good in the 1980s as our people are. That is why we are very involved in the realistic unit training programs and real-world operational missions available to us.

In order for the Air National Guard to successfully overcome the challenges of the 1980s, we must, as an organization, meet the goals that I have outlined. We will be working with the Air Force, the Governors, and Adjutants General of the States and territories to strengthen and modernize the Air Guard.

The men and women of the Air National Guard are committed to "providing for the common defense" in the same spirit as their forebears in the original militia 345 years ago. No longer "weekend warriors," they work to perform their varied missions at the highest state of readiness possible, often on a daily basis. The overall objective in the 1980s is to make a great Guard even better. ■



New A-10 Thunderbolt II aircraft of the Connecticut Air National Guard's 103d Tactical Fighter Group make a pretty sight as they fly in formation over New England. The 103d is known as "The Flying Yankees."



# Through the Maze

BY CAPT. PHIL LACOMBE, USAF, CONTRIBUTING EDITOR

**F**OR those who are not Air National Guardsmen, the ANG personnel system seems like a maze—a confusion of weekenders, active duty for training, active-duty support personnel, civil servants, state employees, and more.

Many Guardsmen report they share this confusion. No wonder.

Although the majority of Guardsmen are part-timers, obligated to a weekend each month and fifteen days of training each year, there are no fewer than four different categories of full-time personnel supporting the Guard, subdivided into at least twelve different programs for full-time Guardsmen.

Here, with the compliments of AIR FORCE Magazine, is a program—you can't tell the players without it.

## Full-Time Support Personnel

With the exception of state Adjutants General and a few other special positions, or in cases where a Guard unit has been called to active service by state authorities, these Air National Guardsmen are federal employees. There are four categories of Full-Time Support Personnel in the Air National Guard. These people assist in training, administration, maintenance, and operations of the Air National Guard. The categories are:

### (1) ACTIVE-DUTY COMPONENT PERSONNEL:

These are Air Force people on active duty who are paid from the Air Force's personnel appropriation. Included here are the Air Force Advisors assigned to each Air National Guard organization.

(2) **MILITARY TECHNICIANS (ANG TECHNICIANS):** This is probably the least-understood category of full-time Guard personnel. Air Technicians are full-time federal-excepted Civil Service employees who support Air National Guard units. They wear their uniform to work every day and run the Guard unit on a daily basis. In addition, and as a condition of employment, they are members of the Air National Guard unit they support. Their positions during the week, as Air Technicians, and on the weekends, as Guardsmen, must be compatible. Air Technicians are paid from the ANG appropriation.

(3) **ANG TITLE 5 CIVILIANS:** These are ANG competitive civilian employees, paid from within the ANG budget. Subject to the same rules and regulations as other Air Force federal civilian employees, they are classified under the same rank/pay-grade structure.

(4) **ACTIVE-DUTY GUARD PERSONNEL:** These are Guardsmen who are on active duty for 180 days or more to provide full-time support to the Guard. Guardsmen in this category are paid from the Air National Guard's fiscal appropriation. Active-duty Guardsmen serve for specified periods under either Title 10 or Title 32 of the United States Code. The provisions of their service depend on which of the various programs they are serving under.

Some of the most significant active-duty Guard programs are:

- **Policymaking:** A number of Air National Guard officers serve on active duty as members of the Air Staff. In this role, they participate with their Air Staff section in formulating Air Force policies that affect the Guard.

- **Guard Bureau Duties:** A group of Air National Guard officers serves on active duty within the National Guard Bureau. The National Guard Bureau is a joint Army and Air Force agency, designated as the official communication channel between active Air Force commands and the states/ANG units.

- **Recruiting and Retention:** For some time now, ANG recruiters have served periods of active duty to bolster the Guard's recruiting capability.

- **Administration and Support:** This program provides active-duty Guardsmen to staff the Air National Guard Support Center at Andrews AFB, Md.; the ANG Comptroller Support Center at St. Louis, Mo.; the ANG Historical Archives Office at McGhee-Tyson Airport, Tenn.; and the Fighter Weapons Office at Tucson, Ariz.

- **ANG Training:** Under this program, ANG personnel serve on active duty to provide a staff for the ANG Professional Military Education Center and other ANG full-time training requirements.

- **Property and Fiscal Officers:** The Governor of each state and the Commander of the District of Columbia National Guard each appoints an officer from his National Guard organizations to perform active duty as the Property and Fiscal Officer for his jurisdiction.

- **Military Full-Time Training and Administration:** At the end of Fiscal Year 1980, the ANG had filled 739 full-time support positions with ANG personnel who volunteered for active duty. By the end of FY '81, the program will have 1,650 active-duty Guardsmen performing full-time unit support duties.

- **Permanent Field Training and Gunnery Range Manning:** ANG personnel in this category are on active duty to staff the ANG's permanent training sites and air-to-ground ranges.

- **Support of the USAF Mission:** In this program, full-time active-duty ANG personnel perform active-duty missions. Examples are the ANG air defense and air refueling alert missions and personnel to support the C-130 and A-7 rotation flights to the Panama Canal Zone.

## Full-Time Active Duty for Training Personnel

A final category of full-time Guardsmen consists of those Guardsmen on active duty for training. This is a separate category, governed by different legislation. Essentially, Guardsmen are brought on active duty for a variety of training programs—from Basic Military Training to Undergraduate Pilot Training—and for other specialty courses. ■





*On his way to a tactical training mission, Maj. Bruce Brandt, an Air Reserve Technician with the 508th Tactical Fighter Group at Hill AFB, Utah, points his F-15 Thunderchief into the air.*



**T**ODAY, the Air Force Reserve is a true member of the aerospace force—capable and ready. Here, from left to right, are AIR FORCE Magazine photo impressions, typical of the units that provide our Strength in Reserve. As the California sun begins its trek across the morning sky, SSgt. Michael Steffan, a Reservist crew chief with the 445th MAW at Norton AFB, Calif., prepares his own star—a C-141 StarLifter—for its trip. Another Reservist, Maj. David W. Cooper, a KC-135 pilot with the Reserve's 452d AREFW at March AFB, Calif., prepares for takeoff. Preflighting a Reserve F-105 of the 508th TFG at Hill AFB, Utah, is crew chief SSgt. Thomas P. Waint. "Thuds" from the 508th TFG head for a rendezvous with a Reserve KC-135.



# STRENGTH IN RESERVE

PHOTO FEATURE BY WILLIAM A. FORD, ART DIRECTOR  
Text by Capt. Phil Lacombe, USAF







*Two "Thuds" from the 508th TFG practicing the low-level tactics necessary for penetration of an enemy's radar-protected airspace.*





**I**N August, the Air Force Reserve conducted a major exercise called Condor Redoubt '81 (see "Aerospace World," p. 18). The exercise tested all aspects of our Strength in Reserve — airlift, tactical fighter, rescue and recovery, and air refueling. The units pictured here were among the participants (as was the 305th Aerospace Rescue and Recovery Squadron from Selfridge ANGB, Mich., featured on p. 38). FAR LEFT: TSgt. David R. Van Patten, an Air Reserve Technician with the 452d AREFW, concentrates on flying the KC-135's air refueling boom connected to an F-105. The skill of Reservists like Sergeant Van Patten enabled the 452d to win the prestigious Spaatz Memorial Trophy last year, as SAC's top refueling wing. LEFT: Three F-105s from the 508th TFG, surrounded by light sparkling in the canopy of the photographer's "Thud," prepare to refuel. The 508th recently deployed to Skrydstrup, Denmark, during Condor Redoubt '81 and trained in the environment they would encounter if they were deployed to Europe during wartime. Also deploying to Europe were KC-135s and crews from the 452d AREFW. The tankers joined the Strategic Air Command's European Tanker Task Force at RAF Mildenhall, England, to support Air Force flight operations throughout Europe. ABOVE: Two members of a Reserve Associate unit, the 50th Aerial Port Squadron of the 445th MAW, Sgt. Robert Saville (left) and Sgt. Paul Verdun (right), join a member of their active-duty counterpart unit, Amn. Patrick Armistead, in pushing a pallet aboard a C-141. The 50th APS was selected last year by the Military Airlift Command as the command's outstanding aerial port squadron for the second year in a row. During Condor Redoubt '81, the 445th MAW joined other Associate Reserve wings assigned to MAC strategic airlift and tactical airlift missions, in airlifting Army and Air Force Reserve units to Westover AFB, Mass., and Goose Airport, Newfoundland, Canada. ■



# The Total Force

In ARRS's 403d Wing the Air Force Reservists frequently trade their civilian clothes for flight suits—and combat fatigues. Humanitarian endeavor is the primary mission of . . .

## Aerial Rescue in War and Peace

BY WILLIAM P. SCHLITZ, SENIOR EDITOR

**T**HE three Air Force pararescuemen—PJs, for short—stood in the swaying cargo bay of the airborne HC-130 and donned “tree suits” over their camouflage combat fatigues.

Then the PJs shrugged into the harnesses of their parachutes, the safety straps of which served to secure stubby GAU-5 submachine guns to their sides.

It was to be a routine training jump without packs or rescue equipment. But while the intended drop zone in West Virginia was of adequate

size and free of obstacles, it was entirely walled in by tall stands of timber—hence the precaution of the tree suits with their wide neck- and head-protecting collars.

The three pararescuemen jumped successfully, landing on the DZ almost exactly where they had planned. They then teamed up with two other PJs previously “inserted” by helicopter, struggled through dense underbrush using map and compass to a clearing three miles distant, and were picked up by helicopter for return to base.

The not unusual aspect of this training mission is that it was planned and conducted in its entirety by citizen-members of an Air Force Reserve unit, the 403d Aerospace Rescue and Recovery Wing headquartered at Selfridge ANGB, Mich.

One of the three PJs—TSgt. Denzie Darnell—the next day put on a full complement of scuba gear—including twin tanks of compressed air—and a parachute for a jump from an HC-130 to a water landing in nearby Lake St. Clair. The day after, he found himself firing an M-60





machine gun through the open port of an HH-3E Jolly Green Giant helicopter flying a low-level range mission. Later during this flight, while the helicopter hovered, he also made a descent via hoist cable and jungle penetrator. In short, an active three days for the young Reservist who in civilian life is a physician's assistant.

The object of Sergeant Darnell's activities during this recent Reserve stint was to ensure his "currency"—a word used often in flying Reserve units. It has no financial connotation but simply means "keeping current" in the techniques and skills of one's military specialty. And while many Reservists put in much more than the one-weekend per month, two-weeks-a-year tours required by law (or other periods of service, depending on Reserve category), the currency problem is always with them. This is particularly true since the skills being honed may be needed in a future war. Very few waivers are permitted on currency qualifications.

#### Motivating Factors

Sergeant Darnell is not unique, in

that his civilian job closely parallels his military specialty of pararescue-man. Many Reservists' civilian careers do. But the big question for an outsider is why have they chosen to wear a uniform part-time—with the associated disruptions of family life and the like—when the civilian job appears to offer adequate rewards? That question, asked of Reservists serving with the 403d Wing at Selfridge and its collocated 305th Aerospace Rescue and Recovery Squadron, elicited a variety of responses.

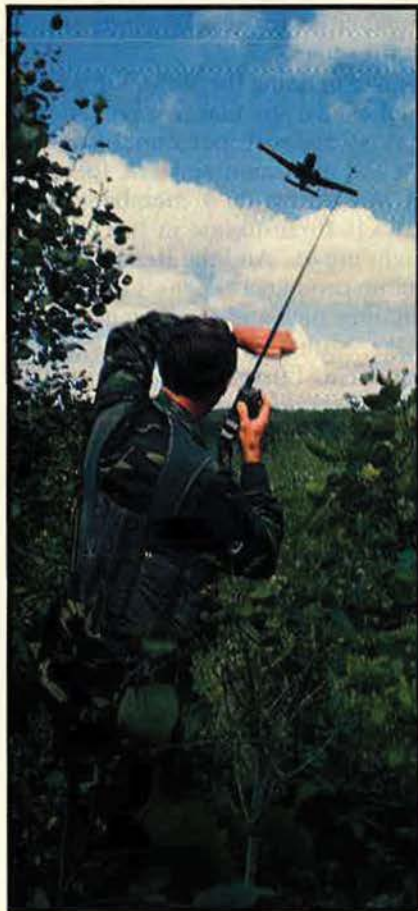
"It's not for the money," said Capt. Ed Horne, whose civilian job is piloting jetliners for Eastern Air Lines. "Being in the Reserves gives me a chance to do some real flying, not just monitoring instruments. Another plus is working with good people. There's a lot of camaraderie."

In Sergeant Darnell's case, the medical training he received in the military pointed the way toward a civilian career. He maintains his Reserve status because he likes being associated in an interesting and exciting way with the Air Force, particularly as a PJ.

"I lose money every time I go on Reserve duty," declared MSgt. Jon Hoberg, another PJ who in civilian life is with a computer consulting firm. "But it is a terrific change of pace. When I tell neighbors that I'm due to jump out of an airplane, they often don't believe me."

SSgt. James P. Alderisio's story is typically untypical. Mustered out of the US Marine Corps after a three-year hitch, he joined a Reserve Army Ranger unit while attending the University of Michigan. After the Rangers sent him through Jump School, he was at Selfridge for a training drop one day and spotted some PJs in their combat fatigues and maroon-colored berets. When he learned their mission—saving lives—he said, "That's for me," and signed up—at age twenty-nine. In civilian life, Jim Alderisio is a law student, and his Reserve pay helps with tuition.

Many Reservists aim to earn at least the fifty "points" that make a "good" year—one of twenty needed to secure Reserve retirement pay. The more points the better, in an equation in which points times highest grade served equals pay.



OPPOSITE PAGE: AFRES HC-130s configured to refuel helicopters in flight or provide command control and communications constitute an important element of ARRS's rescue capability. LEFT: Air Reservists are in the forefront in the evolution of aerial rescue techniques. ABOVE: "extractions" via helicopter hoist cable. RIGHT: Reserve pararescuemen strive to keep "current" in their various—and comprehensive—military rescue skills.





Besides a full schedule of training missions to hone combat rescue skills, 403d Reserve Wing HC-130s and helicopters in many instances have also responded to calls of distress from the civilian community.

Other Reservists indicated strong motives of patriotism, the need to serve, and the stability of location—for the Reservist and his family—afforded by a Reserve assignment. Underscoring Reserve service popularity is that the 403d Wing is at 106.5 percent of authorized strength, with a waiting list of applicants—and this with no draft as an inducement to sign up.

### Emphasis on Mission

In almost every instance, the Reservist being interviewed cited the Wing's work of saving lives as a major factor in serving in a Reserve slot.

Word of the Wing's mission has helped in its relations with local communities as well. Thus, in the recent era of strong antimilitary sentiment that swept the nation, the Wing's elements were largely immune. This was in large measure because the Wing's capabilities can be—and have been—quickly brought to use to help civilians needing rescue.

As an example in a growing list of aerial saves, the Wing's 304th Aerospace Rescue and Recovery Squadron, based at Portland IAP, Ore., swung immediately into action to rescue survivors following the eruption of Mount St. Helens volcano last year. During the three weeks that followed, the 304th was credited with saving a total of sixty-one lives. It was supported by the 305th ARRS and another Wing squadron, the 303d ARRS stationed at March AFB, Calif.

For its part, a fourth Wing squad-

ron—the 301st ARRS at Homestead AFB, Fla.—contributed one of the latest saves when it flew a newborn infant with a respiratory disorder to medical treatment. This brought the Wing total of credited saves so far this year to thirty-one.

Situated as it is in the Northwestern US, where there are huge stretches of forest and wilderness areas and the oftentimes raging Pacific Ocean, the 304th ARRS frequently has the opportunity to exercise its talents. Spectacular among its latest rescues occurred this past June when eleven mountain climbers on Mount Hood's Elliot Glacier were lifted to safety by the unit's helicopters. The 304th also participates in the MAST (Military Assistance to Safety and Traffic) program, providing emergency medical and airlift services to the civilian community.

In contrast, in the Northeast Great Lakes area where the 305th Squadron holds sway, opportunities to put rescue skills to the test are not so plentiful. There, "competition" is in the form of existing emergency civilian services. Coast Guard ships and aircraft also stand ready. Even so, the 305th is eager to do its part. As an example, when a light plane crashed during a storm ("Emergencies don't always happen in good weather" is a rescue maxim), the squadron was requested to assist in locating it and quickly got a search helicopter airborne. Civil authorities arrived at the crash site first, however, and after a preliminary check indicated all aboard were dead and called off the rescue operation.

In the vicinity, the 305th chopper decided on a last look and put down a PJ who discovered a child still alive aboard the aircraft.

### Informing the Public

Despite its record of saves, the Wing doesn't rest on its laurels. It has a broad community relations program that includes offering guest speakers and tours of its facilities. Wing points out that within the Air Force Reserve are the only existing capabilities for several kinds of air/sea rescues.

In explaining the Wing's mission, spokesmen say that five typical Reservist support personnel can be trained and maintained at the cost of one active-duty member. That ratio is three-to-one in the case of flight crews. And the Reservists incur no personnel expenses other than training pay and, in special situations, sometimes travel costs and per diem. Further, maintaining the unit Reserves affords US taxpayers a tremendous break in having a combat-ready force standing by at little cost, ready to be called to active duty by the President at a moment's notice.

Under the Air Reserve Technician (ART) program AFRES-wide, about fifteen percent of the Reservists are full-time civil servants who form the permanent-body "skeleton" of the units—the "glue" that holds Reserve units together and keeps them functioning effectively. "Technician" is an umbrella word used by the Civil Service to describe that category of employee. What it really means is "adminis-



trator." For example, 403d Wing Commander Col. Richard L. Hall is an ART. But he's also a colonel in an Air Force Reserve unit and as such must pull at a minimum his two weeks' active duty per year and one weekend per month.

Under law, all ARTs must be Reservists (while all Reservists, of course, are not technicians). The technicians, with their many years of experience, provide the "corporate memory" for the units in which they serve, particularly in the maintenance field.

In terms of rescue in civil emergencies, these full-time specialists give their units almost immediate response time in calls for assistance.

On the other hand, the 403d Wing's four squadrons can also be assigned special missions. For example, 304th Wing aircraft and people were on hand at Lake Placid during the 1979 Winter Olympics as part of a "Munich"-type contingency plan.

For Reservists, the rewards of such service can be gratifying. For their part in the Mount St. Helens rescues, 403d Wing personnel were awarded a total of seventy-five Air Medals and fifteen Air Force Commendation Medals.

Wing personnel also participated

in the evacuation of US citizens from Nicaragua and the Jonestown humanitarian mission.

In a mission-related activity, the 403d Wing provided forty percent of the rescue support—and all of the associated planning for it—for the first Space Shuttle launch. It also provided people and aircraft for the ocean-surface recovery of the Shuttle's rocket boosters following the launch. The Wing is scheduled to participate in subsequent Shuttle launches.

For all of this, however, the Wing has the primary mission of combat rescues—anywhere in the world. And USAF is the only air force that maintains such a capability. (Other air forces have paramedics, to be sure, but not trained to perform rescues under combat conditions.)

### Combat Record

Many of the Wing's PJs and other members of the unit for that matter—had considerable combat experience in Southeast Asia. To cite just two examples: MSgt. Jon Hoberg, for instance, had his jaw shattered there to the extent that Air Force surgeons fashioned a new one for him from one of his ribs. And Capt. Ken Haan, flying helicopters for the Army at the time, was shot down five times.

PJs and/or Wing aircrew took part in the rescue mission on the *Mayaguez*, the Son Tay prison camp raid, and the evacuation of Saigon. Among their decorations, personnel of the Wing's 305th ARRS alone have been awarded sixteen Distinguished Flying Crosses and 137 Air Medals for action in SEA and elsewhere.

In terms of other experience, the 305th Squadron's HC-130 line pilots average a bountiful 3,363 flight hours, while the unit's instructor pilots have logged a mind-boggling 5,692-hour average. Some of the pilots have logged 10,000 hours.

The squadron's HH-3E line pilots have racked up an average of 3,200 flying hours, while the instructors average 2,044 hours.

The Wing's other squadrons are similarly experienced.

### The PJs—An Essential Asset

In the military services, the term "elite" has widespread use. Navy SEALs teams are elite, all pilots are an elite of sorts, etc. Where used, the word seems to connote some sort of specialized training or capability. Without belaboring the point, if this is the case then the label certainly applies to the Air Force's PJs.

The stringent weeding-out process in the making of a PJ begins with those selected for training; only one out of 100 applicants is chosen. Then there are eight weeks of grueling physical conditioning before the rigorous training program even commences. And what training: parachuting to both land and water, scuba diving, mountain climbing, extensive medical, and the rest—in all, about a nine-month course. (It is little known that the PJs are also trained to act as crewmen in any of the several aircraft they are expected to ride in.)

The learning process in this profession never really ends, especially regarding survival techniques. The PJ's greatest satisfaction is knowing he is putting his hide on the line to save others.

For all that, any PJ will be the first to admit his limitations. Said Jim Alderisio, "Despite all the cross-training and acquired skills, we can't do much good unless we *get there*, and we can't *get there* without our aircrews and a team effort."



An HC-130 of the 305th Aerospace Rescue and Recovery Squadron, Selfridge ANGB, Mich., with some of its rescue equipment on display at this past summer's International Air Tattoo in the UK. (Also see September issue, p. 152.) The aircraft arrived in England after a twelve-hour, nonstop flight from the US. From RAF Greenham Common—site of the Tattoo and a USAF base in the British Isles—the HC-130 flew as "King Five Three" in the fixed-wing segment of a competition dubbed "Sea Search 81." This event was a highlight of the Tattoo and featured aircraft from eleven nations. The Selfridge HC-130 brought along its own team of maintenance people and two pararescuemen.





While HH-3E crews can expect fire-suppression help from their "Sandys," they can also defend themselves.

It is an understatement to say that the PJs are not management top-heavy. The PJ section at the 305th ARRS at Selfridge, for example, has *no* clerical slots. And while there is no regulation forbidding it, there are no officer PJs, although that may change. The PJ section at the 305th is run by MSgt. George Hefferon, a full-time Air Reserve Technician.

On the civilian side, the PJs are an educated bunch, many having college degrees or working toward them.

USAF is aware of its considerable investment in the PJs. When one Reserve unit in the US Southwest switched missions, its several PJs were reassigned to the 305th ARRS at Selfridge so as not to lose them. They now travel at government expense from as far away as Fort Worth, Tex., to pull their two-week Reserve stint (the weekend tours are spent with a local unit). Two weeks or more, that is, since many Reservists, of whatever specialty, spend much more time with their units than is required, as mentioned above. Especially those who are self-employed or at liberty for long periods, such as teaching professionals. "In some cases, at times it seems like two full-time jobs," said one Wing pilot. This sort of dedication to duty has often led to marital discord.

### Aircraft, the Key Element

And while the PJs rely on their crews to get them to and from res-

cue sites, the 403d Wing's aircraft are crucial to the missions of all hands.

To focus on the 305th Squadron in terms of Reserve forces rescue capability, the squadron is equipped with four HH-3E Jolly Green Giant helicopters that have self-sealing fuel tanks, armor plating, defensive armament, a rescue hoist, and a retractable in-flight refueling probe. (This last is essential; in one demonstration of possible range, for example, an HH-3E—with periodic refueling by HC-130 tanker—flew nonstop from the US east coast to England, a thirty-two-hour flight.)

For defensive armament, the Jolly Green can mount up to three M-60D machine guns, each capable of firing 550 rounds of 7.62-mm ammunition per minute. The helicopter can tote 5,500 pounds of fuel.

Also in the squadron's stable is the key to combat rescue operations, the two HC-130 aerial tankers. This type of aircraft provides the only in-flight helicopter refueling capability in the Air Force. The tanker can remain airborne for sixteen hours at a stretch, carry 73,000

pounds of fuel, but is unarmed and vulnerable. The 305th Squadron tankers fly nonstop between Selfridge and Hawaii several times a year.

(A passenger aboard a 305th tanker during a routine helicopter refueling operation remarked that the eighty-one-foot length of drogue connecting it to the helicopter trailing it didn't leave much margin for maneuver error. "We have the option of wearing chutes during refuelings," responded the tanker's loadmaster, TSgt. Bill Shaw, "but we don't bother. It's only happened once that a chopper's rotor has sliced through a tanker's tail section," he said nonchalantly. Asked about refuelings in high winds or weather, "Things can get a bit hairy," said Sergeant Shaw.)

Using predetermined light signals, the squadron regularly practices communication-out refuelings. The tanker's direction-finding equipment is capable of picking up and homing in on helicopter transmissions during comm-out situations.

The squadron's other two HC-

### Rescue's Words of Advice to "Survivors"

The Aerospace Rescue and Recovery Service's forces are referred to generally throughout the Air Force simply as "Rescue," as in "When Rescue comes for you. . . ." In turn, "survivor" is Rescue's term for anyone who has lived through being shot down or a plane crash—or, for that matter, civilians in trouble who need rescue. The word is a bit chilly but to the point.

Through their long experience—the Korean War's Air Rescue Service was the first professional combat rescue force and the most decorated unit of that conflict—Rescue folk have compiled a list of commonsense do's and don'ts for aircrew survivors in combat.

Prior to a mission, aircrew should ascertain certain information, such as where the selected areas for evasion or simply "safe" areas are, and where the Jolly Green rescue helicopters are, either on ground alert at home base or at forward operating locations. If the aircraft is still flyable after being hit, head it toward one of these areas.

Once on the ground, **STAY CALM**. Downed crew members may find themselves talking to a wingman, FAC, or Sandy, who will ask about physical condition so that the PJs on the Jolly can prepare for treatment. Survivors should also note and report on enemy activity in the area for suppression purposes.

Survivors must also respond to authentication questions, to forestall enemy trickery.

Survivors should prepare for pickup. Get rid of parachutes; a Jolly Green can generate rotor wash in excess of seventy knots. Get marker smoke ready to pop but don't inform Rescue what color it will be; Rescue will say what color it is as a method of verification.

Maintain radio discipline. A beeper going full tilt can disrupt interplane and interphone communications. Excessive radio chatter can interfere with the flight engineer's hover instructions to the pilot and blot out requests for air strikes.

When the survivor hears the aircraft, tell it which way to turn—south, northwest, etc. Once the search aircraft is sighted, vector it in using clock positions—with the aircraft as the clock.

Finally, once the PJ is on the ground, stay put. He'll find you. If a survivor goes thrashing through the bush, the armed PJ might mistake him for the enemy. When he finds you—despite his lower rank—**DO AS HE TELLS YOU!**



130s are also equipped with advanced direction-finding equipment, but no aerial refueling capability. They are designed for the search role and paradrops and as "King Birds"—to act as command control and communications aircraft during rescues.

As to aircraft equipping the 403d Wing's other squadrons, the 301st at Homestead has the same mix as the 305th. The 303d at March operates six HC-130s not equipped for aerial refuelings. And the 304th at Portland flies five HH-1H Huey helicopters and five UH-1N Hueys.

In all, the 403d is the biggest Air Force Reserve Wing in terms of flying squadrons and aircraft, and as such maintains fully one-fourth of the Aerospace Rescue and Recovery Service's resources.

### Evolving Tactics

First of all, consider the 304th Wing's combat mission. It is much broader than the rescue of downed aircrew. "We're trained to rescue anyone who needs rescuing," commented the Wing's Commander, Colonel Hall. That could include ground troops cut off from their units, reconnaissance parties needing retrieval, and the clandestine "insertion" or "extraction" of Special Forces teams, for example.

In any event, the evolving rescue tactics are based on lessons learned in Vietnam combined with an appraisal of the effectiveness of a potential enemy's antiaircraft weaponry.

"We don't delude ourselves as to our vulnerability in the face of a dense hostile environment in which enemy troops are armed with heat-seeking, shoulder-fired surface-to-air missiles," said Capt. James Woolworth, a 305th Jolly Green pilot with seven years of active duty under his belt. "And while we believe we have the tactics to deal with enemy fighters coming against us during rescue attempts, we perceive the Soviets' heavily armed Hind-D helicopter as a major threat," he added.

A classic rescue mission in Southeast Asia went something like this: A rescue force would be mobilized once a downed pilot was located or his general whereabouts ascertained. This consisted of perhaps two helicopters, an HC-130 tanker doubling as a command and



*Superbly cross-trained in a variety of skills, pararescuemen can also perform as crew members in the aircraft in which they serve.*

control platform, and a number of Sandys to provide protective fire. ("Sandy" was the nickname of the A-1E Skyraider, but now applies to A-10s or any other fighter aircraft providing fire support.)

The routine of a downed pilot "popping smoke" to indicate position had evolved during the war, as did emergency beepers and the jungle penetrator at the end of a helicopter's hoist cable to deal with three-tiered forest growth.

Once enemy fire was suppressed, the helicopter would either land or pick up the pilot via the hoist. In any case, a PJ would stand by to assist. (Early on, the enemy learned to hold fire until the helicopter got close in, to avoid being "hosed down" by the accompanying fighters.)

"These initially successful rescue tactics turned sour later on with the increased density of the enemy's antiair weapons of all kinds," said Jim Woolworth. "So except in certain circumstances, they're outdated."

Any remaining disbelievers were almost certainly turned around during last year's two-week exercise planned entirely and hosted by the 403d Wing at training sites near Alpena, Mich. Besides 403d people from all four squadrons, numbering about 600, also participating in the exercise was an AFRES refueling wing from March AFB, Calif., an active-duty forty-five-member se-

curity team, ANG A-10s, members of a civil engineering flight, and a Coast Guard unit to help in water rescues. Forty-nine different units were involved.

The "enemy" included two Army helicopter gunships, fifteen Canadian Reserve infantrymen, and two dozen Special Forces troops from Fort Bragg, N. C.

But the big shocker came in the form of a "Redeye" ground-to-air missile simulator unit from the 1st Infantry Division, Fort Riley, Kan., that proved conclusively that Southeast Asia rescue tactics are no longer viable.

"One commonsense tactic we have devised," said Colonel Hall, "is to fly our helicopters at treetop level to deny enemy ground troops reaction time. Another in our bag of tricks is night missions at treetop altitudes, for which we'll need night-vision goggles and other special equipment. As for our HC-130 tankers, we plan to keep them in 'safe' areas flying 360 degree 'banked' orbits and conduct aerial refuelings at 200-foot altitudes. This presents its own set of problems, because under ordinary conditions the tankers must throttle back to near stall speeds to allow the slower-flying helicopters to join up. This could be hazardous in hilly terrain, where pilots couldn't perform nose-down accelerations to break out of stalls."

During "Paid CRTE" (for Combat Rescue Training Exercise), the



Wing exercise, successfully tested was a "Sky Genie/STABO," a device at the end of a hoist cable to which a person being rescued and a PJ could be strapped and flown quickly out of a hostile area before being brought up to the helicopter.

Another daylight rescue technique would depend on timing. PJs "inserted" into an area would locate the downed pilot and help or guide him to precise map coordinates where at a specific time a helicopter would arrive for the pickup and rapid egress.

"In any case," commented Jim Woolworth, "we won't send helicopters into areas where enemy anti-air hasn't been suppressed. In some instances in Vietnam, rescue aircrews pressed on with their missions in the face of impossible odds and took unacceptable losses."

### Wing Maintenance Expertise

Reserve units have traditionally experienced a harmonious maintenance situation, and the 403d Wing is no exception. In the 305th Squadron, for example, some of its maintenance specialists have up to twenty years of experience. Someone seeking a maintenance slot in the unit as an ART must have at least five years' experience even to be considered.

The stability afforded by Reserve unit status is a contributing factor. The maintenance specialists know they will be at the same base—other than deployments—working on the same aircraft until either the aircraft are replaced or the people retire. In such a context, much care is lavished on the aircraft and there is dedication and pride in the work. And once again, the unit's humanitarian mission of saving lives, dependent on the equipment, has a tendency to bring out the best.

"For example," said Maj. John W. Morgan, 305th Deputy Commander for Maintenance, "King 833, which has logged 5,600 hours of flight, looks like new inside. It helps also that the aircrews are of superior quality. We haven't lost an aircraft since 1952."

The 305th's maintenance manning is made up of fifty percent full-time Air Reserve Technicians and fifty percent Reservists.

But Major Morgan is not without justified complaint. His shop is



Reserve Rescue people train knowing that any day they may have to face the real thing. Here, working with a simulated casualty and litter.

plagued by the same parts-shortage situation that exists Air Force-wide. And the expertise of his maintenance people is offset to a degree by the limited support performance—due to relative inexperience—demonstrated at the depot level. In some cases, Major Morgan has authorized the cannibalization of parts to keep aircraft operational, but this only adds eventually to maintenance man-hours that have to be made up. The long delays in acquiring parts is also troublesome.

### Equipment Needs

Planners at the 403d Wing are contemplating the eventual replacement of their aging HH-3E Jolly Green Giants. A possibility might be the Sikorsky UH-60A Black Hawk equipped for low-level night missions and aerial refueling. That aircraft is currently being produced to equip the 101st Airborne Divi-

sion at Fort Campbell, Ky. Division staffers have long been developing tactics for night assaults and low-level night missions. (One sidelight is that it has been determined that nonsmokers have better night vision than smokers.)

One surprise for an outsider is the praise heaped on the 403d's HC-130s by Wing personnel, who regard the aircraft as the durable C-47 "Goonie Bird" of the coming decade. Staffers point out, though, that the aircraft's navigational equipment can be subject to jamming and they'd like to see it upgraded with inertial navigation devices that currently equip several other USAF aircraft types.

Thus, it is the contribution by personnel of the 403d Wing that puts special meaning in the motto of USAF's Aerospace Rescue and Recovery Service: "That Others May Live." ■



# The Total Force

An element of US "strength in reserve" is the nation's capability to call-up its reserve forces when required. Different levels of mobilization produce force levels and unit structures tailored to the situation. The continued testing and flexing of the mobilization machinery ensures its readiness when next needed.

## Mobilization Is Flexible

BY BENJAMIN S. CATLIN, AFA SPECIAL ASSISTANT/DEFENSE PERSONNEL MATTERS

IT HAS been said that World War I was inevitable once the Kaiser made the decision to "mobilize." The German plans were so thorough and so detailed that, once mobilization started, reservists were required to report to their units and then these units moved out by train to the front across the German border, and new units moved in to await the arrival of their reservists. It was a highly technical operation, depending on timing and transportation. If the units did not move out on time, the entire system could become hopelessly clogged. Thus, the decision to mobilize was, in effect, a declaration of war.

Our country has come a long way since then, particularly in the mobilization procedures we use in the United States. The President's hands are not tied as the Kaiser's were. The President and the Congress have several options and four different types of mobilization, and none of them is tantamount to a declaration of war.

The basic authority for mobilization is found in the law, US Code, Title 10. Section 672 of Title 10 gives Congress the authority to declare a national emergency and order mobilization. Section 673 gives the President the authority to declare a national emergency. When this is done, he can call up 1,000,000 Reservists and National Guardsmen for up to twenty-four months. Another section (673b) gives the President the authority to call up to 100,000 members of the Selected Reserve for up to ninety days without declaring a national emergency.

### Types of Mobilization

There are four different types of mobilization: selective, partial, full, and total.

- A *selective mobilization* would



*Uncomplicated and effective: Western Union processes computer tapes that result in "mailgrams" being sent to selected Reservists for call-up.*

be the call-up of certain types of units to bolster the active forces, such as calling up C-130 units to augment Military Airlift Command.

- A *partial mobilization* would be the call-up of units and individuals to support a specific contingency plan.

- A *full mobilization* would be the call-up of all units and individuals in the Ready Reserve to expand our armed forces.

- A *total mobilization* would be the call-up of all individuals and units in the Reserve and Guard and qualified retired personnel, to create additional units.

The responsibility for mobilizations is divided between Congress and the President. The President has the authority to call up 100,000 members of the Selected Reserve

for up to ninety days without a declaration of a national emergency. However, by declaring a national emergency, he can call up to 1,000,000 members of the Ready Reserve to serve up to twenty-four months. In time of war or a national emergency declared by Congress, any unit or any member of any Reserve component may be ordered to active duty without his consent for the duration of the emergency or the war and for six months thereafter.

World War II was a total mobilization.

### Korea—1950—53

The Korean War was a partial mobilization. President Truman declared a national emergency. However, there was no real plan for mobilization. In spite of this, all the Air Force Reserve units were called up, as were more than 120,000 individual reservists. The Air National Guard contributed twenty-two of its twenty-seven wings, with more than 45,000 officers and men serving on active duty. The recall lasted approximately twenty-one months for most of the officers and men who were recalled.

### Berlin Crisis—1961—62

On October 1, 1961, as part of the military buildup caused by the heightening of international tension in Europe, a partial mobilization was ordered by President Kennedy. More than 22,000 Air Guardsmen and 5,600 Air Force Reservists were called to active duty. The Air National Guard contributed seventeen Tactical Air Command fighter squadrons, four TAC reconnaissance squadrons, six C-97 transport squadrons, one TAC control group, and support elements. The Air Force Reserve contributed two troop carrier wings, five groups, and 3,500





*In the autumn of 1962, President John F. Kennedy visits with a C-119 crew at Homestead AFB, Fla., following the call-up during the Cuban Missile Crisis. With him, right, is Gen. Walter C. Sweeney, Jr., TAC Commander at the time.*

quirement for the air reserve force units, and the mobilized units had trained for their combat role. However, the peacetime reserve force organizations were structured differently from their wartime counterparts. Thus, the units all had to be reorganized immediately after mobilization. This mobilization also pointed up the necessity for reserve force units to train and operate with "Gaining Command" regulations and procedures during their peacetime training and resulted in the concept of Inspector General (IG) inspections and Operations Readiness Inspections (ORI) of the reserve units by the active-duty gaining commands.

### **Cuban Missile Crisis—1962**

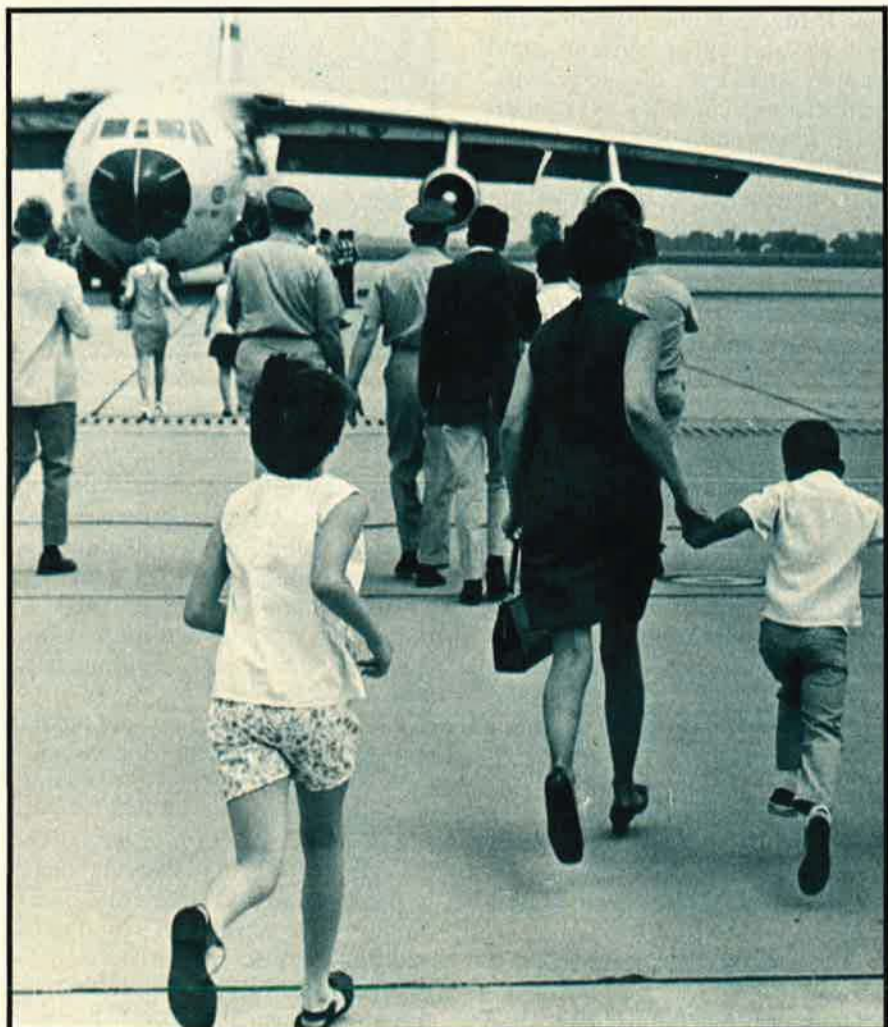
A few months after the release of the Berlin Crisis recallees, another crisis occurred that resulted in the call-up of Air Force Reserve units.



*Reservists of the 305th Aerospace Rescue and Recovery Squadron being processed in January 1968 at Selfridge AFB, Mich., during the Pueblo Crisis mobilization ordered by President Lyndon B. Johnson.*

individuals. On November 1, 1961, three fighter-interceptor units were also called to active duty. Within one month after mobilization, 216 Air National Guard jet fighters deployed to Europe, where they assumed operational missions immediately after arriving. This mobilization lasted for one year.

By the time of the Berlin Crisis at least a manual on mobilization existed. It was Air Force Manual 45-2, which offered limited guidance. There was also a wartime re-



*Dependents and unit members hurry to greet C-141 returning members of the 71st Special Operations Squadron to Bakalar AFB, Fla., in June 1969, following their mobilization for the war in Southeast Asia.*



This was the Cuban missile crisis. On October 28, 1962, eight Air Force Reserve troop carrier wings and six aerial port squadrons with more than 14,000 personnel were called up by President Kennedy. Air National Guard units were not called up during this crisis.

This call-up came somewhat closer to being planned, as the units selected were clearly identified in Tactical Air Command (TAC) contingency plans, and the mobilization was "no notice" in the sense that the normal thirty-day alert was not provided. However, so many units had been actively involved in flying TAC missions that the transition from Reserve to active duty was barely noticed. The troop carrier units operated from their home stations and flew missions into the southeast corner of the US, bringing troops and supplies for the military buildup. During this one-month call-up, the Reserve units were not reorganized.

#### **Pueblo Crisis and Mobilization—1968**

On January 23, 1968, the North Koreans captured the USS *Pueblo*, a small intelligence ship in international waters, and interned its crew. The United States responded with two countermeasures. One was to send about 150 aircraft to Korea and Japan. The second action by President Johnson was to mobilize various Air Force and Navy units.

These reserve units were used to fill a void in the Strategic Reserve. The recall was without notice and was complicated by some special political ground rules that restricted the Air Force in the selection of units. These ground rules were:

1. Specific numbers of transports and fighters were required.
2. No unit that served in 1961 was to be recalled.
3. One multiengine rescue unit was required.
4. No more than one unit from any one state.
5. Only C-1 and C-2 (indicating state of readiness) units were to be considered.
6. No C-119 airlift units were to be recalled.

On January 26, 1968, eight Air National Guard F-100 TAC fighter units and three RF-101 reconnaissance units were called up. In all, 9,178 Air Guardsmen were called

### **Types of Mobilization**

<b>Selective</b>	Reaction to an emergency.
<b>Partial</b>	Call-up of units and individuals in support of operational or contingency plans.
<b>Full</b>	Expansion of present organizations.
<b>Total</b>	Creation of additional units to use the full resources of the nation.

up. They were given thirty-six hours to report for active duty. Only thirty-four persons failed to report; most had extenuating circumstances. The Air Force Reserve called up two military airlift wings, five groups, and a rescue squadron.

On May 13, two additional TAC fighter units and one aeromedical airlift unit were mobilized. The Air Force Reserve provided a tactical airlift group in addition to three aerial port squadrons, a medical service squadron, and an aeromedical evacuation squadron. More than 5,600 Reservists served during this crisis.

Four Air National Guard F-100 squadrons and more than 2,000 persons were deployed to the Vietnam combat zone. (An additional 4,000

Air Guardsmen were deployed to Korea.)

The Air Force Reserve Tactical Airlift Group was converted to an AC-119 gunship unit and deployed to Nha Trang in Vietnam. These were the first air reserve force units in combat since Korea.

#### **Postal Strike—1970**

In March of 1970, when President Nixon was faced with a nationwide postal strike, the Air Force activated two Air Force Reserve air postal and courier groups. However, the strike was settled so quickly that the call-up lasted only sixty-five hours.

#### **Middle East Crisis—1973**

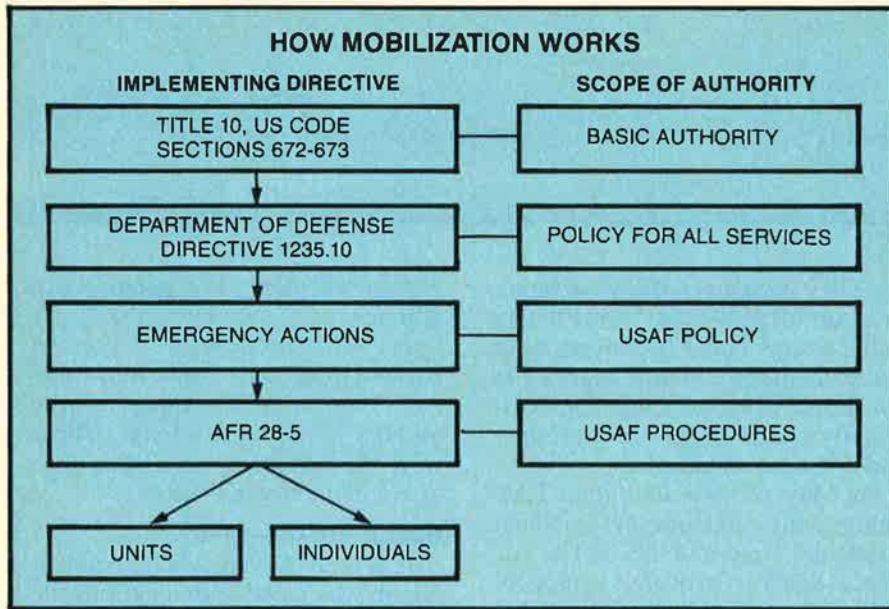
While not a formal mobilization, the "Yom Kippur War" does in-

### **Air Force Reserve and Air National Guard Mobilization Experience**

CRISIS	UNITS	PERSONNEL MOBILIZED	DURATION
<b>Korea 1950-53</b>			
	ANG: 22 wings	45,000	21 months
	AFR: 25 wings	27,000	21 months
	Individuals	121,000	21 months
<b>Berlin Crisis 1961-62</b>			
	ANG: 17 TAC fighter sqdns.	22,000	1 year
	4 TAC recon sqdns.		1 year
	6 C-97 transport sqdns.		1 year
	3 fighter-interceptor sqdns.		1 year
	AFR: 2 troop carrier wings	5,600	1 year
	1 air rescue sqdn.		60 days
<b>Cuban Missile Crisis 1962</b>			
	AFR: 8 troop carrier wings	14,000	30 days
	6 aerial port sqdns.		
<b>Pueblo Crisis 1968-69</b>			
	ANG: 10 F-100 sqdns.	10,521	1 year
	3 RF-101 sqdns.		1 year
	1 aeromed airlift sqdn.		1 year
	AFR: 2 C-124 wings	6,349	1 year
	5 C-124 groups		1 year
	1 C-119 tactical airlift group		1 year
	1 HC-97 air rescue group		1 year
	3 aerial port sqdns.		1 year
	1 medical service sqdn.		1 year
	1 aeromedical evac sqdn.		1 year

ANG = Air National Guard  
AFR = Air Force Reserve





dicating some of the capability of the Air Force Reserve. Six hundred and thirty Air Force Reserve Associate crew members volunteered and flew more than 255 transatlantic flights, of which 152 flights went into Israel. Twenty-four all-Reserve aircrews flew into Tel Aviv. In addition, 1,853 Air Force Reservists flew missions, freeing active-duty crews for other requirements.

Two generalizations about mobilizations can be inferred from those of the past thirty years: No two mobilizations were the same and no mobilization went according to plan—any plan.

### Exercises

Since the last mobilization in 1968, at least six major mobilization exercises have been held. They involved air reserve forces and numerous individual unit deployments. Four of the six exercises were Air Force exercises and two were national exercises.

#### 1977

The Air Force exercises were phased exercises, which grew in scope and size each year. The first exercise, called Redoubt I, took place in 1977 and was a series of one-day tests of notification procedures for all Air Force Reserve units. In addition, mobilization procedures were tested at three locations. The critique of this exercise identified many measures for streamlining the mobilization pro-

cess. Many of the mobilization processing items were deleted or covered during briefings after mobilization. The result was to reduce mandatory personnel processing items from twenty-two to three.

#### 1978

In 1978, the second phase tested the entire mobilization and deployment process. Realism and short notice were the characteristics of this test. Thirty-one locations were tested, with more than 23,000 individuals participating. Eighty-seven percent were notified within twelve hours and, through the use of new processing procedures, 19,000 Re-

servists were processed in the average time of forty-five seconds per individual.

#### 1979

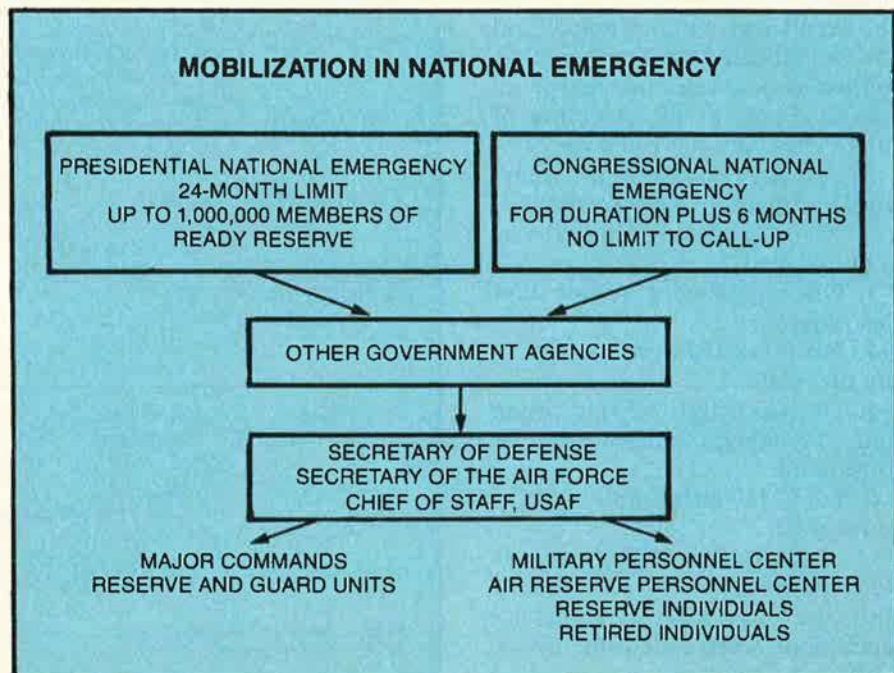
Phase III was planned to include everything that had gone before and to expand on it. The nationwide alerting system for Air Force Reservists was tested, and the units demonstrated that they were able to mobilize and deploy a group of more than 1,700 to various forward operating locations. Almost 39,000 Reservists were alerted in the first twenty-four hours of the exercise.

#### 1980

The exercise in 1980 started with a nationwide practice recall of Air Force Reservists. More than 400 units were alerted. These units were able to contact eighty-four percent of their members by telephone within twenty-four hours, and ninety-two percent within forty-eight hours. Through the Air Reserve Personnel Center (ARPC) a total of 1,051 persons were selected to test a new "mailgram" system of recall for Individual Reservists; eighty-three percent responded. Almost 5,000 Mobilization Augmentees were identified for a test of their telephone alerting system, and eighty-nine percent were notified.

#### 1981

The most recent exercise, Condor Redoubt, took place in August





of this year. It was designed to test and demonstrate the ability of the Air Force Reserve to mobilize and meet wartime tasking. The Air Force Inspector General conducted a functional management inspection at selected locations to examine the Air Force during and after the mobilization. The Accounting and Finance Center also practiced placing the Reserve units into the active-duty Joint Uniform Military Pay System (JUMPS). This exercise was a complete mobilization exercise, involving 55,000 Reservists, eighty-six units, and more than 100 aircraft.

The national exercises did not fare as well as the Reserve forces; Nifty Nugget in 1978 and Proud Spirit in 1980 were both labeled by the press as fiascos and disasters.

### Nifty Nugget

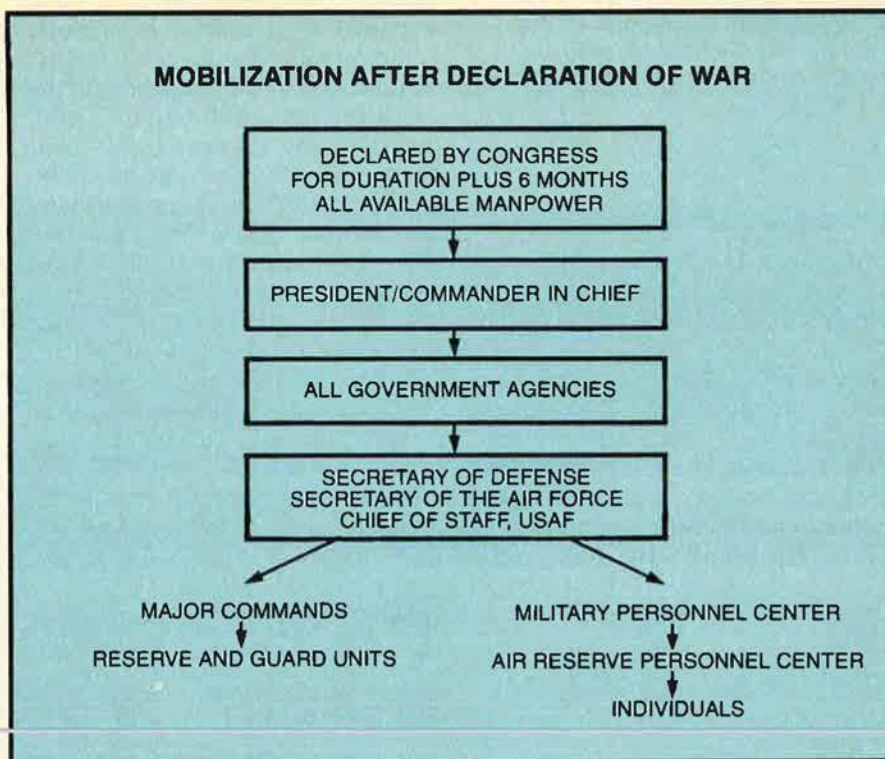
Exercise Nifty Nugget, sponsored by the JCS in October 1978, was designed to test plans, procedures, and supporting systems for the mobilization and deployment of forces after a short-warning, blitzkrieg-type attack by the Warsaw Pact on NATO units in Western Europe.

The results of this exercise were generally agreed to have been less than successful. An independent analysis team, headed by a former Assistant Secretary of Defense, prepared an unclassified evaluation report. While more optimistic and less sensational than the press reports, it found major faults in the United States mobilization-deployment system.

The report found that "existing mobilization plans were a hodgepodge of old and unconnected presidential emergency orders, policies, regulations, and procedures." It pointed out that mobilization demands great speed and coordination, engages millions of individuals in a decentralized system, and is a process much different from everyday decisions. Therefore, detailed, clear, and frequently tested mobilization plans are imperative.

Here are some of the major problems identified in the report:

- The Service Secretaries did not have a clear understanding of their mobilization roles and were not well prepared to serve as the link between their uniformed service staffs



and OSD in the mobilization process.

- The OSD staff was not sufficiently knowledgeable about its liaison role with civil agencies of the federal government. "As a result of these misunderstandings, mobilization matters could not be expeditiously coordinated and delays in obtaining resources were encountered."

- The exercise indicated that civil agencies were not prepared to participate.

- The exercise also found transportation shortfalls, a shortage of strategic airlift, and difficulties in obtaining ships.

- All services reported significant shortages of major air and ground weapon delivery systems and essential spare parts.

### Proud Spirit

Exercise Proud Spirit took place in November 1980. DoD and thirty-five federal agencies simulated another national mobilization in response to a major world crisis. Again, severe shortcomings were experienced. Some of these were:

- A major failure of the World Wide Military Command and Control System (WWMCCS), which left commanders without information on the readiness of their units for twelve

hours during the height of the exercise.

- A huge shortfall of ammunition and equipment. This shortfall was far beyond the capability of the twenty-day exercise to correct.

- A shortage of at least 350,000 trained personnel.

- Evidence that the US industrial base does not have the capability to resupply basic items of military hardware.

- A continuing failure of high-level civilian agency executives to be interested in their mobilization roles.

In summary, the results of Proud Spirit revealed that the high-level mobilization capability of the United States was woefully inadequate. It will be interesting to see how much progress will be made by the Reagan Administration to correct the inadequacies.

Although the air reserve forces have their problems, if they are judged by the actual mobilizations during the past thirty-one years, and the current high state of readiness, there is one constant. That is the ability of the air reserve forces to respond and to do the required job in peace or war. They can, in fact, mobilize in twenty-four hours and deploy in seventy-two hours. Can the political superstructure match their effectiveness? ■



The Maryland Air National Guard's two flying units are typical of the professional, dedicated, and capable units in the Air National Guard today.

**I**T USED to be that the aircraft maintenance equipment we got was worn out before we got it," says CMSgt. James E. Gumbach, a thirty-five-year veteran of the Maryland Air National Guard. But there have been a lot of changes since those days, and the Chief tells you that, today, "people know what we are doing and who we are, and we're getting top-of-the-line equipment."

The Maryland Air National

Guard's two flying units are good examples of the changes being made in the Air Guard today. Col. Robert D. Cardwell, Jr., Commander of the 135th Tactical Airlift Group (TAG), describes the changes in his unit: They moved from less adequate facilities to join the other Maryland Air National Guard flying unit, the 175th Tactical Fighter Group (TFG), at Glenn L. Martin State Airport near Baltimore. The field's facilities include a new maintenance hangar, a new avionics and munitions building, a new ramp, and a new joint operations building. In addition, construction crews have already started building federally funded facilities for Civil Engineering, Security Police, Vehicle Maintenance,

Fuel Cell Maintenance, and the Jet Engine shop.

But the most important changes for the two units sit on the ramp—a squadron of brand-new A-10s belonging to the 175th TFG and eight C-130s of the 135th TAG.

To accommodate the two-group base of 800 full- and part-time people, the Maryland Air National Guard is using a joint command system for day-to-day operation. The 175th TFG Commander is designated the Air Commander and runs the base. The 135th TAG Commander is the Mission Commander and, with regard to daily operation of the base, works for the Air Commander. Full-time base support specialists (personnel, administra-

## The Total Force **THE AIR GUARD:** En Garde!

BY CAPT. PHIL LACOMBE, USAF, CONTRIBUTING EDITOR  
Photos by William A. Ford, ART DIRECTOR







ABOVE: A Maryland ANG C-130 Hercules prepares to taxi. LEFT: The Maryland ANG also flies the A-10 Thunderbolt II. OPPOSITE PAGE: A C-130 taxiing to the end of the runway at Glenn L. Martin State Airport.

tion, medical, engineering, security, etc.) from both groups are combined into various base offices for daily operation. Each commander does, however, maintain separate operations, maintenance, and life-support functions.

Both units report to the Maryland Adjutant General in their state role of providing natural disaster and emergency services assistance. In the federal chain of command, the 135th TAG reports to the Military Airlift Command (MAC) and the 175th TFG reports to the Tactical Air Command (TAC)—both units receive support and guidance from the National Guard Bureau in Washington, D. C. Inspections, operational requirements, standardization and evaluation (Stan/Eval) requirements, and so on are levied

by their respective major commands.

The changes that have affected the Air National Guard are readily apparent in the 135th TAG. In the past ten years, the unit has changed aircraft three times—converting in 1971 from the HU-16 and U-10B to the O-2, in 1977 from the O-2 to the C-7, and in 1980 from the C-7 to the C-130. Though “we always change for the better” is the description used at the group, the changes have not been entirely without problems.

#### Time Commitment

The most significant difficulty encountered during the conversion is the additional time commitment required for weekend Guardsmen who are already heavily committed. Lt. Col. John S. Wilkinson, 135th

TAG Director of Operations, can't discuss the time commitment problem without expressing a deep pride in his people. Being in the Guard, says Colonel Wilkinson, “is a heavy, time-consuming responsibility. It requires real dedication to get through something like this conversion. The Air Force sends its crew members off for months at a time—we can't do that. Much of our conversion training must be accomplished by our part-timers, with time taken away from their regular jobs.”

The time commitment during the conversion was especially heavy on pilots and other aircrew members. Pilots were required to travel to the Air National Guard's C-130 training locations at Minneapolis for a one-week course and then a week in the simulator at Charlotte, N. C. Following that, they spent three to five weeks with another ANG unit already flying the C-130. On their return, they began heavy schedules of proficiency and upgrade training.

Flight engineers attended a similar program. They had three weeks of systems training followed by a week in the simulator. A night course was developed for weekend Guardsmen who couldn't get away from their jobs for so long. Twelve Guardsmen attended the five-week course for five hours a night, five





TOP: Replacing the propeller assembly on one of the Maryland Air National Guard's newly acquired C-130s is 135th TAG maintenance technician SSgt. Frank H. Wilson. ABOVE: An A-10, jacked up off the ground, gets a gear check during routine phased maintenance by TSgt. Robert Hartman of the 175th TFG's maintenance section.

days a week. "That required real commitment," says Colonel Wilkinson. "I thought it would be difficult, the day and night drag, and that we would even lose one or two. But we didn't lose any."

On the maintenance side of the house, the conversion to the C-130 was also difficult, but the Guardsmen were equal to the challenge. Maj. Richard H. Leavy, 135th TAG Deputy Commander for Maintenance, says, "It was a more difficult conversion to the C-130 [than to the C-7]. It is a far more sophisticated airplane, and we didn't have any experience with turboprop air-

planes. But the mechanics are very proud of their expertise and they are doing the job."

In fact, Major Leavy notes, the conversion was made more difficult by a hiring freeze during the initial stages of the conversion. "We were constrained," he says. "We couldn't hire full-time technicians with experience in the C-130—to take advantage of their expertise. In addition, not all of our people could get here for the Field Training Detachment's classes. But the Guard came through. They brought in a field training detachment from the Minnesota ANG to run general and

specialized courses for six weeks and the Bureau provided eighteen Title 32 active-duty people. This was a definite necessity, since the bulk of our people are weekenders."

The conversions required a great deal of extra effort on the part of the Guardsmen of the 135th TAG and the 175th TFG, but that's nothing new. Along with the new hardware have come new commitments—a larger share of the daily Air Force mission. The C-130s now frequently support deploying Army and Air National Guard units and opportune MAC missions as well. They travel to other CONUS locations for exercises, deployments, and ORIs; bolster the United States Air Forces in Europe's tactical airlift force during European deployments; and even fly some regularly scheduled MAC channel missions. They perform these missions enthusiastically and accomplish required proficiency training during them.

The 175th TFG experiences the same situation. It is regularly tasked for missions in support of Joint Chiefs of Staff and Air Force exercises. Maj. Bruce Tuxill, who commands the 104th Tactical Fighter Squadron of the 175th TFG and acts as the Group's operations officer during the week, estimates that a deployment to Europe, the Snowbird exercise, and others will result in the unit's being deployed for six weeks this year. "The commitment we get from these weekend people is amazing," he says. "Only six of the pilots in this outfit are full-time Guardsmen, and the rest are part-timers."

Of the pilots in the 104th TFS, Major Tuxill says almost fifty percent are airline pilots. It may be easier for them to get away than for the others, Major Tuxill points out. But the others—an educator, two engineers, three salesmen, two lawyers, and a stock broker—take time away from their normal 9:00-to-5:00 jobs. Colonel Wilkinson finds the same situation in his unit, where one-third of the pilots are from the airlines.

### Not for the Money

Where do they find these people who would rather spend a cold Saturday morning on the flight line than at home? "It sure isn't the money



that brings them here," grins Colonel Wilkinson. "Our people fly with us because they want to fly the C-130. They want the challenge of the low-level tactical airlift mission, and they like the type of flying we do. It's not the same as flying at 35,000 feet in an airliner. We even have one pilot in our unit who is a United Airlines captain. He arrives in his own airplane—costs him more to get here and back than he makes in training pay."

The story is much the same wherever you look in these two units. It isn't the extra money that brings them to the Guard. SSgt. Phillip Brinkley, a part-time avionics maintenance technician in the 135th TAG, explains, "I want to be with people who like to work. To be around airplanes and to be a part of this." Sergeant Brinkley's supervisor proudly points out that Sergeant Brinkley and others have already fulfilled their training commitment for the entire year. But they keep coming in.

"For the pilots," says Major Tuxill, "there is a camaraderie. We fly together and we become friends, get to know each other." That feeling exists throughout these two Maryland Air National Guard units—in every section. Guardsmen speak of their organization as though it were a fraternity and more than one even called it that.

Colonel Wilkinson believes the camaraderie doesn't end at the main gate: "When I need to buy something, I give my business to a Guardsman. Not for any cut-rates or anything like that, but because I know him and how he works in the Guard." Apparently there could be no higher recommendation.

### **Opportunities for All**

The Guard has opportunities for everyone. Capt. Dave Arnett, 135th TAG Chief of the Navigator Section, describes the Guard as "a friendly group. There is no competition for promotion here. People know they can spend years at a job they enjoy." Other Guardsmen agree and emphasize that they become much better at their jobs than they could if they faced moves every few years and pressure to progress into supervisory positions.

For pilots the lure of the Guard is the same, according to Major

Tuxill. "You can stay in the cockpit for twenty years in the Guard," he says. "There people are dedicated, but they aren't here to make general. They know they can fly and probably make lieutenant colonel, and that's what they want."

For some, like Captain Arnett, the goals are different. "I want to be a group commander," he says. The tenure and promotion systems within the Guard are flexible enough to allow those who want greater responsibility to get it, without the competitive atmosphere that he believes exists in the Air Force. A former school teacher and instructor at the National Guard's officer training school, Captain Arnett says his chances for command in the Guard are better than in the Air Force. He singles out the Group Commander of the Guard unit at Bangor, Me., and the Deputy Commander for Operations at the West Virginia Air National Guard's C-130 group as examples of navigators in ANG command positions.

Today, becoming an Air National Guardsman with either the 135th TAG or 175th TFG isn't easy. The limited number of Basic Military Training, Undergraduate Pilot Training, and Undergraduate Navigator Training slots allocated to the Guard are hard to come by. Major Leavy says he and his people are putting greater emphasis on finding prior-service personnel who don't have to wait for a BMT slot before they can enlist. Likewise, Major Tuxill is looking for prior-service pilots with fighter experience and a lot of dedication. The story is the same in the operations sections of the 135th TAG, where Captain Arnett is trying to build a navigator program for the C-130 unit, but is having trouble locating prior-service navigators who are willing to join the Guard.

### **High-Quality People**

But even when the applicant is prior-service, or there is a training slot available, it isn't easy to get into these units. Colonel Wilkinson points to a stack of papers on his desk, "Those are applications," he says. "We screen them and interview the applicants—the Flight Surgeon, the CBPO Chief, and a supervisor all interview them. We are very selective." The selectivity

pays off in ensuring the quality of people who join the two units. "We control the quality," Colonel Wilkinson continues, "We get to know them and hire selectively because we demand so much—weekends and a night or day per week."

But even the high quality of the people in the units and their top-of-the-line equipment are not enough to build strong, effective units like these. It also takes the cooperation of the local civilian employers. The companies that employ the 135th TAG's Guardsmen are "unbelievably considerate," according to Colonel Wilkinson. "The companies that are go-getters are good companies to work for, and their policy toward the Guard is very generous," he says.

"In this day and age, with the requirements that MAC put on us for ORIs, Stan/Eval visits, and so on, it requires a lot of time," Colonel Wilkinson emphasizes. "The companies recognize the quality of people they have. The same people are in the Guard, and these companies want to keep them. I believe they would have a tough time replacing such good people. As good as they are in this unit, they have got to be outstanding employees as well."

The Guardsmen at Maryland's two flying units all stress the high quality of the people in the units, their individual and collective dedication to the mission, high morale, and excellent equipment as the reasons they stay in the Guard. But these are more than reasons to belong, these are the requisites for success in the military mission. And they pay off, with the 135th TAG moving steadily toward a mission ready status and the 175th TFG already a proven asset, having deployed all eighteen aircraft successfully to Savannah, Ga., for a Ninth Air Force ORI. In fact, they pay off so well that the 175th earned an Excellent rating from the Ninth Air Force Inspector General.

These units are proving equal to the change in the Guard—a change toward an increasingly large mission with more sophisticated weapon systems. The people are willing to give the time to do the job right. They are indeed a part of the Total Force—reliable, dedicated, and proven. ■



Civilian members of the air reserve forces can function best in their reserve roles if their civilian employers cooperate.

Helping to maintain that voluntary employer cooperation is the task of the National Committee for Employer Support of the Guard and Reserve.

# Employer Support Essential

BY CAPT. ART HOUSE, USAR

**B**ILL George is a successful recruiter with Pacific Telephone in Van Nuys, Calif. He's an old hand at the personnel procurement business, having been a military recruiter for the California Air National Guard's 261st Communications Squadron before coming to work for the phone company.

Bill George is good at his work. He's kept a steady stream of qualified job applicants entering the Pacific Telephone family. And he knows just where to find the talented, trained telecommunications workers that the Bell System needs—he recruits many new hires from the ranks of the 261st. An Air Guard master sergeant, and currently an operations NCO with the squadron, George is pleased that his Air Force experience helps out his employer. Pacific Telephone is happy about it, too.

\* \* \*

Air Force Reserve SSgt. John McDermott is another NCO whose Air Force training has put him in good stead with his civilian bosses. A Charleston, S. C., firm, MIRACOM Electronics, boasts that McDermott is one of its top repair-

men. McDermott's specialty, repair of inertial navigation equipment, is the skill that the Air Force trained him for, and it's the job he also performs in uniform as a member of the Reserve's 315th Avionics Maintenance Squadron, in Charleston.

Before taking the electronics training, McDermott was otherwise unskilled, working in a grocery store. MIRACOM offered him a job—if he could secure the necessary skills—and when he returned from Air Force training, the firm followed through on its offer. The firm is happy that it did, and happy that McDermott is an Air Reservist.

\* \* \*

Bill Wolfinger is a television news cameraman with WHHG-TV in Hagerstown, Md. Some of Bill's recent work, dramatic air-to-air footage of the A-10 close support aircraft, won an award for WHHG. The plane depicted in Wolfinger's film is a hometown favorite with the station's viewers: The A-10 is manufactured by one of Hagerstown's leading employers, Fairchild Industries.

Wolfinger was able to get the footage thanks to his membership in the West Virginia Air National Guard. A staff sergeant with the Air Guard's 167th Tactical Airlift Group, Aeromedical Evacuation Flight, Wolfinger was able to parlay his Guard responsibilities into a benefit for his employers. Bill enjoys his military service, and WHHG is equally pleased.

\* \* \*

Many firms like MIRACOM, WHHG, and Pacific Telephone fully support the National Guard and Reserve membership of their employees. More than 370,000 of the nation's employers have pledged that support—signing on the dotted line to that effect—in recent years.

These supportive firms and agencies have announced publicly their compliance with the federal law governing relationships between Guard and Reserve members and their employers. They have done so by pledging that their employees' career opportunities will not be limited because of military service, and they promise to grant employees leaves of absence for military training without sacrifice of vacation or

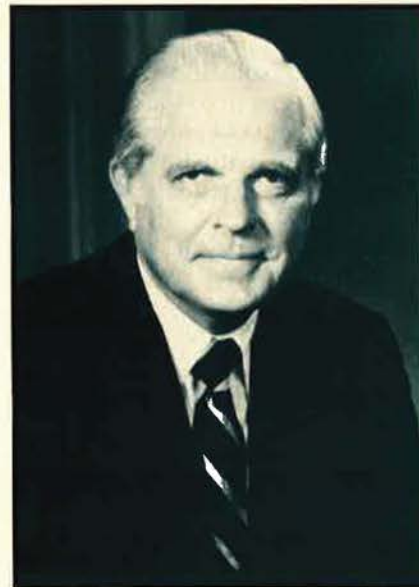
personal leave time. These employers promise more, agreeing to promote their agreement with the Department of Defense throughout their organizations, using employee publications and every other means of corporate media at hand.

Many firms do much more than the law requires, more than the Department of Defense's statement of support suggests they do. Many firms pay their citizen-military employees full salaries when they are away on training; many more make up any difference between their employees' civilian and military pay.

## The Problem

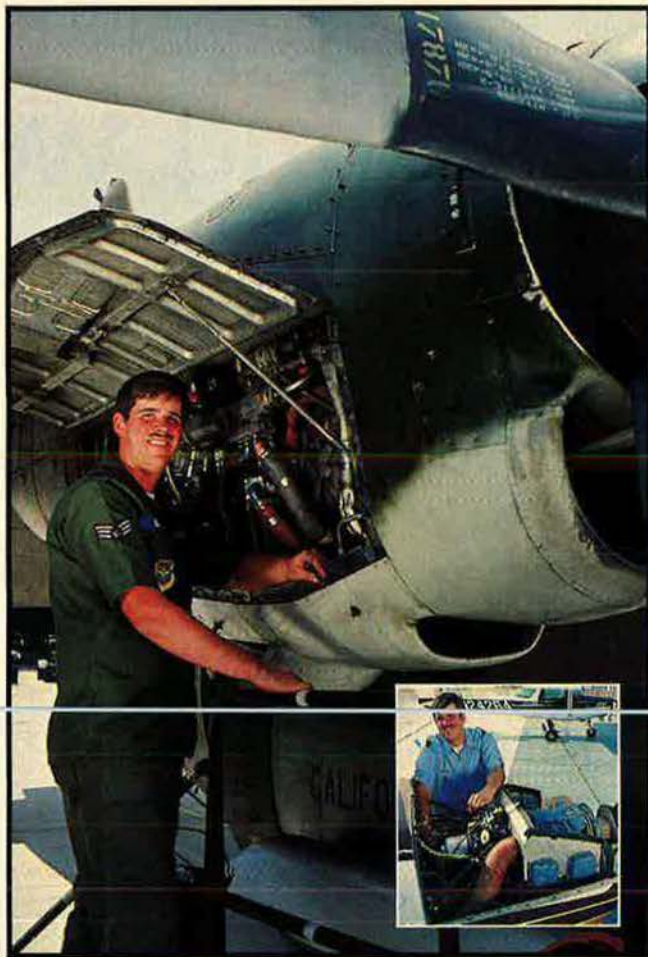
Unfortunately, many other employers are no help at all. Quite the contrary, in fact. Some either don't understand the law or they actively seek ways to avoid it. Their ignorance or hostility bears fruit. A recent Rand Corp. study for the Pentagon spelled out what Guard and Reserve members have known all along—hassles with bosses cause reenlistment offers to be turned down.

The Rand study reported that almost thirty-one percent of a sample population of former Army Guard and Reserve members cited employment conflicts as the reason they quit the ranks. Only one other reason—family and leisure-time demands—was cited by more ex-



Former Air Force Secretary John C. Stetson heads the National Committee for Employer Support of the Guard and Reserve.





Air Guard and Reserve members frequently enter civilian career fields closely related to their Air Force training. Regardless of the relationship between military duties and civilian work, their leadership and managerial abilities are valuable in both fields.

members as the cause of their departures, and that was by less than a percentage point. But Rand cautioned the Department of Defense that these urgings from the family, and too little time off, could be evidence of hidden job pressures as well.

Other studies have revealed different aspects of the problem:

- *Employer conflicts take many forms.* A common one is the problem of the first-line supervisor. While the chairman of the board may sign a statement of support, lower-level bosses may never get the word. Or, lower-level bosses may be faced with production pressures that push Guard/Reserve concerns into very low priority.

- *Employer conflicts may be blatant.* "Go off to play war this weekend and you'll be out of a job" is an admonition heard by more than a few Guard and Reserve members during their service.

- *Employer conflicts may be sub-*

*tle.* Some Guard and Reserve members find themselves overlooked at promotion time for no apparent reason; others find that their bosses "suggest" they use vacation time to attend military training.

- *Employer conflicts are not limited to the private sector.* Federal agencies and state governments are often offenders. Troubles even develop between state government agencies and members of the state's own National Guard.

- *Employer support conflicts often are caused by the Guard/Reserve members themselves.* Members are required to give their bosses as much advance notice of military-duty requirements as possible. Many fail to do so. Others exploit the protections of the law, signing on for repeated tours of active duty not essential to their training or to their unit's readiness.

#### **The Employer Support Team**

Employer support is vital to the

personnel strength and readiness of the Guard and Reserve forces—so much so that a volunteer team of some 1,500 prominent business leaders exists to seek, promote, and reinforce the backing of employers on behalf of the National Guard and Reserve.

Most of the members of this team—the National Committee for Employer Support of the Guard and Reserve—are employers and supervisors themselves. Since they know the burdens that military training schedules can cause for a place of business, they are uniquely qualified to serve as spokespersons and problem solvers on the employer support team.

The members spread the word to the employer community through personal contact, a speakers' program, and a variety of professionally produced films, slide shows, and publications. The committee also conducts an ombudsman program to help arbitrate conflicts between

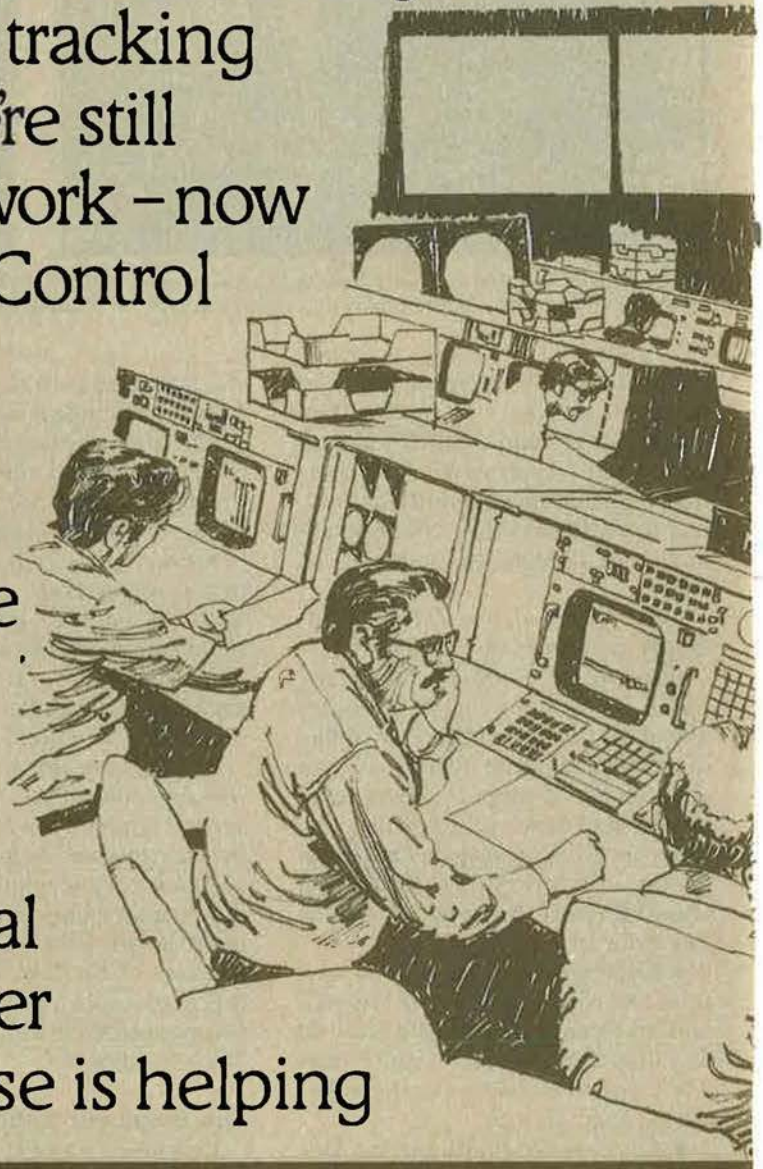


# In the Beginning, we

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In 1963, we began building the Mission Control Center at Johnson Space Center, and we've provided total system support ever since. This expertise is helping





# were there.

us today to design the Operational Control Centers for the NASA and DoD Space Shuttle and the Spacelab payloads.

In 1965, the NORAD Combat Operations Center became operational within Cheyenne Mountain and we were

there as prime contractor for major segments of the communication, display, and space computational systems. We've been in the Mountain ever since providing total system support.

And what of future challenges? Ford Aerospace is prepared to meet those challenges, as it was in the beginning.



**Ford Aerospace &  
Communications Corporation**



bosses and employees over military-duty scheduling. When differences occur, local volunteers are often available to talk over problems with Guard or Reserve members and their supervisors. If matters cannot be resolved locally, the committee's national ombudsman—a full-time active-duty Reserve officer on the committee staff—is available to help work things out.

When problems are particularly difficult, or when violations of the law are indicated, the United States Department of Labor can become involved. Like the National Committee, the Labor Department first tries to arbitrate employer support problems informally. But when informal measures fail, the department can initiate legal action on behalf of Guard and Reserve members.

The National Committee conducts these programs nationwide, directing them at both private and public employers. It is organized in all fifty states, the District of Columbia, Puerto Rico, and the Virgin Islands. The committee is an organization of the Office of the Secretary of Defense and is supported by a small military and civilian staff. Most of the committee's military staff are Guard and Reserve members themselves.

The National Committee's chairman is John C. Stetson, a Chicago business executive and a former Secretary of the Air Force (1977-79). The committee was formed in 1972, when the imminent halting of draft calls placed tough new dependence on the readiness of the National Guard and Reserve.

### The Message

The National Committee has an important message to promote:

- *There is a new urgency for a strong Guard and Reserve.* The Guard and Reserve now make up a significant part of the national defense establishment. In many critical defense functions, the Guard and Reserve provide well over half of the total national capability.

- *The Guard and Reserve provide an economical force.* Guard and Reserve units and individuals are supported at a fraction of the cost of their full-time, active-duty counterparts.

*Capt. Art House is an Army reserve captain serving as Chief of Public Information for the National Committee for Employer Support of the Guard and Reserve. He was commissioned through ROTC at Niagara University, N. Y., in 1969. His last assignment was as Editor of Army Reserve magazine.*

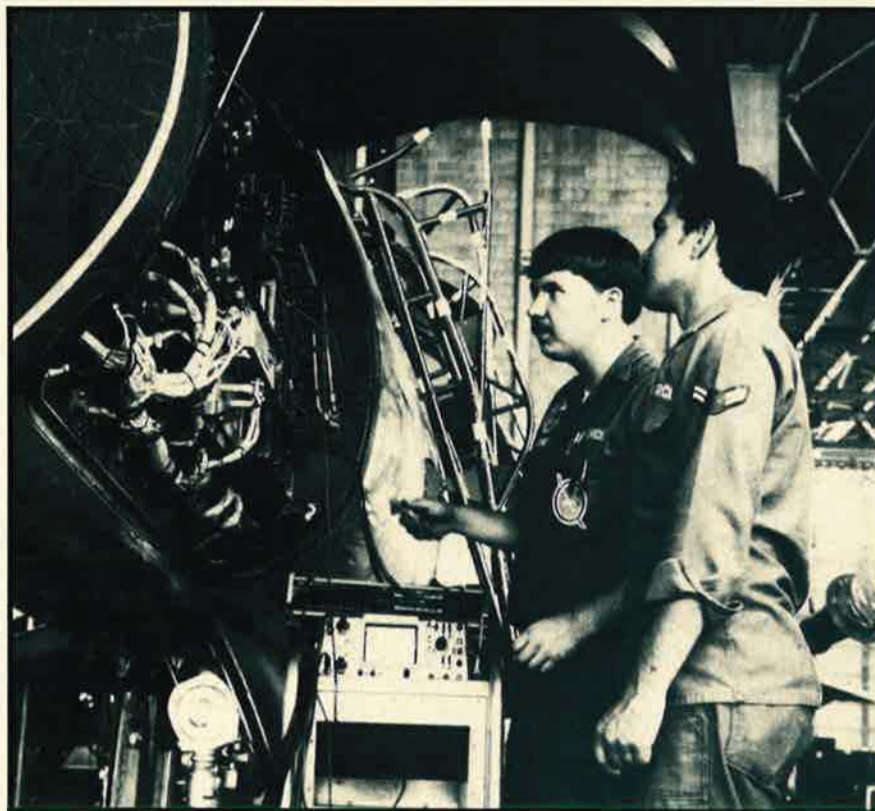
- *Guard and Reserve membership is protected by law.* Federal law prohibits employers from denying their Guard/Reserve member employees time off for military training. It protects the members' right to return to their jobs when their duties are complete. It protects them from being fired because of their military duties. It protects them against denial of vacation, seniority, advancement, pension or insurance participation, or any other benefits of employment due to their military responsibilities.

- *Guard and Reserve membership benefits the employer.* Like the bosses of the Air National Guard and Air Force Reserve members highlighted at the beginning of this article, most employers find that

Guard and Reserve members make better employees. Often, the members' military training and duty skills are directly related to the skills required in their civilian jobs. Even more often, military duties help employees gain management experience, develop leadership ability, and realize a growing appreciation for the kind of teamwork spirit that is valuable in any office, at any job site.

### Help Wanted

Promoting the cause of a strong Guard and Reserve—through employer support—is a big job. Volunteers are needed for the National Committee's work in every state. Want to help? Need more information? Write or call the National Committee for Employer Support of the Guard and Reserve, 1117 N. 19th St., 9th Floor, Arlington, Va. 22209. The committee's toll-free phone number is (800) 336-4590. In Virginia and the metropolitan Washington area, the number is (202) 697-6902. Military callers, worldwide, can reach the committee on AUTOVON 227-6902. ■



*Air Guard and Air Force Reserve members can often apply their technical military skills to the needs of their civilian employers. Many bosses appreciate that, and also appreciate the leadership and managerial abilities Guard and Reserve members develop through their military duties.*



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# The Total Force

## FROM MARCHBANKS TO BODYCOMBE

BY GERALD T. CANTWELL

**Today, the Air Force Reserve is a daily contributor to total Air Force mission accomplishment. The management activities that brought about the current state are highlighted in this account of the Chiefs of Air Force Reserve since 1968, when vitalization began under law.**

**A**S A component, the Air Force Reserve traces its origins to June 1916, but its current management structure did not appear until 1968 when Public Law 90-168, "The Reserve Bill of Rights and Vitalization Act," guaranteed the existence of all reserve components and made them more responsible for the conduct of their own programs. Among other provisions, the law declared that there would be an Office of Air Force Reserve headed by a Chief in the executive part of the Air Force.

The Air Force established the office on January 1, 1968. Maj. Gen. Tom E. Marchbanks, Jr., erstwhile commander of the 433d Troop Carrier Wing, became the first Chief on February 16. After appropriate study, on August 1, 1968, the Air Force established Headquarters Air Force Reserve (AFRES) as a field extension of the new office replacing Continental Air Command (CONAC) at Robins AFB, Ga.

General Marchbanks influenced the image and initial direction of his component in several ways. He promised that the Air Force Reserve would exist in name and in fact and would be managed by Reservists as a reserve command. He shared the perception of many career Reservists that Continental Air Command had allowed its secondary nonreserve missions to dilute its attention to the Air Force Reserve. He remembered many times as a field commander when his unit's potential had been inhibited by the major command's penchant for finding reasons not to do things, instead of seizing opportunities to do them.

### Delivering Full Potential

His first presentation to his unit commanders at Robins AFB in August 1968 reflected that thinking. "The words 'Air Force Reserve' should be painted on every wall down here," he proclaimed. Moreover, he demanded that the force itself realize its full potential. "The opportunity is there, if you want to find it. We moved into an atmosphere of complete apathy [in the Pentagon], complete inactivity, and within six months we've generated more interest and work than we can say a blessing over."

He told the commanders that he and Maj. Gen. Rollin B. Moore, Jr., the first AFRES Commander, were ded-

icated to delivering the Air Force Reserve's full potential to the Air Force. They were perfectly willing to abandon those commanders who didn't share their dedication.

General Marchbanks led the Air Force Reserve into some progressive thinking in personnel areas, including undergraduate pilot training and equal opportunity. He also thought reserve management could be improved by a career progression system that would permit Reservists to move up the hierarchy, progressing in some cases to his office. He got this started by getting a certain number of additional Section 265 positions allotted to the reserve management structure. He also succeeded in getting the air reserve technician program extended to the regions, the reserve's intermediate management organizations.

In the final analysis, though, General Marchbanks's greatest contribution may have been in holding a field force together. Subsequent Air Force Reserve Chiefs would fight to modernize; for Marchbanks, it was a matter of survival.

He inherited great turbulence in a C-119 aircraft program that then comprised fourteen groups. In each of the three years preceding his accession as Chief, the Department of Defense had announced inactivation of varying numbers of the groups, only to back off at the last moment. The reductions stuck in 1968 and, by July 1969, the C-119 force was down to ten groups. The outlook was not bright.

But General Marchbanks fought for new associate and tactical air support programs that promised to accommodate many displaced Reservists. The associate program in particular filled a real need. It would allow the Air Force Reserve to hone its skills in first-line



First Chief of the Air Force Reserve was Maj. Gen. Tom E. Marchbanks, Jr.



Maj. Gen. Rollin B. Moore, Jr., became the commander of AFRES at Robins AFB, Ga.



aircraft on active-duty bases, complete with the necessary equipment and facilities.

Early in Fiscal Year 1970, the Nixon Administration economies struck, and the Air Force Reserve had no immunity. The Air Force announced more reserve unit inactivations, reserve base closings, discontinuation of a reserve region headquarters, and elimination of 100 people from Hq. AFRES. Only some of these things actually happened, but the threat and the turbulence were there to challenge the nerve of the Air Force Reserve's first Chief.

Illness forced General Marchbanks to retire prematurely in February 1971, but in those first three years he held things together and shaped much of what the Air Force Reserve now holds as fact.

### Safety First

Pinning on his second star on the eve of its activation, Maj. Gen. Rollin B. Moore, Jr., already on active duty as commander of the mobilized 349th Military Airlift Wing, became the first commander of the new reserve headquarters at Robins AFB. While he would exert great influence on operations and manning, his views on managing the force played a catalytic role in shaping its future management structure.

Safe and efficient operations came first. He declared himself his own flying safety officer. During his three-and-a-half-year tour as commander, six new aircraft entered the reserve inventory as nineteen squadrons converted to new missions. Yet there were only three major accidents, and 1970 was accident-free. General Moore emphasized flying safety by forming the AFRES Aerospace Safety Council (under his chairmanship), placing the safety function under the Command Section, and issuing special letters periodically on safety matters. In the meantime, the units flew their hours and made their new readiness ratings on converting.

General Moore also manned his force by virtue of a comprehensive, never-ending recruiting/retention drive. In July 1969, Air Force Reserve unit manning was at eighty-four percent. Branding this unacceptable, he demanded that the recruiters spend at least half their time in "face-to-face" contact and conducting separation counseling.

He made manning the priority concern of the command in 1970, and established a recruiting squadron at each region headquarters. His weekly commander's letters and *ad hoc* communications constantly exhorted the commanders on manning. By year's end, the command had surpassed its authorized drill pay.

In May 1971, when the Vice Chief of Staff directed all commands to reduce support functions at intermediate headquarters, General Moore resisted. He knew there would be manpower reductions, but he objected that they all be made in the regions, and he protested the elimination of any function. Instead, he asserted that the entire structure should be reviewed for efficiency.

He proposed that AFRES be reduced to an operations center, that its personnel functions be assumed by an expanded Air Reserve Personnel Center, and that the regions be replaced by functionally organized numbered air forces. His ideas had crystallized in the preceding year during a visit from the USAF Program

Review Committee and a general USAF inspection.

Both groups had criticized imprecise delineation of responsibilities between the Office of Air Force Reserve and Hq. AFRES. The Program Review Committee had concluded that AFRES was neither fish nor fowl and ought to be upgraded as a major command or reduced to operating center level, while the Inspector General had detected "... confusion and controversy throughout the reserve organization over the exact roles of the Washington and Robins agencies."

Delivered against this background, General Moore's reply to the Vice Chief was bound to precipitate a new, intensive review of the management structure of the Air Force Reserve. Believing that this would benefit the entire Air Force Reserve, General Moore welcomed it.

### Only One Air Force Reserve

Maj. Gen. Homer I. Lewis, who had served in both unit and individual programs, became the second Chief of Air Force Reserve in April 1971.

Influenced by the stimuli described above, along with the admonition from the Chief of Staff himself to refine Air Force Reserve command and communication channels, General Lewis evaluated the management structure. In February 1972, he recommended reorganizing his Pentagon office to release some functions to the Robins headquarters, which would then become a major command, dual-hatting himself as its commander; accepting the realignment directed by the Vice Chief of Staff; and drawing the Air Reserve Personnel Center more actively into management.

With the exception of the status of AFRES, the Vice Chief of Staff approved the proposals, and on March 16, 1972, General Moore having returned to technician status as Commander of Western Region two months earlier, General Lewis assumed command of AFRES.

Incidental to his review, Lewis validated the fundamental tenets of Air Force Reserve management that had attended its birth in 1968. In brief, he said, the Air Force Reserve should be administered by a single manager in the executive part of the Air Force and its staff integrated with the Air Staff; the Chief of the Air Force Reserve must be, and the Vice Commander of the command should be, USAFR generals; and the Air Force Reserve should be managed by Reservists and should be patterned after the active force.



Second AFRES commander was Maj. Gen. Homer I. Lewis, who took over in 1971.



Brig. Gen. Alfred Verhulst was vice commander under Generals Moore and Lewis.



The consolidation of the roles of Chief and Commander symbolized the unity and teamwork that General Lewis described as his immediate objective. "There is only one Air Force Reserve," he said, "and realistically there should be but one commander. . . . The Air Force Reserve is an entity and should not be operated in a segmented fashion."

Looking back in 1975 as he prepared to step out, he felt that his greatest accomplishment had been the fostering of a closer relationship among the various elements of his own component. Throughout his Air Force Reserve career, he had seen a fragmentation of the effort, a division he knew must be healed if the Air Force Reserve was to realize the full potential offered by Public Law 90-168 and Total Force. So throughout his tour as Chief, he had fostered mutual knowledge and understanding among the members of the various Air Force Reserve program elements. He thought he had made some progress. General Lewis had taken General Marchbanks's idea a step further and had started people flowing through the structure. The dual-hatting, the regular meetings between the Washington and Robins staffs, and deeper integration of the Personnel Center had unified the structure to a greater degree.

In October 1969, Brig. Gen. Alfred Verhulst was recalled to active duty as the AFRES vice commander. In this post under Generals Moore and Lewis, he bore down on the operations aspects, concerning himself with the combat readiness of the units. Like Moore, he was obsessed with safety of operations, and he was attuned to those subtle distinctions that separated the successful from the mediocre commander, constantly urging commanders to concentrate on such essentials as mobility. "Without mobility," he said, "you do not command anything; you are just a holding pen for materiel and personnel."

### Recruiting and Retention

But General Moore's departure and the dual-hatting left the AFRES command section under the remote direction of General Lewis with but one brigadier general, General Verhulst, to represent the headquarters to the field and major commands. To redress the imbalance, in May 1973 General Lewis brought Maj. Gen. Earl O. Anderson, Commander of Eastern Region, into the headquarters as vice commander, and General Verhulst went to the region.

General Anderson's primary concern as AFRES vice commander was manning. He told his staff upon his arrival that their number one priority was recruiting and retention and that "we probably have to review for discard some sacrosanct policies in terms of attracting and motivating people."

After peaking under General Moore's efforts in 1970, influenced by program changes and the end of the draft, Air Force Reserve manning started back down in 1972. By the spring of 1974, the picture was becoming dismal. Reserve recruiting had been centralized in the headquarters. Acerbated by a concurrent test of joint recruiting with the active force, this had isolated the unit commanders from their traditional function of recruiting.

Since manning was not improving, Anderson set out to restore them to this role while simultaneously seek-

ing other relief. He urged that retention be reemphasized and that uncontrolled losses caused by such things as moves and program actions be centrally managed. General Lewis accepted General Anderson's views. Maj. Gen. William Lyon would bring them to fruition.

### Modernization and Expansion

When he became Chief of the Air Force Reserve and Commander of AFRES in April 1975 after a career of service in both the unit and individual programs, Maj. Gen. William Lyon sought to modernize the component's attitudes, unify its disparate parts, and expand its mission.

He soon had the opportunity to deal simultaneously with all these objectives. Faced with a move by Defense Department budgeteers to eliminate the three regions, he convinced the Chief of Staff that he should have the opportunity to determine the reserve management structure he needed. With the Chief's support, he persevered, and AFRES emerged in October 1976 with three numbered air forces—the Fourth, Tenth, and Fourteenth. The new organizations were oriented toward the USAF gaining commands and a more active role in preparing Air Force Reserve units for mobilization.

Concurrently, as the positions of all three of the region commanders and the Vice Commander of AFRES became vacant, General Lyon grasped the opportunity to make greater use of the individual reserve resource and give those general officers responsibilities and opportunities traditionally denied them. Thus, he made two interim appointments to region command from the nontechnicians and one permanent one. When General Anderson retired in October 1976, he turned to Maj. Gen. Richard Bodycombe, another nontechnician.

The year 1976 was pivotal in other respects as well, as General Lyon's Washington staff obtained new roles and missions for the Air Force Reserve. The Aerospace Defense Command entered into an arrangement so that its crews and support personnel augmented the Air Force Reserve in discharging the EC-121 early warning and control mission in Iceland. Also, Tactical Air Command and the Air Force Reserve conducted a two-year test measuring the degree of augmentation a fighter wing could accrue from mobilization augmentees in the aircrews and maintenance force.

Concurrently, the component acquired air refueling,



In May 1973, Maj. Gen. Earl O. Anderson took over as AFRES vice commander.



Maj. Gen. William Lyon became Chief of the Air Force Reserve in April 1975.



*Gerald T. Cantwell is Director of Historical Services of the Air Force Reserve (AFRES) at Robins AFB, Ga., a post he has held since July 1970. A Canadian native and naturalized US citizen, he served as a US Army paratrooper during World War II, participating in the Normandy, Holland, Ardennes, North Germany, and Ruhr pocket campaigns. He earned B.Ph. and M.A. degrees from the University of Detroit in 1950 and 1951. He became an Air Force historian at Hq., Tenth Air Force, Selfridge AFB, Mich., in 1955. Since then, his historian career has taken him to Hq., Military Air Transport Service (now MAC); 1st Strategic Aerospace Div., Vandenberg AFB, Calif.; and the Office of Air Force History. He and his wife Eileen have three sons and four daughters.*

gunship, and weather-reconnaissance missions and expanded its tactical fighter role. Finally, it accepted on a shared basis with the Air National Guard the C-130 Southern Command rotational airlift mission. (Six C-130s available for use throughout USSOUTHCOM.)

In leading the Air Force Reserve into these ventures, General Lyon shattered cherished Air Force Reserve perceptions about how it should do business, as well as some traditional reservations the active force had about the component.

General Lyon continued the efforts of his predecessors to broaden career potential for all Reservists, encouraging career Reservists to accept Section 265 and mobilization augmentee opportunities as well as traditional unit member affiliation. He established an air reserve technician officer career management program that developed requirements and training for each position, rated high-potential officers, and established priority lists for developmental managerial training positions.

Nevertheless, he thought that the highlight of his tenure had been the Air Force Reserve's success in manning itself in the all-volunteer environment. Explaining some of the reasons, he enumerated such things as making the recruiting function responsible to the vice commander, securing stabilized tours and proficiency pay for the recruiters, and continuing General Anderson's emphasis on retention and centralized management of uncontrollable losses.

### **USAF's Best Kept Secret**

When General Bodycombe became Vice Commander of AFRES in November 1976, he sought to generate a better dialogue between the headquarters and the units and help the numbered air forces get off to a good start. Thus, he took headquarters teams on monthly visits to units during training weekends to acquaint the AFRES staff with the ways and rationale of reserve units. He also used the unit task force approach in 1977 to solve critical problems in C-130 and associate units and in developing a mode of operation for the numbered air forces.

Along the way, he made a momentous discovery that influenced his future thinking and actions. To the distress of his information officer, he started proclaiming sometime in mid-1977 that "the Air Force Reserve is the Air Force's best kept secret."

He therefore urged all Reservists to tell the Air Force Reserve story to the public, to the Congress, to the

active force, and to each other. To give the story substance, he developed Operation Redoubt. Redoubt, whose fifth increment was conducted in August 1981, is a series of Air Force Reserve operations designed to exercise the mobilization and mobility, command and control, and emergency/crisis reaction process of the Air Force Reserve, and demonstrate to the active force and the public the component's capability to do these things. Attracting the admiration of the Chief of Staff and certain Defense Department officials, Redoubt has now drawn the JCS and the gaining commands into exercise play.

When General Lyon retired in April 1979, General Bodycombe succeeded him and chose Maj. Gen. Edward Dillon for the Robins post.

General Bodycombe took revised objectives to Washington. Manning remained primary. After that the priorities were for aggressive training, a career management program for Reservists similar to that established for the technicians, locating Air Force Reserve units in new areas like Colorado Springs and Dayton where there were both Air Force bases and large populations, modernizing unit equipment, managing all resources prudently, and combining all these into one great retention program.

By December 1980 and the thirteenth anniversary of the signing of Public Law 90-168, the Air Force Reserve had indeed been "vitalized" and enjoyed the greatest stature and repute of its history. Manned and operationally ready, it had proven itself through multiple operations, deployments, and exercises. Its own attitudes, and consequently those of the active force, had changed as both accepted the component's essential role in the Total Force.

The active force, as Lewis, Lyon, and Bodycombe all pointed out, had given the Air Force Reserve real missions and the equipment to conduct them. But the single most important thing the Air Force had given the Air Force Reserve was a management structure in which all key positions were held by Reservists—the only service in which this was true. By its total acceptance of the intent and rationale of Public Law 90-168, the US Air Force made it possible for a succession of reserve leaders to rise to management positions and bring their expertise and experience as career Reservists to bear, producing the current ready and responsive Air Force Reserve. ■



*The current Chief of the Air Force Reserve is Maj. Gen. Richard Bodycombe.*



# The Total Force

In maintaining the records of Air Force Reservists and Air Guardsmen, ARPC in Denver is much more than simply a personnel record updating facility. In a crisis threatening the nation, it is geared to call thousands quickly to the colors in performing . . .

## The Air Reserve Personnel Center Mission: Mobilization

BY WILLIAM P. SCHLITZ, SENIOR EDITOR

**W**HEN the air traffic controllers struck nationwide with the potential threat of a major disruption of the US's air transport system, orders came from Washington. Almost immediately at the Air Reserve Personnel Center in Denver computers began humming, searching through ARPC's manpower resources for those reserve and retired air traffic controllers who might be available if needed.

Quickly the Center identified a number of air traffic controllers meeting the experience guidelines identified

by the Air Staff, and forwarded the data to the Pentagon.

If necessary, the Center was prepared as a routine matter to contact these members, fulfilling their mission of the recall of reservists and retirees.

Regardless of which side one favors in the air traffic control squabble, the folks at ARPC had done their job and stood ready to fulfill their primary mission: mobilize Air Force resources.

The Center is an active-force organization staffed by fifty officers, 123 enlisted people, and 672 Civil Service personnel. They are augmented by twelve statutory-tour officers and two enlisted personnel. It and the Air Force Accounting and Finance Center are co-occupants of a building located on Lowry AFB in Denver. ARPC and AFAFC do not just share an office building; the two organizations have operational links.

The huge building that houses them—completed in 1976—is three levels containing about fourteen acres (630,000 square feet) of floor space. Amenities include a barber shop, auditorium, notions store, bank branch, credit union, and library. Outside, major sidewalks are heated in winter to rid them of ice and snow. Called officially the Gilchrist Building, it is named for the first AFAFC Commander. The facility was designed from scratch to house ARPC and AFAFC.

A key feature of the Gilchrist Building is its Mailmobile delivery system, especially important to ARPC because of the sheer volume of mail received and generated. The Mailmobiles are battery-operated, computer-guided vehicles that follow magnetic routes down the building's corridors in runs from the joint ARPC/AFAFC mailroom and other central locations.

The robot vehicles—named in space-fantasy fashion ICU2 (I see you too), Mr. Spock, and the like—are programmed to stop momentarily at specific stations along the route, their beep-beep-beeping indicating to users that they have arrived.

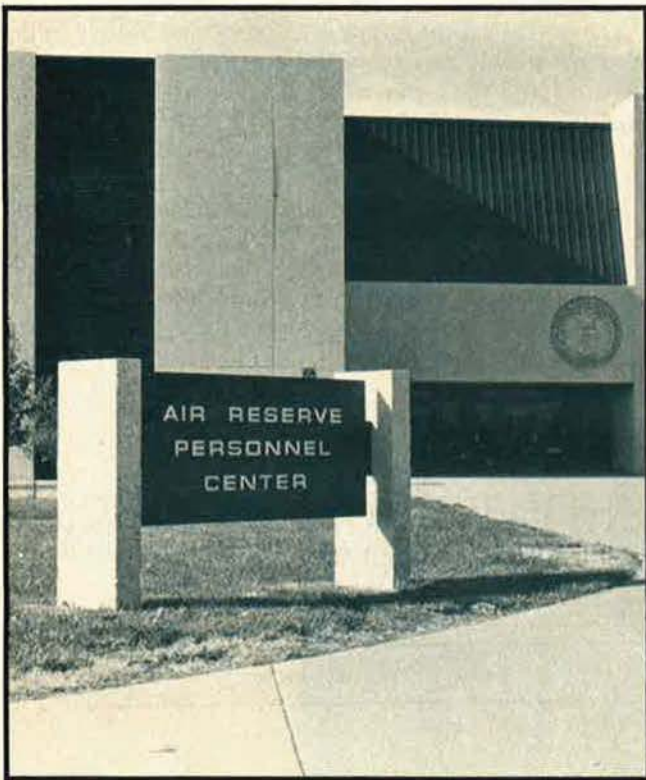
Not only mail, but packages, requisitions, computer and word-processing materials, office supplies, and other items can be loaded aboard the Mailmobiles for shipment interdepartmentally and outside.

The mention of robots delivering mail may seem mundane, but that and such other automated systems as ARPC's computer capabilities keep the Center abreast of its immense work load.

A major ARPC responsibility is administering Reservists' records. Promotions, reassignments, medical reports, separations, effectiveness reports, etc.—most personnel matters generate actions which in turn will flow to ARPC, mostly by mail. Reflecting this, the Center processes some 3,500 documents on any given workday.

ARPC is charged with maintaining the records of and providing career development services for Reserve officers from second lieutenant through lieutenant colonel and all enlisted ranks (exceptions are Reservists on extended active duty). It also handles the master personnel records of all Air National Guardsmen through the rank of colonel.

Pertinent master record data has also been microfilmed under an elaborate—and, where possible, automated—system and placed in a precise pattern on four-by-six-inch clear mylar cards called microfiches,



The Air Reserve Personnel Center at Lowry AFB, Denver, shares a modern office building with the Air Force Accounting and Finance Center. The two maintain operational links via computer and share a unique Mailmobile automated delivery system that helps contend with voluminous correspondence.



or "fiches" for short. These records are filed in a safeguarded area at ARPC.

A larger part of ARPC's work load in the records area is concerned with the computer update and microfilming of documents. Most original documents are destroyed once microfilmed. However, officer effectiveness reports, official photographs, and citations are still maintained in a paper mode to support ARPC selection boards.

ARPC experiences significant turbulence in the records area. For example, the ARPC had gains of 81,390 and losses of 76,010 during 1980.

The bulk of ARPC's day-to-day personnel operations is managed by three of the Center's four directorates. (For a rundown on ARPC's recent reorganization of its directorate system, see p. 20.)

"A Reservist can walk in the front door here at the Center, ask to see his record and, within minutes, barring extenuating circumstances, be huddled with a record specialist discussing it," said ARPC Commander Col. James F. Egbert.

The key to this rapid response is the individual's Social Security number, which in this system doubles as a serial or identification number. It can be used to bring up record data on the computer or for the manual retrieval of the microfiche by a Center personnel specialist. A photographic copy of the record microfiche is then quickly made and dispatched to the requesting Reservist. The master record original never leaves the climate-controlled storage area.

Reservists can also request that copies of their records be mailed to them. Officials, such as members of promotion boards, can review Reservists' records. Also, the public can ask for information on military members but access is limited under provisions of the Privacy Act and Freedom of Information Act of 1974.

Record specialists are also on tap to answer inquiries over a toll-free telephone (1-800-525-0102) system. The calls come into a central switchboard where a "customer representative" channels them to the appropriate specialist. Switchboard hours are from 6:30 a.m. to 4:30 p.m. Mountain Time weekdays. Into the Center also come commercial line and AUTOVON calls. The telephone inquiries average more than 500 a day.

### Key Mission: Mobilization

And while record-handling and other chores at the Center may appear as mere bookkeeping, they are essential to the primary ARPC mission: mobilizing individual Reservists and providing records on AFRES and ANG unit personnel to the Air Force Manpower and Personnel Center during a crisis.

Through its paperwork, the Center keeps track of crucial elements of the air reserve forces that constitute the mobilization base:

- The Ready Reserve consists of the Selected Reserve and the Individual Ready Reserve. AFRES units, ANG units, and Individual Mobilization Augmentees are assigned to the Selected Reserve. They are considered vital in the initial stages of a crisis and would be available within twenty-four hours of notification.

- The Individual Ready Reserve and the Retired Regulars are two sides of the same coin. The Individual Ready Reserve consists primarily of enlisted people

who have been separated from active duty or reassigned from AFRES or ANG units and still owe some time on their six-year military service obligation or contractual obligation commitment. By the same token, a large part of the retired regulars is made up of usually senior active-duty personnel who retire after twenty years or so of service.

Theoretically, all could be recalled to active duty and would provide the lower and upper levels of the grade structure. (Air Force officers who have retired are all subject to recall under various laws.) When needed, those enlisted people with the most recent military experience would be recalled first.

- Individual Mobilization Augmentees are people who have been assigned to specific wartime slots and are being trained to fill them. The IMAs number about 9,500 of the entire air reserve force of 331,000 the ARPC has a handle on at any given time.

There is also a Standby Reserve, comprising individuals who possess mobilization potential but who are unable or unwilling to participate in the Ready Reserve and retired Reserve. These can be mobilized under congressional authority.

ARPC has conducted three mobilizations in its twenty-seven year history, during the 1961 Berlin and 1962 Cuban crises, and the activation of Reserve and ANG units following the 1968 *Pueblo* incident. Some of these later served in Southeast Asia.

In conducting a mobilization, ARPC computers would provide filler resources by matching Reservists with vacancies, automatically publish their orders, and produce tapes of address lists used to notify Reservists overnight by mailgram via Western Union.

A Personnel Mobilization Center at ARPC is linked directly to the Readiness Center in the Pentagon and the Personnel Operations Center at Randolph AFB, Tex.

### Widespread Participation

Individual Reservists not assigned to AFRES units serve in many capacities and are rewarded in various ways. With certain exceptions, all are administered by ARPC. A partial list is useful to demonstrate Reservists' widespread participation.

Under the Individual Mobilization Augmentee program, Ready Reservists are assigned to wartime required positions at Hq. USAF, all major commands and separate operating agencies, and other organizational units. These positions are in almost every Air Force career field.

"The typical IMA has to be highly motivated, self-sufficient, and dedicated," said Lt. Col. Roy K. Beavers, chief of the IMA management division at ARPC. "In many cases, the IMA has to beat the bushes to find an assignment suited for his/her grade, skill, and geographic location. IMAs train with units of other commands or even other services. To train, the IMA must initiate and accomplish things that Reservists assigned to AFRES take for granted. For example, the IMA must develop his own training schedule in conjunction with his active-duty supervisor. He must decide on his own when to pull his annual tour. He must ensure that he satisfies the Air Force training requirements while earning a 'good year' for retirement purposes simultaneously." (Annual tours are usually spent at the base



where the IMA would report on being mobilized.)

Other individual Reservists have been assigned to act as Air Force admissions counselors to recruit and assist applicants to the Air Force Academy and ROTC programs. Still others serve with the Civil Air Patrol, USAF's auxiliary. Others are assigned as disaster preparedness officers with the Federal Emergency Management Agency.

These types of Reservists are tagged as reinforcement designees and in wartime would provide a mobilization pool.

A deluge of support for the IMAs and reinforcement designees comes from ARPC's Consolidated Reserve Personnel Office, in effect the counterpart of organized units' Consolidated Base Personnel Offices. Moreover, as such, ARPC's is the largest "CBPO" in the Air Force.

The CRPO acts as would any CBPO, in that it administers all personnel actions necessary—keeping records up to date, providing career guidance, processing assignment actions, and the like. But while the conventional CBPO has the people it supports at hand to be dealt with face to face if need be ("The following will report for smallpox inoculation . . ."), the Center CRPO's clients are scattered around the country and even the world. Thus, the importance of ARPC's mail and telephone operations. Managers at the Center's CRPO hardly ever see their clients in person.

While it may sound trivial to an outsider, keeping Reservists' inoculation records current is of immediate importance to ARPC folks. That is just one more item to nail down in assuring that the force is mobilization-ready. The Center dispatches a computer-generated letter authorizing vaccinations at military medical facilities in the individuals' area. The letter is then endorsed by medical personnel to authenticate the shots.

Thus, in many cases the IMA will function as his own "geographically separated unit."

### Filling Slots

Those at ARPC who manage the Reserve know—from their computer readouts—what positions are vacant. They urge those who plan to leave active duty but are interested in serving in AFRES or the Air Guard to contact the Center well before their enlistments are up.

"Among officers, we are on the lookout for backseaters to serve in the Reserve forces where they are in short supply—either electronic warfare officers or weapon system operators," said Maj. Lee Barton, an active-duty officer at the Center involved in Reserve officer assignments. Company-grade intelligence specialists are also on the shopping list.

"If an officer or enlisted person applies," commented Major Barton, "we check their records to affirm qualifications for a particular slot."

While certain other types of pilots are in short supply, "we are at full strength with Reserve transport pilots. Those who exited the Air Force to take jobs with the airlines discovered that they'll usually occupy a third seat in the cockpit and won't be flying the aircraft themselves for perhaps years. Several of the airlines encourage such pilots to take Reserve assignments as one way to stay current in flying proficiency," explained

Major Barton. "An added inducement is that flight pay plus per diem plus other benefits can add up."

"On the other hand," said Major Barton, "the Air Force also has a program that encourages former pilots to reinstate their commissions and return to extended active duty."

A special operation within ARPC—the Single Manager program—serves three types of Reservists: medical personnel, attorneys and legal specialists, and chaplains.

While IMA Reservist medical personnel ranging from physicians to technicians are located around the country and even abroad, for administrative purposes they are all assigned to the 9019th Air Reserve Squadron at ARPC, where their records are maintained. The 9019th has no facilities and exists on paper only. Attached to active-duty medical facilities for peacetime training in their military specialties, on mobilization the medical people have been "targeted" for certain assignments with the major commands. Thus, the majcoms know how many and what type they'll acquire. The option, though, is open to shift medical specialists as needed to areas of critical wartime need.

Paper squadrons have also been created at ARPC for the administration of the other two categories: the legal and chaplain Reservists, in the manner of the Reserve medical people.

Another special office at the Center provides personnel and administrative support for mobilization augmentee one- and two-star general officers and colonels filling Reserve general officer slots, more than 100 such. However, all ANG and AFRES general officer records are maintained in Washington, D. C.

### Experienced Professionals

The senior Civil Service employees at ARPC, many of whom have had years of experience on the job, provide a great deal of professional stability and the all-important "corporate memory" that keeps the Center smoothly on track.

These and the corps of active-duty Air Force officers and enlisted people at ARPC are also reinforced by a sprinkling of full-time Reserve officers stationed at the Center under "statutory" contracts that initially run for four years and can be extended. They are selected and assigned because of their considerable experience in Reserve matters.

"But we do have a problem with our lower-level employees who in many cases come to us as new entries in the job market," said ARPC Vice Commander Col. Thomas E. Walsh.

"We are authorized the lowest Civil Service grade average—5.1—in the Denver area. Government agencies located in Denver constitute the second largest number of federal employers—next only to Washington—in the nation. So we train the youngsters and hope to promote them internally. But often that doesn't happen. In many cases we lose them to better-paying jobs at other federal agencies. The fact that the Center endured a thirty-percent attrition and a ninety-five percent employee turnover rate last year and still functioned up to the mark is a tribute to our supervisory personnel," Colonel Walsh said.

On the whole, Reservists serve under various "plans."



For example, all Air Guard unit members—there is no other type—are classified as “Category A.” Likewise, Reserve combat and combat sustaining units are also “Cat A.” As such, they must put in a tour of fifteen days of annual active-duty training plus another twenty-four training periods throughout the year.

Most Individual Mobilization Augmentees are in the “Category B” group, which means they’ll serve twelve to fourteen days during the annual tour of active duty plus another twelve days during the year. Many Reservists and Air Guardsmen, however, opt to put in much more time than required by law.

Limited numbers of Reservists fall into other categories—such as “D” and “H”—which have lesser work/pay/point arrangements.

Ninety-five percent of participating Reservists draw pay for their training and all earn “points” toward retirement pay—one point for each four hours of inactive training and one point for each day of active duty. But not all Reservists are paid for time on the job. Officers serving as admissions counselors, for example, earn only points.

In any event, the ARPC is plugged into the neighboring Air Force Accounting and Finance Center’s computer to record the transactions and issue pay checks. A Reservist’s points are logged through an automated accounting system that provides great accuracy. Reservists must earn fifty points annually to make a “good” year and serve twenty good years to earn retirement pay. The computerized system keeps track of each member’s point history and issues a yearly summary.

### Other ARPC Activities

Another important ARPC-sponsored undertaking is the semiannual meeting of its Air Force Reserve Policy and Advisory Council. Membership is made up of Reserve officers active in one AFRES program or another.

The upshot of council meetings are recommendations made to the Air Reserve Forces Policy Committee in Washington. For example, the council examined the inequity of Reserve officers who had completed twenty good years of active duty and could retire with an immediate pension while, on the other hand, similarly serving enlisted Reservists were required to wait until age sixty to draw retirement pay. The council’s recommendation to end the inequity led to legislation that did just that.

The council urges Reservists with suggestions to forward them to ARPC.

Another important function at the Center is the promotion of Reserve officers. Selection boards consider promotion for about 7,000 officers—from captain through colonel for AFRES and captain through lieutenant colonel for the ANG. The basis for promotion is documentation in Officer Selection Folders put together from ARPC data sources. The Center even offers tips on how Officer Effectiveness Reports should be written and other steps to take to improve chances of promotion.

The Center also convenes boards that select people for further professional military education and airmen commissioning. Ancillary tasks include monitoring and directing personnel training, classifying skills, and processing AFROTC officers to active duty.

### Other Financial Factors

Besides pay and points toward retirement income—and the other motivational factors that lure people into Reserve assignments—there are other financial emoluments as well, most administered by ARPC.

For example, some Reservists in critical career fields can draw a reenlistment bonus, say, of \$1,800 by signing up for another six years.

In one way or another, Reservists in whatever category are covered either fully or part time under the VA’s Servicemen’s Group Life Insurance program. If elected, this may pay a deceased Reservist’s beneficiaries either a lump-sum \$20,000 or thirty-six equal monthly installments.

Additionally, the Reserve Component Survivor Benefit Plan allows a Reservist to leave a percentage of his future retired pay as a monthly annuity to his beneficiaries. And the annuity increases automatically to thwart inflation, tied to the Consumer Price Index.

ARPC also manages Reserve retirements, determines eligibility to receive retired pay, transfers Reservists to the Retired Reserve, and processes retired pay and survivor annuity applications (several options are available). In the matter of retired pay, each record is audited twice to ensure accuracy and eligibility. A member of the Retired Reserve is afforded several “perks,” such as space-available air travel aboard USAF aircraft—“at the discretion of the host commander.”

In way of tribute, the other services have used as a model the Reserve retirement benefits plan. And, generally, they have sent people to “look over the shoulder” in studying ARPC’s mobilization techniques. In addition to retirements, the Center handles nearly 31,000 voluntary and involuntary (with cause) separations annually.

ARPC played a central role during “Condor Redoubt ’81,” AFRES’s nationwide mobilization exercise.

Conducted during a three-week span in August, the exercise involved more than 50,000 Reservists throughout the US. It was the fifth in a series of such annual exercises. (*Also see p. 18.*)

Crux of ARPC’s part in the exercise was the mailgram messages generated from computer tapes supplied by the Center to Western Union. Involved Reservists checked in via telephone to ARPC after receiving the mailgrams. Object of ARPC’s part in “Condor” was to simulate filling vacancies Air Force-wide using people assigned as IMAs or retired regulars.

This year marked the first time ARPC contacted members of the retired regulars during a mobilization test. A separate form was “mailed to Reservists to gather more complete information on their present situations and ability to respond to a future mobilization,” said ARPC officials, who added: “Notification results have improved with each exercise, with each year showing better response rates in less time.”

Finally, in the continuing effort to keep its far-flung individual members informed, ARPC distributes a newsletter, *Update*. The August issue, for example, contained twelve pages of items concerning thirty topics. Subjects ranged from DoD’s decision to continue smallpox immunizations to the new enhancement of the pay system that would automatically provide allotments when a Reservist is mobilized. ■



## The Total Force

**I**N 1948, after I had served a tour as an Air Attaché in Norway, I got a chance to be part of the humble postwar beginnings of the New York Air National Guard.

The Guard was organizing squadrons, groups, and wings in New York, and I was assigned as one of the Air Force advisors. In those days we were called "instructors." Col. Erickson Nichols was the Senior State Advisor, and Col. Verle Luehring was the Wing Advisor. I was sent to Westchester County Airport to be attached to the 137th Fighter Squadron—that was like being attached to nothing, because the squadron existed only on paper.

Actually, there were some names on the paper—a Squadron Commander, Lt. Col. James A. Clark, a former Eagle Squadron pilot and Deputy Commander of the 4th Fighter Group in England during World War II. An ace during the war, he was now a stockbroker in New York. There were about a dozen other names, even some enlisted personnel.

Westchester County Airport was just that, a county airport near White Plains. There were no buildings, hangars, or parking area for military aircraft. There were no aircraft anyway. We were destined to get P-47Ds, the famous "Jug" from World War II days. A few of these planes had been assigned to an ANG B-26 squadron at Floyd Bennett Field, so they would be readily available when we activated. Every Saturday and Sunday, pilots like Jim Clark, Joe Kelley, and Art Stelges would fly them to Westchester. There, I rechecked, and then checked out others. Most of the guys had flown Jugs before and were excellent pilots so the process was very informal, but dangerous by today's terms of a recheck. I must have had 500 hours in the P-47 during World War II, so it all fit together well, and I loved being back in the bird. The Jug was strong and reliable.

### Quonsets and Cross-countries

The manager of the airport gave us a two-wheeled trailer with a little 10' × 10' house on it that had previously served as a guard shack. We used it as an assembly point for



*Maj. Les Johnsen,  
advisor to New York Air  
Guard, in front of a Guard  
P-47 Thunderbolt ("Jug").*

## Air Guard's Postwar Beginnings

The humble beginnings of the reserve forces are useful to recall when one contemplates their vital present contributions to US airpower. The experience of the New York Air National Guard in the immediate postwar years is typical, and told here.

BY COL. LESTER J. JOHNSEN, USAF (RET.)





Above, Maj. Les Johnsen mounts a New York Air Guard P-51H Mustang, the unit's next aircraft after the P-47. Right, Major Johnsen (right) with Col. Charles E. Rayens, Senior Instructor of N. Y. Army National Guard.

scheduling our flights. Things began to happen. Someone had pre-positioned dismantled Quonset huts in the area nearby, anticipating that we would need temporary buildings before a hangar could be built. As soon as we found them we began to assemble the Quonset huts. Also, the runway was lengthened by about 1,500 feet and a few more taxiways put in.

On drill nights we met in an Armory in White Plains, for roll-call, basically. It was a beginning. When summer came, we met in the area where the huts were being erected. We actively recruited officers and enlisted men, and one day we had enough of both to be federally recognized. That was a stand-up procedure to prove that it was feasible to have a squadron at that location—that the area was populous enough to supply officers and enlisted men to fill the units. We were about a dozen miles north of New York City and had a big population to draw from. We had to prove that everything a base needs—water, sewage, electricity, runway lengthening possibilities, building expansion ability—was available. We made the grade while we were still in the Quonset huts.

With that approval we could hire technicians, then called "Caretakers." They were qualified Air National Guardsmen, but worked full time for the Guard. They were all from World War II and had lots of



experience. They slapped up five Quonset huts in a hurry, and they also crewed the planes that began to arrive. That part was fun. The planes had been in storage at Atlanta, Ga. Nothing like a cross-country flight for those who had not done it in some time. A great experience for all.

In the meantime, contracts had been let to build a hangar, a warehouse, and an aircraft parking ramp. With these in place and a full complement of men, we had a going concern—complete with all the

problems of a base: budget, maintenance, accidents, deaths, recruiting, and pay.

There were two master sergeants in my office, one a maintenance type and the other an administrator. Our job was to see that things were done in accordance with the Air Force regulations. I taught checked-out pilots in the aircraft, set up training programs, and served on the board that evaluated our officers for federal recognition. As in any fighter squadron, combat readiness was the number one objective. Our biggest



*Col. Lester J. Johnsen, USAF (Ret.), has commanded fighter squadrons, groups, and a fighter wing. He has flown fighter aircraft from the P-40 to F-106s. His two sons are pilots. He and his wife now operate a Christmas tree farm in Shelton, Wash. An occasional contributor to AIR FORCE Magazine, his most recent article for us was "From Fighter Pilot to Diplomat," p. 76, June 1981.*

problem was the lack of gunnery and bombing ranges. It was next to impossible to schedule time on one of the ranges hundreds of miles away. All in all, a very challenging and interesting job in those days for a major.

After about eighteen months we were going along smoothly. We had a full complement of effectively flying pilots, air technicians on the ball, and lots of new young men from Yonkers, the Bronx, and Westchester. Some of the youngsters were still in high school and had never traveled far from home until we took them on a C-47 navigation flight to Washington State via Texas and California. They had permission for absence from their teachers and had to write essays about their flights. There were lots of questions along the way, but I never saw any of the papers. We didn't get any complaints from teachers. In any event, the training paid off when we flew tactical aircraft and participated in air defense exercises.

### **The Korean War**

About this time the Korean War broke out. Our armed forces were probably at the lowest ebb ever and some Air Guard units were called to active duty. A B-26 unit in our wing went to Korea. We thought we would get the call any day, but it never came. At this time many of the pilots resigned from the Guard to join the Air Force—including the squadron commander, Jim Clark.

One day, Colonel Nichols came to me and said, "You have done such a good job organizing this unit that we want you to go to Schenectady to do the same."

Oh boy, back to square one! However, it worked out pretty well. I had a P-47 to fly back and forth, per diem when I stayed over, and all that good experience at Westchester behind me.

Schenectady was in no better shape than Westchester had been. No facilities, but the Airport Manager got us started with a couple of rooms in a building. The first thing

I did was put a story in the local papers, asking anyone who was interested to meet with me at the Naval Armory. Standing on a naval gun platform, I talked to those who showed up about the Air Guard. From there we progressed just about the same as we did at Westchester.

Again, men and pilots were good. The hangars and facilities were built, they got their own advisor, and I didn't have a chance to miss that commuter flight as we were converting to P-51Hs. I was off to learn this new bird.

The last of the P-51 line, the H was a smaller plane than earlier models. A real beauty that never got into combat. It had only four .50-caliber guns. Its speed and altitude were way up there because of a manual supercharger. On a cross-country we would cruise at 35,000 to 40,000 feet with a great groundspeed. It also had a radio compass, the first for me in a fighter.

The Westchester unit probably had more fun than most units, which was a big help toward its success. Some of the pilots were born comedians, plus they were from all walks of life. Besides Jim Clark, the stockbroker, there was a taxi driver from New York City; a vacuum cleaner salesman who said he spent most of his time in daytime movies; John Jelke, the margarine heir; a doctor; lots of salesmen; two airline pilots; and even a couple of unemployed guys who were around a lot and would fly anywhere when needed.

Many of them were happy to go to active duty during the Korean War. They liked flying and wanted it as a steady thing. Many even stayed on after the Korean War.

### **Sherman Tanks and DFCs**

We wanted to let the local people know that the Air Guard was in existence, so on the first Air Force Day after we were legalized, we put on a real publicity effort. We got different types of aircraft flown in, and even a tank from the Army Guard. When the tank arrived, the

fighter pilots had to check out in it—from then on it became the commuter vehicle going from one point to another in a straight line, regardless of terrain. Many people were startled to see a Sherman tank cruising along, coming to a stop in front of the coffee shop and a bunch of guys in flying suits hopping out.

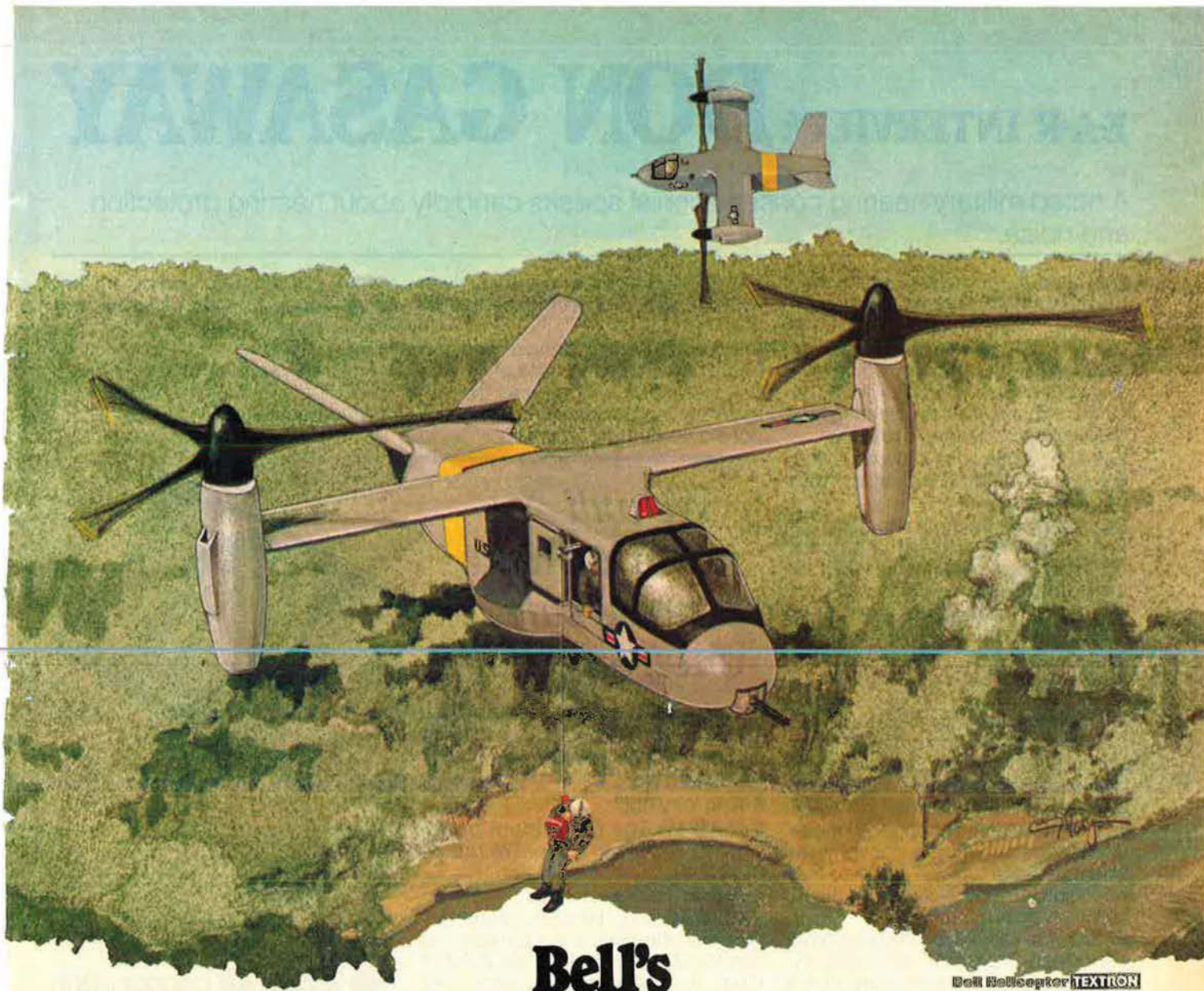
We also arranged a parade and decoration ceremony for Air Force Day. Although the Air Guard is not noted for its marching capabilities, we managed to please all the visitors. Since we had no one to decorate, we "redecorated" a lieutenant with a Distinguished Flying Cross he had received during the war. We couldn't find anything against pinning it on a second time. Col. Bernt Balchen, the famous Arctic explorer and pilot for Richard E. Byrd on his Atlantic and South Pole crossings, did the honors. Bernt called it the "great hoax," but he went along with the ceremony.

The only blight on the day was that we had not anticipated such a response to our invitations. Roads were blocked for miles around the airport, and the police had their hands full for many hours. But it was a happy crowd and a successful day.

When I was with the ANG in 1948, I noticed that they don't have some of the problems that the Air Force does. Their people don't move around—there is no constant flow of new pilots and inexperienced mechanics. Of course, most of the Guardsmen are part-timers. Nonetheless, when they have an important commitment to the Air Force, they do an excellent job. And in case of an emergency, when the unit is called up, all the Guard personnel go, regardless of their civilian jobs. This was not so closely defined in 1948-51, but it is today.

Today the Guard is a true partner in the Air Force mission. The Portland Guard, for example, has an air defense alert commitment. The Schenectady unit now has the job of supplying the DEW Line, using C-130s, some of them equipped with skis. When I visited the unit several years ago, they were no longer fighter pilots, but they loved the job they were doing and felt they were making a real contribution to the Air Force and their country. And so they were. ■





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# E-A-R INTERVIEW: DON GASAWAY

A noted military hearing conservationist speaks candidly about hearing protection and noise.

**E-A-R:** What do you feel are some of the most significant breakthroughs in hearing conservation in the past 25 years?

**GASAWAY:** Instrumentation and trained personnel that allow early detection of noise-induced hearing loss. Plus, effective hearing protection.

**E-A-R:** How does one know when they are encountering a potentially dangerous noise?

**GASAWAY:** If one must shout at three feet to communicate or use a loud voice at a one-foot distance, they are in a potentially hazardous noise area.

**E-A-R:** Obviously, noise-induced losses that you observed over the years must have presented a challenge to you, so what did you do about it?

**GASAWAY:** Education was my route. I tried to better educate medical personnel who were responsible for the health and welfare of Air Force, military and civilian personnel.

**E-A-R:** Have things changed? I mean, do people more readily accept noise as a real threat today – more so than when you first got involved with the Air Force program?

**GASAWAY:** Yes. All military and other education programs are more dynamic today than they were in the past. Both public and private sectors are more aware and are initiating hearing conservation programs.

**E-A-R:** What led you to get involved with the area of hearing conservation?

**GASAWAY:** Seeing hundreds of Air Force personnel who had lost hearing due to excessive noise was the ultimate challenge. Something had to be done. I was truly motivated.

*We will never achieve a noise-safe environment.*

**E-A-R:** Do you believe that we will ever achieve a noise-safe environment?

**GASAWAY:** No!

**E-A-R:** Why not?

**GASAWAY:** The by-product of advanced society is noise. We readily accept it.

**E-A-R:** Is there a solution?

**GASAWAY:** Yes! Hearing protectors that are effective, easy-to-use, and comfortable. Protectors like E-A-R™ Plugs. In my years of experience, they were the most accepted and readily worn of the various hearing protectors available. They attenuate noise

remarkably well, and they do prevent noise-induced hearing loss for one simple reason, they are worn.

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*"If one must shout at three feet to communicate...they are in a potentially hazardous noise area."*



*"I tried to better educate medical personnel..."*



*"There have been breakthroughs... E-A-R Plugs."*



Head-on view of the F-16/79 taxiing shows the new fixed ramp inlet to tailor airflow for the J79 engine. This aircraft, a two-seater, has been flown by evaluation pilots of several foreign air forces.



When President Carter reversed his field to permit development of a fighter aircraft for export, General Dynamics was ready with a design based on the USAF F-16 "Fighting Falcon."

## FLYING IN THE F-16/79

**T**HE needle on the machmeter is pointing to 0.9. At 38,000 feet over central Texas, Neil R. Anderson is about to engage the afterburner of the J79 engine of the F-16/79 multirole fighter aircraft.

A slight pitch-down attitude results in an increase in airspeed. The speed accelerates as the afterburner takes effect. We are now straight and level. The machmeter approaches, then passes through 1.0, and continues climbing. The remarkable sensation of passing through the sound barrier in the F-16/79 is that there is no feeling at

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**BY F. CLIFTON BERRY, JR.**  
EDITOR IN CHIEF

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all. No noise, no thumps or bumps, no change in the feel of the sidestick control. The aircraft is rock-steady and stable as the needle now indicates Mach 1.3.

Neil takes the engine out of burner back to military power, and the F-16/79 continues to cruise in supersonic flight while an AIR FORCE Magazine editor in the back seat tries a few simple maneuvers.

The purpose of this flight in the

airspace between Carswell and Sheppard Air Force Bases, Tex., is to report the details of a demonstration flight. The F-16/79 aircraft was designed under a General Dynamics-funded program to fulfill the requirements for an export fighter. These resulted from a January 1980 policy decision by President Carter that the sale to foreign countries of "intermediate fighter aircraft" developed or modified for export would be in the national interest. Mr. Carter defined an intermediate fighter as "one whose cost and performance characteristics would generally lie





*Sharp nose-up pitch angle and heat waves from afterburner are clearly shown in this takeoff photo of the F-16/79. Aircraft rotated after eight-second ground roll, and was passing through 1,500 feet within twenty seconds after brake release.*

between our current export fighter, the F-5E, and the fighter aircraft now in production for US forces, such as the F-16."

The F-16/79 aircraft fits that definition. First flown on October 29, 1980, by GD test pilot Jim McKinney, the F-16/79 has greater speed, range, and avionics capabilities than the F-5E. Its unit flyaway price reflects the differential in cost between its J79 engine and USAF's F-16 powered by the F100 engine. At the same time, the F-16/79 retains the standard F-16's advanced digital avionics suite. That includes its APG-66 all-weather fire-control radar, fire-control computer, inertial navigation system, stores management system, and cockpit displays.

#### **Preflight Preparation**

As AIR FORCE Magazine found on the flight reported here, the F-16/79 definitely retains the F-16's ability to maneuver at nine Gs and supersonic airspeeds.

Preparation for the flight began the day before, with study of detailed information about the aircraft, its systems, and the program. On the flight day, a one-hour orientation discussion was followed by

two hours of preflight briefing. That followed an interval to suit up and fit personal equipment for the flight such as G-suit, oxygen mask, and helmet.

Neil is Director of International Flight Evaluation and Engineering at the Fort Worth Division of General Dynamics. He has been a test pilot with GD since 1967. His briefing covered the events planned during the flight itself, as well as a concentrated session on the cockpit layout, flight controls and displays, and the responses and sensations to be experienced during the 1.2-hour flight.

The F-16 cockpit layout and displays are designed so that the fighter pilot need spend only about ten percent of the time on flying the airplane and the other ninety percent on executing the mission. For the F-16/79, the missions can include air superiority, high-speed interception, combat air patrol, and close air support. The design achievements of the cockpit allow the pilot to fly the aircraft and perform these different missions with the same basic layout. The pilot, via proper manipulation of switches and displays, can modify the cockpit displays in flight to execute the desired

mission. In most cases, this is done by manipulating a single switch, as in transitioning from air-to-ground to the dogfight role, or changing from air-to-air to surface attack just as readily.

Neil's briefing points can be summarized in a few sentences. First, the pilot can change the aircraft from role to role with simple and easily learned switch manipulations.

Second, the aircraft will do exactly what he tells it to and will remain stable until he changes his mind. The pilot keeps his head and mind outside the airplane, projecting his thoughts on the mission and letting the built-in systems help him fly it without undue effort.

Third, the pilot need not worry about performance limitations. He can make it perform anywhere within the envelope ranging up to nine Gs or twenty-seven degrees of angle of attack. The pilot should expect the controls to feel the same and respond as positively at any point throughout the flight regime. All of these statements proved valid during the flight.

#### **Pre-Takeoff Routine**

Climbing aboard the F-16/79 requires no more agility than getting



into an auto. Before entering, one wonders whether the seat reclined at thirty degrees from the vertical will feel odd. After swinging your legs over the sill and onto the rudder pedals, then settling back into the seat, you find that within a few seconds it not only feels comfortable, but the natural way to sit.

Rudder pedal adjustment is handled easily and positively, even for a 6'3" editor. A lock-release toggle is convenient to left-hand adjustment. Seat height adjustment is equally simple via a toggle switch for up-down movement. The connections into the various communications, oxygen, G-suit, and ejection seat systems are smoothly assisted by GD's Bob Jungers. Then the canopy closes smoothly, creating a benign silence.

The main sensation once the canopy is closed is at first surprising. It does not feel as if you are sitting *inside* an airplane, but rather above it and able to see all of it. This is true even at the six o'clock view. From the front seat, the pilot can monitor his own contrails, for example. (The absence of a claustrophobic feeling is assisted by the simple shoulder and torso harnesses that combine a lot of the strapping "spaghetti" in earlier systems.) To see at six o'clock, one grabs a convenient rail (like those

on bathtubs), turns in either direction, and has a clear view of the vertical stabilizer and horizontal tail.

### Engine Start

No ground support equipment is necessary for engine start on the F-16/79. Neil goes through the checklist, starts the engine, and watches the instruments to be sure it is performing within limits. He performs a rapid alignment of the inertial navigation system (INS) that takes 1.6 minutes, which includes the engine start. Outside, Jim Jones, in charge of the ground crew, verifies by intercom that everything looks good beneath. Then he disconnects and gives a thumbs-up signal.

Neil Anderson advances the throttle to seventy percent power. The aircraft, tagged "Dynam One" for this flight, begins to roll out of the parking shelter toward the runway. Neil tests the front-seat brakes; then his back-seater tests his brake pedals. Both sets operate properly. Ejection seats are armed, and the long taxi begins.

We have more than a mile to taxi and must negotiate several turns, so Neil invites his visitor to take control. The aircraft is rolling at a high-speed walking pace. The first action is to engage nose-wheel steering from the rear seat. The right index finger does that by depressing a but-

ton on the sidestick controller. Light pressure applied to the rudder pedals with first the right boot, then the left, produces very little steering motion.

Then Neil points out that these systems require a positive input, to which they will respond positively. Now then, a solid push on the left rudder pedal results in a crisp movement of the nose leftward, counteracted by a solid push on a right rudder pedal, bringing the nose back over the yellow centerline. Once the pressures are understood, as opposed to pedal displacement, steering is a joy. Then it's a matter of holding the proper taxi speed under the changing wind and taxiway slopes, also easily done once one realizes that the throttle under the left hand will go where it is set and stay there.

(This is useful preparation for doing the same thing in the air when Neil calls for a specific power setting; the practice during taxi makes it easier to do in the air. In fact, during the flight we find out that there really are no throttle limits. We slammed it frequently from idle to maximum afterburner and back as required, with no inhibitions.)

Now the aircraft reaches the hold line on the taxiway to Runway 17-35 at Carswell. After some radio conversation involving a B-52, a T-37, and a C-130, also under Carswell Tower's control, Dynam One is cleared for lineup on Runway 35. With the backseater's new-found confidence in nose-wheel steering and power control, he turns the aircraft onto the runway, taxis the required distance, then executes a 180-degree turn, ready for takeoff.

### Off the Ground

Carswell Tower gives Dynam One takeoff clearance, and Neil takes control of the aircraft. This is an afterburner takeoff. It begins with a very solid acceleration, body pressing into the seat, but very quiet. The aircraft quickly picks up speed, passing through 100 knots in less than eight seconds. Aerodynamic steering is quickly gained, and so is 130 knots when rotation begins, followed by what seems like a leap off the ground and a climb through 1,500 feet in less than twenty seconds total. The ground falls away rapidly, and the horizon line rushes away



Neil R. Anderson (left) is Director of International Flight Evaluation and Engineering for General Dynamics Fort Worth. He is a former Marine pilot who in 1981 made his fourth appearance flying the F-16 at the Paris Air Show. On the right is James A. McKinney, F-16/79 Program Test Pilot, who made the first flight of the F-16/79 aircraft on October 29, 1980.



toward the Texas–Oklahoma border.

(On an earlier day, to test the F-16/79's performance in the intercept role it was placed on simulated ground alert with engine off and no ground equipment around. From scramble to interception at Mach 2.0 at 40,000 feet took only eight minutes, including one minute for INS alignment.)

We continue to climb at a thirty-degree angle and, even after reducing to military power, the aircraft continues to accelerate in the climb. Aircraft heading is straight north, as we are bound for the airspace called "GD North," north of Dallas/Fort Worth and east of Sheppard Air Force Base, straddling the Red River. Because of commercial air traffic in the area, we climb in stages under the positive control of Fort Worth Center. This gives the back-seater an opportunity to practice flying the way Neil recommends. That is, to fly the airplane with throttle, HUD (head-up display), and sidestick controller.

The aircraft is totally stable in holding the required heading. Leveling off at 17,000 feet, we try a roll to the left. A slight leftward pressure on the sidestick begins the roll; an equally light pressure to the right reverses it and returns the aircraft to straight and level flight.

The immediate reaction to the roll is a feeling of familiarity with the sidestick controller. It is above the right sill of the cockpit, positioned properly for a relaxed grip by the right hand. An armrest supports the right forearm comfortably during all flight regimes, including nine-G maneuvers. Having the sidestick out of the way on the right side gives one an uncluttered view of the displays on the center panel. Thus, they can extend much lower than in cockpits where the stick rises out of the floor between the pilot's legs. With this arrangement, left hand rests on the throttle, right hand on the sidestick, and the head is up and out of the cockpit.

A roll to the right builds more confidence, and now it is time to try faster rolls and practice turns to the headings required by Fort Worth Center. The pilot can command a full roll rate of 300 degrees per second. In doing a fast roll, one holds the nose on the horizon and applies

the pressure to left or right through the full 5/32-inch travel of the sidestick in that direction, and the horizon seemingly rotates rapidly around the nose.

Straight and level turns as well as climbing turns are easily mastered once one establishes the correct pitch attitude picture for the desired maneuver. Progression is rapid into vertical and steep maneuvers.

While his visitor is practicing these simple maneuvers, Neil has already activated the APG-66 radar and is acquiring and locking onto targets. They appear on the radar electro-optical (EO) display in both cockpits. With the range selection set at eighty nautical miles, the radar in the uplook mode picks up the airliners we can hear conversing with the center. Moving the cursor by the slew button on the throttle allows lock-on, and then the EO display provides altitude, azimuth, and velocity of the selected target. Flight tests of the APG-66 radar showed that it acquires targets the size of a fighter out to forty nautical miles, bombers at ranges twice that.

Now Fort Worth Center has cleared Dynam One to the flight envelope between 27,000 and 41,000 feet, with about seventy-five miles of north-south by twenty-five miles of east-west airspace. We level at 32,000 feet, and Neil reduces power while holding altitude as airspeed diminishes to 130 knots. His passenger then takes the controls again and discovers that the handling characteristics feel the same in slow flight as in climb and cruise—a pleasant product of the F-16's fly-by-wire control system. At this airspeed the angle of attack increases into the twenty-degree range, but there is only minor buffeting. Airspeed is reduced to 110 knots while holding the altitude, and the aircraft continues stable. (Audio tones notifying the pilot of low speed come on at 120 knots with gear up or fifteen degrees angle of attack gear down. They are pilot-cancelable.)

Now we are ready for high-speed maneuvers. Again, power is advanced to ninety percent, and the airspeed quickly builds to 330 knots in a climb at a rate of 5,000 feet per minute. We level at 38,000 feet and begin the supersonic run described at the beginning of the article. As mentioned, no unusual sensations

and no different control responses are felt, either passing through Mach 1.0 or during flight at Mach 1.3. While accelerating in afterburner, the fuel flow rate increases to 14,400 pounds per hour but drops back sharply to 4,000 pounds per hour in military power, and 2,400 pounds per hour in cruising.

At this altitude most of northern Texas and southern Oklahoma are visible. Turning around in the seat, one can see the tail and the speed brakes and look back to see the Dallas/Fort Worth area to the south. The sensation is not one of sitting inside an airplane, nor does it feel like being in a goldfish bowl. Rather, the sensation is like being astride a high-spirited horse, unaffected by the vagaries of winds and below-zero temperatures outside.

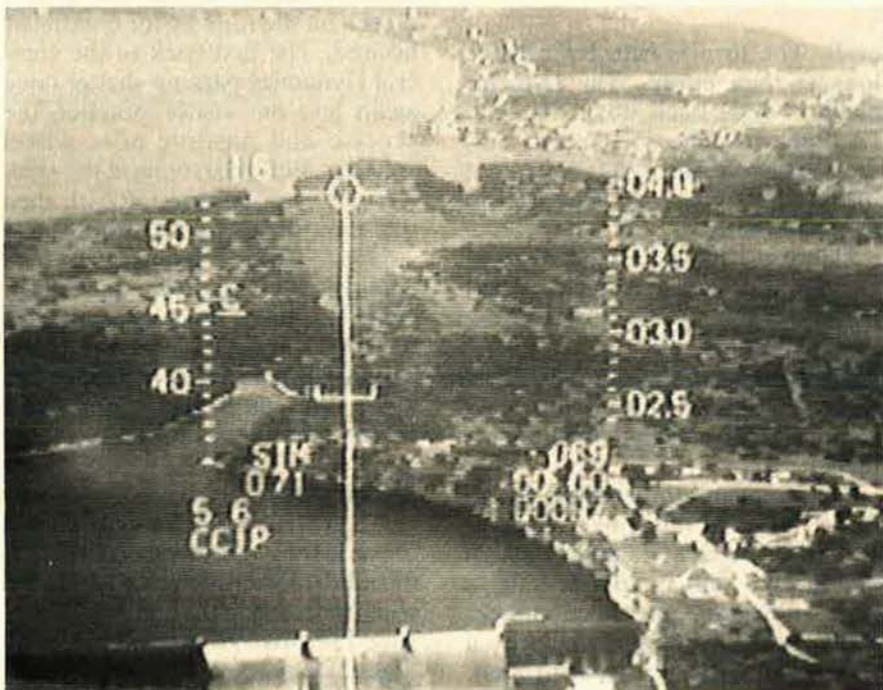
### Systems Practice

The aircraft continues to cruise supersonic in military power. Soon, power is reduced to decelerate through Mach 1.0. Again, no change in noise, buffet, G-forces, or control pressures occurs during the transonic transition. The aircraft is turned once again to the south, and we receive successive clearances from Center to another maneuver area west of Fort Worth where low-level characteristics will be evaluated. The time used in these successive descents allows practice with the radar electro-optical display and the stores management system (SMS).

For example, the display on the pilot's HUD can be called up on the electro-optical screen in the back seat. At the same time, the SMS information is shown on a separate screen just to the left of the EO display. Distinctive features of the SMS are the large size and brilliance of the letters and numbers it displays. This easy-to-read display reinforces the ability to fly the airplane by looking outside the cockpit instead of becoming fixated on dials and gauges inside. In the air-to-air mode, for instance, the status of AIM-9 Sidewinder missiles on the wingtips is shown in letters that are approximately half an inch high, but seem even larger because they are so easy to detect and comprehend quickly.

The APG-66 radar is now placed in an air-to-surface mode with





Top photo, the F-16/79 piloted by Neil Anderson with AFM editor in back seat approaches Possum Kingdom Dam (upper right). Lower photo shows wealth of information displayed on F-16/79 Head-Up Display (HUD) during this simulated attack. The weapon impact point is superimposed on the dam (lower center). The aircraft is flying at 450 knots at an altitude of 3,150 feet above the ground. Its predicted flight path extends upward from the dam (vertical line terminating in aircraft symbol that represents the ground impact point if the aircraft is not pulled up before the horizontal "pull-up bar" reaches the point). The aircraft is pulling 1.6 Gs at this moment; the maximum Gs sustained so far in this mission is five, as shown by the numeral above the CCIP at bottom left.

ground mapping selected. At twenty nautical miles, the distinctive pattern of Possum Kingdom Lake appears clearly on the EO screen.

Moving a cursor button on the throttle selects the point where Possum Kingdom Dam is located. Sliding a slide switch on the sidestick

expands the picture now centered on the spot designated by the cursor. Depressing the button again activates the Doppler Beam Sharpening feature, bringing up a remarkably clear and distinctive radar image of the lake and dam site. (A similar routine is undertaken later in the flight upon return to Carswell Air Force Base; when the DBS mode is used, the runways and taxiways are quite distinct.)

While the radar picture is showing the dam site, the HUD display is showing the continuously computed release point (CCRP) for an attack on the dam. It provides the flight path and time to target as well as the essential steering data. Once again, learning the manipulation of the avionics and weapon systems controls located on the throttle and sidestick is proving manageable after a few cycles. Since the aircraft is so stable, the pilot can concentrate ninety percent of his mental efforts and physical energies on carrying out the mission, whether air-to-air or air-to-surface.

Now it is time for slow flight at lower altitudes. Neil demonstrates this by activating the speed brakes. Airspeed drops to 130 knots. Condensation vortices appear along the forebody strakes on both sides of the forward fuselage. Those strakes, besides producing a stunning visual effect in condensing water vapor, provide improved air flow over the wings and horizontal tail. They improve lift and stability, and reduce drag and buffet intensity. (A slight buffeting was felt when the speed brakes grabbed the air, but that soon passed.)

Neil performs several maneuvers at speeds below 110 knots. During these maneuvers, the angle of attack often reaches but never exceeds twenty-seven degrees. The control system automatically prevents exceeding that angle of attack with no requirement for pilot monitoring. (The leading edge flaps that are so active automatically as angle of attack increases in subsonic flight are fixed in the clean, full up position in transonic and supersonic conditions.)

#### Formation, Then Pull Gs

The aircraft configuration is cleaned up, and we accelerate to normal cruise airspeed to fly for-





*F-16/79 drops a partial load of Mk-82 500-pound bombs during its certification and qualification flight test development program.*

mation with a T-38 also working in this maneuver area. Despite the difference in T-38 and F-16/79 control systems, formation flying is routine and relaxed through cruise, turns, and mild acrobatics. During this aerial ballet one realizes the true meaning of test-pilot flying skills, as the two aircraft turn, roll, perform wingovers, and climb like a pair of frisky falcons playing hooky from soaring school.

Now it is time for the high-G portion of the flight. Until now, in turns we have gone up to five Gs. This time Neil will demonstrate what the aircraft can do. Flying straight and level, he rolls into a left turn and begins to tighten the turn. The needle on the G-meter immediately passes four, then five, then six, and he asks how things are in the back seat. Things are fine; the G-suit is inflated and pressing hard on abdomen and legs. Now Neil tightens the turn, and the G-meter needle rises past seven, then to eight. Tunnel vision begins to occur as the needle continues inexorably upward. At 8.5 G with the G-suit fully inflated, tunnel vision narrows, and the needle continues upward to nine Gs. Neil calls out nine Gs and continues the turn at that rate. The turn radius at this time is well inside the turn of any other known fighter air-

craft. The turn is held for a while longer, then eased. The G-meter needle winds back down to eight Gs. It then declines to six, then four, and two as the aircraft is rolled out of the turn for the heading back to Carswell AFB.

Carswell Tower clears Dynam One for approach to Runway 17 and landing to follow a C-130 practicing touch-and-go landings. En route the last few miles, the ground-mapping radar is exercised once again, showing the Doppler Beam Sharpening mode.

Neil explains the landing procedures. The aircraft enters the pattern at Carswell at 2,000 feet above the ground and is trimmed for a thirteen-degree angle of attack. That angle of attack is maintained throughout the entire approach. Power management with the throttle ensures precise glide path control and altitude loss. From the back seat at thirteen degrees AOA, the entire approach path is clearly seen except for the last quarter mile when the front seat and Neil's helmet block the runway numbers. But switching the radar display to HUD brings up his front seat HUD display on the back seat EO display, and the approach can be followed until touchdown.

Airspeed on final approach is just

under 130 knots, allowing plenty of time for precise adjustment of the glide path. The main gear touches down at less than 130 knots, with the thirteen-degree AOA held for aerodynamic braking. On the runway the airspeed rapidly drops off to 100 knots. At that point the nose gear is lowered to the runway where nose-wheel steering and braking are immediately available if desired.

This is a touch-and-go landing, so another takeoff is made and the pattern reentered for the second, full-stop landing. During this pattern, the backseater is able to see and feel more clearly the simplicity of flying the F-16/79 for the landing approach. Incidentally, this is probably the only time a pilot will use the trim button on the sidestick controller. It is unnecessary in most other portions of the flight regime.

After touchdown, the aircraft is held in a thirteen-degree angle of attack attitude. When the aircraft slows to 100 knots, the nose gear is placed on the runway for braking as desired. The taxi back to the General Dynamics parking shelter once again lets the visitor practice the precise and positive nose-wheel steering. Before arriving at the shelter, ejection seats are safetied, then the aircraft is taxied inside and stopped. Neil completes the after-landing and shutdown checklists, stops the engine, and raises the canopy. He checks the Inertial Navigation System. After 1.2 hours of flight, the cumulative error in the INS is 0.6 nautical miles.

### Debriefing

Debriefing is productive, thanks to the detail and extent of the pre-flight briefing and conversations with Neil Anderson and Sterling V. Starr, Vice President, F-16/79, before the flight. Details of the flight are reviewed, as are explanations of how the F-16/79 program has developed. It is also a time for a visitor to ask questions and compare reactions with other pilots who have flown the F-16/79.

We have been airborne 1.2 hours. The time has included supersonic flight, intercepts, practice weapons deliveries, high-G maneuvers, and landing practice. We have also looked at several air-to-ground weapons delivery modes; among them the continuously computed



release point, the continuously computed impact point, strafe, dive-toss, and manual.

When the visitor comments that the aircraft handled stably in supersonic flight as well as at supersonic cruise, Neil Anderson notes, "With this airplane, you don't have to fly like a brain surgeon" in the supersonic region. The fly-by-wire system ensures that the pilot receives consistent flight control system feedbacks throughout the entire flight envelope.

In the other direction, the system ensures that the pilot's control inputs are handled properly for the particular speed, G-loading, and angle of attack the aircraft is experiencing. The roll rate and high G-tolerance mean that a pilot can roll the F-16/79 into a ninety-degree turn and pull five Gs within one second, with plenty of energy left to tighten the turn to nine Gs immediately. This maneuverability has led to a US Navy flight evaluation of the F-16/79 for its adversary aircraft force. In sixteen flights, the Navy evaluated the F-16/79 vs. the F-14 and F-4 in one-vs.-one and two-vs.-one engagements.

AIR FORCE Magazine talked with a Naval aviator who has flown the F-16/79 and asked what he likes about it compared with Navy fighters he has flown. He stressed the flight-control system and the fact that the aircraft controls feel the same throughout the entire flight envelope. He says the aircraft doesn't permit overstressing; it can take heavy stresses, and when those limits are reached (either G-forces or angle of attack) the aircraft will not go outside them. He said the air-



This side-by-side photo shows the eighteen-inch longer J79 engine compared with the F100 (background, on 79419). Tail cone fairing is also seen. Inside the airframe, different mounting points in the engine cavity accommodate the J79.

craft has plenty of power for those missions and holds its energy well. Back to the flight control system, he cited the advantages of not having to remove hands from the controls to change fighting roles. As mentioned above, the pilot can change from air-to-air fighting to air-to-surface attack without removing his hands from the controls.

Pilots from several foreign air forces have flown the F-16/79; Austria, Thailand, and Venezuela were among the first to perform evaluation flights. Since the F-16/79 is not a trainer, but rather a fighting aircraft, the foreign pilots flew evaluations from the front seat after an orientation flight in the aft cockpit.

A similar system would be recommended for air forces that purchase the F-16/79.

AIR FORCE Magazine understands that the first aircraft could be delivered about twenty-four months after the first order. The F-16/79 price is approximately \$1.5 million less than the F-16, expressed in 1981 dollars. By Fiscal Year 1985, the difference will widen as the USAF and allied Multinational Staged Improvement Plan (MSIP) for the F-16 begins to take effect. The F-16/79 design is "frozen" at mid-1981 USAF characteristics.

The major difference between the F-16/79 and the F-16 is use of the J79 engine instead of the F100. (About 11,000 J79 engines are in service worldwide.) Modifications include the installation of a new fixed ramp inlet to tailor the airflow to meet the J79's specific requirements. Minor changes include a tail cone fairing to accommodate the J79's additional eighteen-inch length. New mounting points in the existing engine cavity have been installed, and provisions have been made for additional fuselage thermal protection. The primary hardware change is a new engine transfer gear box. But aside from these changes, the F-16/79 is virtually identical to its F-16 brother. ■

### Basic Data, F-16/79

NOTE: The F-16/79 is available in two versions: the single-seat F-16/79A and the two-place F-16/79B. Both models are identical in size, and all systems are the same. The only difference is the aft cockpit added to the F-16/79B, which displaces approximately 500 kg of fuel.

	F-16/79A	F-16/79B
Weight empty (kg)	7,730	8,035
Internal fuel (kg)	3,162	2,624
Takeoff gross (kg)	11,633	11,389
Max. takeoff gross (kg)	17,010	17,010
Design load factor	9 G	9 G
Service life (hr)	8,000	8,000
Speed (Mach)	2+	2+
Total length (m)	15.09	15.09
Overall span (m)	10.01	10.01
Height (m)	5.01	5.01



The long-neglected state of US air defenses has finally reached the point of severe hazard, and the potential consequences have led to development of an . . .

# AIR DEFENSE M

BY EDGAR ULSAMER, SENIOR EDITOR (POLICY & TECHNOLOGY)

**T**HE Soviets have continued to modernize their bomber force with air-launched cruise missiles and the Backfire bomber. . . . The limited US warning and defense capabilities against this open-ended threat give the Soviet Union the potential to carry out a strike against the US without warning or to conduct unchallenged reconnaissance and postattack strikes following a missile exchange," Dr. Richard D. DeLauer, Under Secretary of Defense for Research and Engineering, recently warned Congress.

Gen. Lew Allen, Jr., USAF's Chief of Staff, acknowledged at the same time that a "precursor raid" by about sixty Soviet strategic bombers could essentially "blind" the United States and enable the Soviets to destroy key strategic targets in the US without warning and at will.

The problem, General Allen told the House Armed Services Committee during special hearings on the Air Defense Master Plan on July 22, is that the growing Soviet atmospheric threat "and the major gaps in our low-altitude and coastal surveillance coverage mean that existing North American surveillance systems cannot provide the required tactical warning to enable our National Command Authorities and strategic retaliatory force to take appropriate action."

Worse yet, the dwindling and outmoded force of interceptors—mainly 1950s vintage F-106s—"would not be able to conduct effective active air defense against low-level penetrators since the bulk of these air defense fighters lack the capability to counter enemy aircraft and cruise missiles ingressing at low altitudes."

The Soviets are capitalizing on these US deficiencies by deploying additional Backfire bombers at a rate of thirty new aircraft a year—with about 100 already in the inventory of Soviet Long-Range Aviation, along with about 150 older Bear and Bison strategic bombers—as well as, in the words of General Allen, by "evidently following our lead and developing a long-range cruise missile and a cruise missile carrier."

## The Long Decline of US Air Defenses

The detonation of the first Soviet nuclear weapon in 1949, combined with the advent of long-range bombers capable of delivering weapons of this type, led to a broad and relatively rapid buildup of North American air defenses. By the end of 1959, North American antibomber defenses had expanded from around a few vital areas to cover the whole continent and underwent frequent modernization.

About the time the North American air defense capability peaked in effectiveness and scope, a new and different threat emerged: Soviet intercontinental ballis-

tic missiles. It became clear in the early 1960s that the Soviet Union did not intend to expand substantially its fleet of long-range bombers. Rather, the principal threat to the continental US was perceived to come from Soviet ballistic missiles.

What limited improvements to existing air defenses occurred during the 1960s were generally confined to reducing their vulnerability to ballistic missile attack. At the same time, the number of radars, radar sites, control centers, manned interceptor squadrons, and SAM units was cut substantially because of this shift in priority, combined with budgetary limitations.

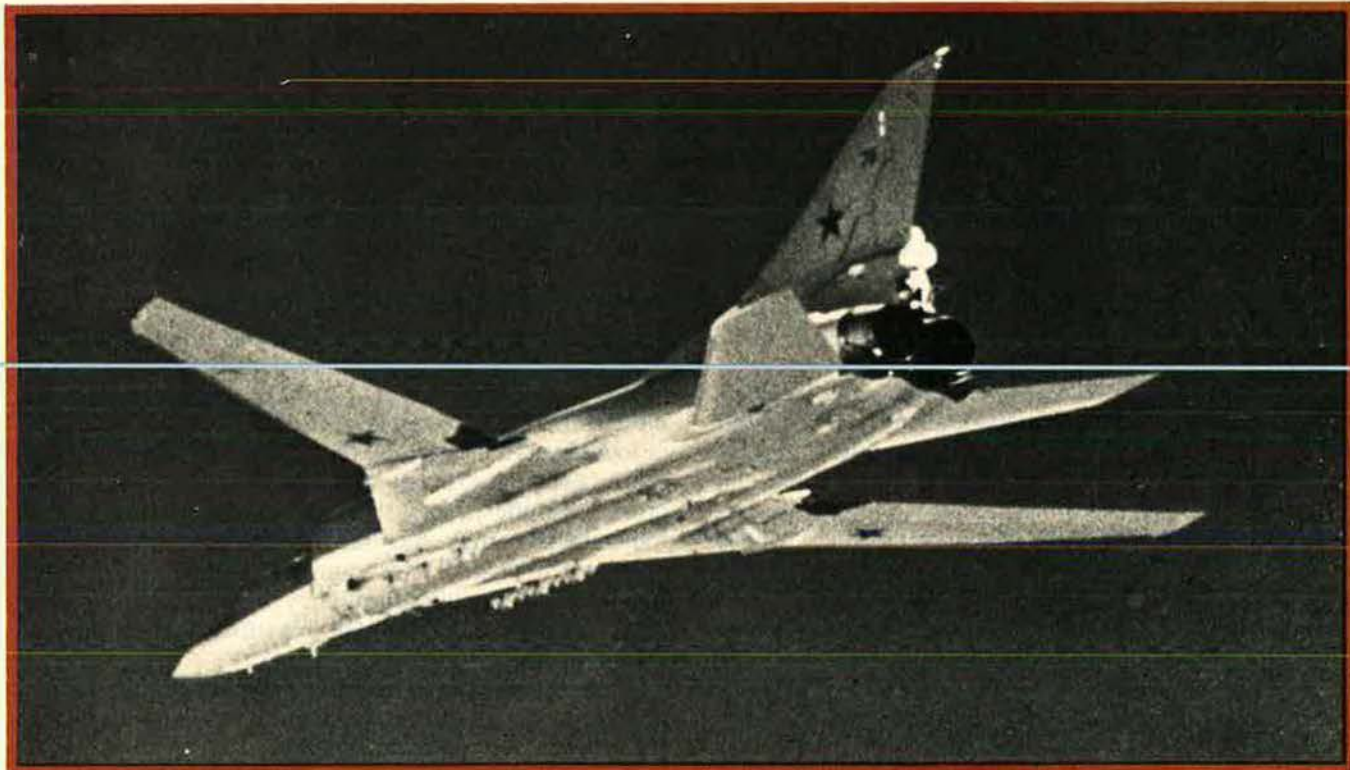
**"... about sixty Soviet bombers could essentially 'blind' the United States ..."**

Reductions in active air defenses continued through the 1970s as a result of the dramatic growth in the ballistic missile threat as well as the decision not to deploy antiballistic missile defenses. The ensuing, in part tenuous, logic held that because the Soviet ballistic missiles posed the predominant new threat to the US—and no defense against them appeared feasible—it would be senseless to continue a major effort in terms of bomber defenses. To the extent that fixed air defense installations would appear to be doomed in case of an ICBM and SLBM attack on the United States, this reasoning, of course, made sense.

Continuing and increasing deployment by the Soviets of air-refuelable Backfire bombers, evidence of Soviet efforts to develop a new generation of large strategic bombers, and renewed recognition of the importance of air-breathing strategic weapons to fighting protracted nuclear wars caused the US—in the waning days of the Carter Administration—to take a new, critical look at its atrophying air defense capabilities. The conclusion was inescapable. These deficiencies create an irresistible incentive for the Soviets to build up further their capabilities in the air-breathing arena because the US, by default, accords them a "free ride."



# STER PLAN



*The Soviet Long-Range Air Force and Navy both operate the Mach 2-plus Tu-22M Backfire bomber, many air-refuelable.*

## **Toward an Air Defense Master Plan**

In May of 1980, the Air Force, therefore, was requested by Congress to develop an Air Defense Master Plan, which was submitted to the Secretary of Defense in January of 1981. The major emphasis of this plan is to provide deterrence of a small precursor bomber or cruise missile attack by developing a credible capability to protect the US strategic retaliatory forces and vital command control and communications nodes from such a strike.

With adequate funding, General Allen told Congress, "the programs recommended in the Master Plan will provide timely, accurate atmospheric tactical warning to the National Command Authorities and contribute significantly to strategic deterrence by reducing the prospect that the Soviet Union could carry out a successful, surprise precursor bomber or cruise missile attack."

In the broadest sense, he added, this plan provides an air defense posture that is "flexible and viable enough to deter the Soviets from embarking on a dedicated intercontinental bomber and standoff missile program." The Air Force's draft of this Air Defense Master

Plan has been reviewed by members of the Joint Staff and OSD.

But as Dr. DeLauer told Congress, the Air Force plan had to be responsive to the guidance of the last Administration, which emphasized timely, accurate, and unambiguous tactical warning and attack assessment without stressing sufficiently the ability "to function through all phases of conflict." The predominant threat to North America remains the Soviet missile force, which can be employed to suppress some air defense installations, he told the House Armed Services Committee. The Defense Department's current concern, he said, is with countering the entire threat spectrum as effectively as possible.

Developing affordable air defenses with endurance at least equal to that of the Backfire presents a significant technical challenge, according to the DoD official, but "can be an important element in redressing the current strategic imbalance. Preattack warning capable of supporting survival actions or the execution of the SIOP [single integrated operational plan], in the event of an enemy attack, is essential and remains a part of our defense objective of deterring nuclear conflict, but



it is not sufficient. Our strategic forces should be capable of supporting flexible responses and a protracted conflict if required."

These considerations and policy changes prompted current attempts to expand the Air Force Master Plan by incorporating these additional requirements and examining several new alternatives. An initial version of this revised plan is scheduled to be presented to Congress—following coordination with Canada—sometime this fall, according to Dr. DeLauer.

Earlier this year, he said, a joint US-Canadian Air Defense Study was conducted that led to the issuance of a joint air defense policy statement at the time of President Reagan's visit to Canada in March.

The first major initiative germinated by the nascent Master Plan is the modernization of the warning and surveillance system to provide clear indication of an attack involving Soviet atmospheric forces. The coastal approaches from the east and west will be covered by two large OTH-B (over-the-horizon backscatter) radars. Several options are being considered for improved surveillance of the northern quadrant. They include upgrading and gap-filling the Distant Early Warning (DEW) Line; development of a north-looking OTH-B; and development of space-based radar.

Lt. Gen. James V. Hartinger, Commander in Chief of the North American Aerospace Defense Command and the Aerospace Defense Command, told Congress that current systems are limited in range to about 200 miles and "can see aircraft at medium to high altitudes. At low altitudes, there are miles of coastline where bombers can penetrate our airspace and, once inside, roam freely, since we have no interior radars."

A decision to put OTH-B into production, known as a Defense Systems Acquisition Review Council or DSARC II action, is scheduled for October 1981, according to Dr. DeLauer. A favorable DSARC II, General Hartinger added, would lead to deployment of two OTH-B radars covering both coasts by FY '86 at a cost of about \$1 billion.

The Air Force has just completed a year of testing of an experimental OTH-B site in Maine. Although analysis of the data obtained during the test is not yet complete, Dr. DeLauer said, "it appears that the system performed as well or better than predicted in nearly all aspects." During the recent testing of the system, OTH-B detected a KC-135 target aircraft at a distance of more than 900 nautical miles from the site.

Tracking data generated by the experimental OTH-B facility was fed to the 22d NORAD Region at North Bay, Canada, which vectored F-15s toward the target. General Hartinger told Congress that "the F-15s with their large radar search volume . . . intercepted the KC-135 at approximately 600 nautical miles from the OTH-B site, indicating the type of performance we can have by employing the F-15 interceptor force with an early warning system like OTH-B. The linkage function performed by the 22d NORAD Region could, of course, be provided by an AWACS—plus the AWACS could provide precise intercept control when the target is within range."

The CONUS OTH-B radar program began with a DSARC IB in 1974. After extensive studies, OSD authorized development of a prototype system. The sys-

tem uses over-the-horizon backscatter radar technique for aircraft detection and tracking. The radar signals are transmitted around the earth's curvature by refraction and reflection of the signal off the ionosphere. Target refraction and reflection of the signal (backscatter) are returned to the receiver by the same processes. The propagation path permits detection of targets well beyond the horizon and, therefore, beyond the detection capabilities of ground-based, line-of-sight radars.

One of the critical challenges associated with OTH-B is the system's ability to operate in the presence of auroral activity, the so-called Northern Lights. While there is no easy solution to this problem, it is likely that random periods of reduced performance of this type along the northern edge of the coastal fans can't be exploited strategically by the Soviets. The reason is that there is no way for the Soviets to predict if, when, and for how long an occurrence of Northern Lights will degrade the far north performance. The Air Force is considering three advanced technologies to solve the auroral problem: space-based radar, advanced microwave systems, or a north-looking OTH-B whose backscatter occurs south of the auroral zone.

OTH-B is expected to be adequately effective against raids involving air- or sea-launched cruise missiles. There is also reasonable expectation that the system will prove moderately effective against potential Soviet "Stealth" or low-observable aircraft. This sanguine outlook is based on the fact that OTH-B looks down on penetrating aircraft, meaning it sees the biggest and flattest part of the vehicle rather than the frontal area where radar cross sections are easier to minimize. Further, OTH-B functions in the high-frequency band where it is far more difficult to mask radar signatures than in the microwave area.

A southern-looking OTH-B may eventually be deployed to cover the approaches from Cuba and elsewhere within a southeasterly arc.

Because of the uncertainty of OTH-B's ability to provide polar coverage—in the face of auroral effects—General Hartinger told the House Armed Services Committee that an improved DEW Line appears to offer the most promising near-term solution.

### **The Joint Surveillance System**

The Distant Early Warning Line was designed in the 1950s to provide long-range early warning of medium- and high-altitude bomber attacks. It has gaps in coverage at low altitudes and is becoming expensive to maintain because of its age. The Air Force is evaluating means to modernize and improve the DEW Line.

To improve the capability of bomber warning systems and substantially reduce operating costs, USAF developed minimally manned, technically improved long-range radars to be located in Alaska. This system, called Seek Igloo, replaces obsolescent radars at thirteen Alaskan Air Command sites with highly reliable equipment.

Seek Igloo is linked closely to the Joint Surveillance System (JSS); it performs peacetime surveillance as the latter's Alaskan component. The system will replace the aging and uneconomical SAGE network. JSS is to consist of forty-six radar sites in the CONUS, in addition to the Alaskan Seek Igloo and Canadian radar





USAF's F-106A Delta Dart continues to serve with the active-duty force and with Air National Guard units.

sites. Information from the system's civilian and military radars feeds into seven ROCCs (Region Operations Control Centers), where data processing, display, and command and control functions are carried out.

If, in the case of an attack by strategic air-breathing weapons, the centers are put out of commission, the command and control function would then be handed over to E-3A AWACS aircraft.

### The Need for AWACS

Linchpin of the survivable North American airspace surveillance and control master plan, General Allen said, is the E-3A Airborne Warning and Control System, or AWACS. He stressed that "the currently programmed AWACS forces must be expanded to satisfy both worldwide and air defense requirements." This entails increasing the scheduled buy of thirty-four aircraft to about fifty-four units, assuming that the needed funds can be found within the Air Force budget. For the moment, he intimated, the Air Force lacks the funds to purchase the additional number of E-3As required for optimal CONUS air defense. Dr. DeLauer added that the problem might be eased if Japan and other countries buy AWACS aircraft of their own, thus providing the prospect of "augmentation" of the US E-3As in time of crisis or war.

### The Designated Force Concept

The current NORAD interceptor force, according to General Hartinger, is made up of ten F-106 squadrons, two F-101 squadrons, four F-4 squadrons, and three Canadian CF-101 squadrons. Ten squadrons belong to the Air National Guard. NORAD mans thirty-two alert

locations on a twenty-four-hour-a-day basis. There are no surface-to-air missiles in the command's inventory at this time. (A special panel of the Defense Science Board studying the woeful state of North American air defenses recently recommended, however, the deployment of improved Hawk as well as Patriot missiles for CONUS defense.)

The cost-effective way of shoring up the moribund active CONUS air defenses, the Air Force determined, is through the "designated force concept." That concept, General Allen testified, revolves around "a small core of NORAD assigned forces [being] augmented with the active CONUS-based general-purpose forces. For a given expenditure, this concept maximizes our capability to defend against a Soviet precursor raid. In addition, those forces can be deployed worldwide if the necessity arises."

This concept calls for the conversion of the F-4 squadron in Alaska and the five active-duty F-106 squadrons to F-15s. Under the currently envisioned schedule, General Hartinger said, the first active-duty F-15 squadron is to be phased in next year, and all five squadrons are to be operational by 1986. The first two F-15 squadrons, one on the east coast and the other on the west, will do double duty, the NORAD CINC told Congress, by performing both the CONUS air defense and the ASAT (antisatellite weapon launch) missions. Canada has joined the US modernization program by replacing the CF-101s with modern CF-18s.

While there is as yet no firm timetable for modernizing the aircraft operated by the ten Air National Guard squadrons, General Allen told Congress that eventually these units would be furnished F-15s, a new air defense version of the F-16, or F-4s. General Hartinger's testimony left little doubt about the Air Force's preference for the F-15, however, when he referred to that aircraft as the "key element in our modernization efforts . . . with its large radar search volume, its look-down/shoot-down capability, and extended range, [it] is the last link in providing an effective air defense system."

The House Armed Services Committee's hearings on the Air Defense Master Plan indicated Congress's receptive mood toward revitalizing CONUS air defenses. As Rep. Ike Skelton (D-Mo.), who requested the hearings, asserted, the urgency of rebuilding strategic air defenses "must be addressed by this Congress and decisions made very soon. It is my belief that most Americans now reject the idea of the mutual assured destruction [MAD] theory. MAD is part of the reason why we began to dismantle our defensive systems such as air defense and civil defense. A rejection of MAD means we can start renovating our defensive strategies. America's air defense system must be at the front of the line for improvements when Congress agrees to begin rebuilding systems we weakened in the 1960s."

In a subsequent letter to Defense Secretary Caspar Weinberger, Representative Skelton stressed that plans for an aerially launched MX provide added impetus for beefed-up CONUS air defenses. Should such a system be adopted, he wrote Secretary Weinberger, "our country will need an air defense system that is absolutely foolproof. Otherwise our planes [carrying MX] would be sitting ducks." It would be difficult to argue with this assertion. ■





Chief Andrews: "Show me a dormitory with lots of problems and I'll show you a commander and a first sergeant who aren't interested in their people."

As he begins his tour as the seventh Chief Master Sergeant of the Air Force, Arthur L. "Bud" Andrews sets out for AIR FORCE Magazine readers his views of the tasks ahead. Top priority is to . . .

## Get Back to Basics and the Mission

BY SMSGT. GRACE BLANCETT, USAF

**N**EWLY appointed Chief Master Sergeant of the Air Force Arthur L. "Bud" Andrews thinks it's time for blue-suiters to "get back to basics and back to the mission."

The forty-seven-year-old Chief will rely on twenty-seven years of experience as a security policeman, first sergeant, and senior enlisted advisor in his job of advising the Air Force Secretary and the Chief of Staff on matters concerning the welfare, management, and progress of the enlisted force. He is the seventh (*see box*) to wear the laurel-wreathed chevrons and insignia of the Chief Master Sergeant of the Air Force.

Chief Andrews concedes that he has already found the hectic pace of his new position to be "mindboggling," though he relishes the rigors and responsibilities of his new duties and admits that he had been "hoping and working for a shot at this job" since 1967.

One big hurdle Chief Andrews foresees in his drive to get the Air Force back to the basics and the mission is to get "Air Force people thinking *we* instead of *me, me, me*. We've talked about pay and compensation for the last two years. Military leaders have sounded their concerns and frustrations to Congress about pay, retention, and other quality-of-life issues. Now let's talk about how we're supposed to dress, how we're supposed to act and react toward subordinates and superiors, and how we're supposed to do our jobs."

He added that some Air Force members "need to clean up their act" and also clean up their uniforms. Sloppiness exists "from the top of the flagpole to the bottom," and he feels that the problem persists because supervisors "have closed their eyes to it."

Chief Andrews cites also a problem in attitude—for instance, those airmen who duck into buildings to escape retreat ceremonies. "I'll wager some of the folks who huddle in doorways waiting until the flag is lowered



got downright hostile when the Iranians carried out their trash in the American flag," he said, pointing out that both acts betray a lack of proper respect.

### Years of Experience

Chief Andrews was born on March 9, 1934, in Boston, Mass., where he grew up and attended school. He enlisted in the Air Force in January 1953, and his first assignment was to Keesler AFB, Miss., where he had a short tour before duty at Sheppard AFB, Tex., and in North Africa. He was at Travis AFB, Calif., in January 1957, when he decided to return to civilian life.

But in April 1958 he reenlisted and received duty at Homestead AFB, Fla., and Naha AB on Okinawa. He returned to the States eighteen months later and was assigned to Shaw AFB, S. C., as an air police investigator.

After another tour on Okinawa (this time at Kadena AB) he was assigned in April 1965 to Tyndall AFB, Fla., and served as NCOIC, Law Enforcement Administration Section. He was later appointed as NCOIC of Protocol, and then crosstrained into the first sergeant's field.

His first assignment as a first sergeant was with the 4576th Transportation Squadron at Tyndall AFB, Fla., from which he was assigned for a tour in Thailand. In December 1968 he returned to Defense Language Institute West Coast in Monterey, Calif. Two years later he was back in Southeast Asia at Cam Ranh Bay, South Vietnam.

Shortly after Chief Andrews returned from Vietnam, he attended the Senior NCO Academy at Gunter AFS, Ala. Upon completing the school he was assigned to Hickam AFB, Hawaii, where he was promoted to Chief Master Sergeant in April 1975.

### Senior Enlisted Advisor

After serving with the Headquarters Squadron Section at Hanscom AFB, Mass., as the first sergeant, he was selected in June 1977 for the position of Senior Enlisted Advisor to the Commander of Electronic Systems Division at Hanscom.

After that, Chief Andrews became the Senior Enlisted Advisor to the Commander, Air Force Systems Command, Andrews AFB, Md. He was selected for that position in May 1978, and served in that capacity until assuming the post of Chief Master Sergeant of the Air Force on August 1 of this year.

Chief Andrews's awards and decorations include the Bronze Star Medal with one oak leaf cluster, the Meritorious Service Medal with one oak leaf cluster, the Joint Service Commendation Medal, the Air Force

*SMSgt. Grace Blancett is a public affairs superintendent and serves as the Washington Bureau Chief of the European edition of The Stars and Stripes. A graduate of the Air Force Senior NCO Academy, Sergeant Blancett has served in Turkey, Taiwan, Japan, and Germany. She is a former Master Military Training Instructor.*

Commendation Medal with two oak leaf clusters, and the Humanitarian Service Medal.

Chief Andrews is married to the former Shirley Riggs of Panama City, Fla. She is a graduate of Troy State College in Alabama and the Army School of Physical Therapy. She is presently the coordinator of Rehabilitation Services with the Visiting Nurse Association of Washington, D. C. They have two children—Michael, age seventeen, and Angela, age sixteen.

### Many Challenges

Chief Andrews's twenty-seven years with the Air Force have provided him with many challenges during his career, and he believes that, for all airmen, accepting and meeting those challenges is part of getting back to the mission. But he betrays a concern that "lots of our senior noncommissioned officers don't have challenging jobs." The Chief allows that some of the blame for that falls on "the system," but adds that "some of our people don't want any challenges and are satisfied with 8:00-to-5:00 jobs." In any walk of life, he says, "you've got those who are just filling the squares, and we've got some people who are on the ROAD program [Retired On Active Duty]."

The new Chief Master Sergeant of the Air Force says he intends to build on predecessor CMSAF James M. McCoy's efforts to improve life for Air Force families. A family man himself, he is well aware of the stresses on family life caused by military service. "It's especially rough for that guy or gal with a family who has to moonlight to pay the bills," he said.

Chief Andrews says also that he understands the pressures faced by first-termers when trying to decide whether to raise their hands again, or get out. After serving for four years as a security policeman he "ran out of the Air Force, disenchanted," only to slip back into uniform fourteen months later. His time on the outside, he said, though peppered with pay raises, proved a "measly manner of existence," lacking any challenge.

But twelve years as a first sergeant, which he calls "the closest thing to perpetual motion," provided all the challenge he needed and a laboratory for learning about people. The condition of unit morale is generally a reliable barometer of a first sergeant's effectiveness, he contends. "Show me a dormitory with lots of problems and I'll show you a commander and a first sergeant who aren't interested in their people."

Despite problems facing the Air Force, the 1980s should be exciting, fulfilling times for blue-suiters, Chief Andrews maintains. "But we need to stop accenting the negative and eliminating the positive," he warns.

"We're getting good, solid citizens in the Air Force, and the American public once again appreciates our efforts and sacrifices.

"And that light at the end of the tunnel? I don't believe it's an oncoming train!" ■

#### Chief Master Sergeants of the Air Force

CMSAF Paul W. Airey	Apr. 3, 1967	Aug. 1, 1969
CMSAF Donald L. Harlow	Aug. 1, 1969	Oct. 1, 1971
CMSAF Richard D. Kisling	Oct. 1, 1971	Oct. 1, 1973
CMSAF Thomas N. Barnes	Oct. 1, 1973	Aug. 1, 1977
CMSAF Robert D. Gaylor	Aug. 1, 1977	Aug. 1, 1979
CMSAF James M. McCoy	Aug. 1, 1979	Aug. 1, 1981
CMSAF Arthur L. "Bud" Andrews	Aug. 1, 1981	



# AIRMAN'S BOOKSHELF

## Kin of Kings and Queens

*Mountbatten: A Biography*, by Richard Hough. Random House, Inc., New York, N. Y., 1981. 302 pages. \$16.95.

The story of Lord Louis Mountbatten, kin of kings and queens, is a story of this century. He was born at its beginning, in 1900, and his life—and death in 1979 at the hands of politically motivated assassins—accurately reflected the times.

These times—the somewhat out-of-focus early part of the century, the demarcation between old and new that was World War I, the jazz age of the twenties and depression of the thirties, the truly global upheaval of World War II, the postwar period that saw the British empire contract, even the increasing violence around the world as exemplified by the "Irish problem" that finally killed him—all of these Mountbatten was a part of and in many ways influenced.

Mountbatten was born the great-grandson of Queen Victoria, his line extending back to Charlemagne. His father, Prince Louis of Battenberg, was German by birth and an adoptive Englishman who rose to be First Sea Lord, the professional head of the Royal Navy. All his life, Mountbatten attempted to pattern his career on that of his father.

The book does an excellent job of detailing Mountbatten's complex nature—brilliant, driven, egotistical, and compassionate. Born to royalty and in royal company—he was the great uncle of the present Prince Charles—his bearing reflected his heritage.

Mountbatten bore the mark of a truly great man in his ability to inspire those who served under him to uncommon feats, due in large measure to his genuine concern for their well-being, his uncanny ability to remember names, places, and events, and his air of invincibility.

He certainly conquered his world. An intimate of the shapers of history, especially of Winston Churchill, Mountbatten rose rapidly during World War II. After some genuinely

heroic adventures during the early part of that war, at the early age of forty-three he was named Supreme Allied Commander of the Southeast Asia Command with rank of Acting Admiral and courtesy ranks of both General and Air Marshal. As a consequence, he commanded Allied and British officers many years his senior in both rank and age. The book does an exceptional job of outlining his role in this demanding job and the international consequences of Mountbatten's decisions.

In the postwar revamping of peoples and land, Mountbatten again played an important part, in the process incurring perhaps the darkest blot on his reputation as he hastened the exit of partitioned India from the British Commonwealth. Still, as the author notes: "But given that the transfer of power had to be accomplished swiftly and with the least possible regard for the long-term consequences for India and every regard for the short-term benefits for a harassed and near-bankrupt nation . . . there was *no one* but Mountbatten available who could do the job. . . ."

At the age of fifty-four, Mountbatten finally achieved his long-sought personal goal. As Churchill, once again Prime Minister, had done for Mountbatten's father before him, he now named Mountbatten First Sea Lord. The author tells us: "He had arranged to use his father's old office, his father's old desk, with a portrait of his father behind him and a bust of his father standing on a pedestal outside the door."

The book follows Mountbatten to the end of his life. Attention is given to his role as Chief of Defence Staff, where he set in motion plans for integration of all three services, a move on which the jury is still out. Then, on to retirement, where, in his own words, he became "an odd-job man" serving the crown.

The author is uniquely qualified for his biographical task, having previously written a biography of Mountbatten's parents and having enjoyed a long and close association with

Mountbatten. He perhaps best predicts the final historical judgment on Mountbatten when he says: ". . . his inspiration to achievement was greater than his actual achievement. His power to lift spirits, to bring out the best in people, has been experienced by thousands, and is undeniable. The aura of greatness around him never failed to inspire. . . ."

*Mountbatten* is a fascinating book about a fascinating man.

—Reviewed by James A. McDonnell, Jr., *Military Relations Editor*.

## History of the Comintern

*On a Field of Red: The Communist International and the Coming of World War II*, by Anthony Cave Brown and Charles B. MacDonald. G. P. Putnam's Sons, New York, N. Y., 1981. 718 pages with bibliography, notes, and index. \$19.95.

The thesis of this book, written by British foreign correspondent Anthony Cave Brown and the former Deputy Chief of the US Army's historical office, Charles MacDonald, is that the cold war began not after World War II, but with Lenin's formation of the Communist International, or Comintern, in January 1919. Their prime sources are recently declassified materials from the AEC; US Naval Intelligence; the State Department; the FBI and CIA; Her Majesty's Stationery Office; the papers of William J. Donovan, first chief of the OSS, that are not yet open to the public; and US Army Military Intelligence documents not previously used for publication.

The authors recount in amazing detail the subversive and espionage activities of the Comintern in the US, Great Britain, and Germany, with essential side excursions into Soviet operations in France, Mexico, Japan, and Spain. The chapters dealing with the Russian Revolution and the ensuing struggle between Trotsky and Stalin for power and control of the Comintern after Lenin's death in 1924



are an important part of the book. Trotsky had visualized the Comintern as an agency dedicated to world revolution and the establishment of proletarian democracies; Stalin saw it as an instrument of power for the Soviet state.

Much of the book is a series of vignettes about the people who made the Comintern work—many of whom were used and often liquidated by it when their usefulness ended. Under the skillful pens of the authors, the names that are familiar and unfamiliar become unique individuals—the dedicated and the opportunistic, the idealists and the realists, the gentle and the brutal, the naive and the knowing. These vignettes are skillfully woven together in an intricate pattern that rivals the best of the spy novels.

From its crude and often awkward early attempts to promote revolution outside the USSR, the Comintern grew into a highly professional organization. Its skill—and patience—are apparent in the account of Trotsky's murder in Mexico on August 20, 1940.

Stalin's ruthless use of the Comintern as an organ of the Soviet state is typified by the USSR's role in the Spanish Civil War. After Hitler and Mussolini began supporting Franco's Falange with troops and equipment, Stalin decided reluctantly that the USSR must aid the Republican leftists—but only on a cash-and-carry basis.

No Soviet citizen was allowed to join the International Brigade organized by the Comintern. Key posts in the Spanish government were taken over by Soviet advisors; the head of the Madrid government, Largo Caballero, was forced to resign in favor of a Communist agent; Spain's gold reserves were moved to Moscow "for safekeeping," never to return; and the non-Communist leftists were liquidated in a blood bath.

When Stalin no longer felt able to match the support Germany and Italy were giving the Falange, he lost interest, withdrew support to the Republicans, called home his agents in Spain, and, as a reward, executed or imprisoned most of them.

Officially, the Comintern was dissolved in May 1943, in deference to the USSR's wartime alliance with the West. Its operations were continued by the NKVD, with the prime target shifting from revolution to infiltration of the US-British-Canadian project to develop an atomic weapon. That campaign of espionage and treachery is covered in detail.

*On a Field of Red* is one book worth a rather high price. Once you have

opened its cover, you will put it down only because of its length.

—Reviewed by John L. Frisbee, former Editor, AIR FORCE Magazine.

### New Books in Brief

*The Age of the Biplane*, by Chaz Bowyer. Camel, Nieuport, Fokker, Albatros, Curtiss, Boeing, Gloster—these names hark back to an era when most airplanes had two or more wings, fabric skins, and open cockpits. For those who have succumbed to the allure of the days of the biplane, this book should prove a delight. Illustrated with 250 photographs, including color photos of restored classics, *The Age of the Biplane* is an unashamed paean to a time when men took to the air in "real" airplanes for "real" flying. With index and bibliography. Prentice-Hall, Inc., Englewood Cliffs, N. J. 07632, 1981. 192 pages. \$24.95.

*The Armed Forces of the USSR*, by Harriet Fast Scott and William F. Scott. This revised and updated second edition of the Scotts' 1979 publication, which AIR FORCE Magazine (August '79, p. 91) hailed as "the first real textbook on the Soviet military," provides current names and other related data within an unchanged format. The book, based almost exclusively on primary Soviet sources, remains the best extant analysis of the development and organization of the Soviet military. An introduction to the second edition has been added by the authors "to indicate possible implications of the Soviet doctrinal shift toward increased attention to the projection of military power" in the wake of the invasion of Afghanistan. With tables, illustrations, appendices, bibliography, and indices. Westview Press, 5500 Central Ave., Boulder, Colo. 80301, 1981. 447 pages. Hard cover \$27.50; paper \$12.50.

*Homebuilt Aircraft*, by David B. Thurston. If your dreams of building your own aircraft are becoming more serious each day, then your first step toward fulfilling your fantasy should be reading *Homebuilt Aircraft*. Author Thurston, an aircraft designer, covers practically every imaginable aspect of homebuilts—from selecting a design to insuring and maintaining your finished product. The easy-to-follow narrative is divided into four sections: the homebuilt movement, aircraft available, materials and methods, and flying and maintenance considerations. There are also many tables and illustrations, and a

section listing 105 different available designs. Index. McGraw-Hill Book Co., New York, N. Y., 1981. 210 pages. \$24.95.

*Reflections of Blue*, by Carol Knotts. Aficionados of aerobatic flying will certainly enjoy this pictorial history of the Navy's flight demonstration team, better known as the Blue Angels. More than 500 photos and text trace the history and development of the Angels, from the post-World War II days in the F6F-5 Hellcat to the present day with the A-4F Skyhawk. The book also includes a special eight-page color photo section, and is a companion volume to a similar pictorial history of USAF's Thunderbirds. Specialty Press, Box 426, 729 Prospect Ave., Osceola, Wis. 54020, second edition 1980. 160 pages. \$12.95.

*Space Technology*, by Kenneth Gatland et al. This book purports to be an encyclopedia of space technology. If one thinks of an encyclopedia as an alphabetical series of dry academic articles, this book is no encyclopedia. It is, however, a superbly illustrated and clearly written history of man's exploration of space, from its antecedents in the theories of Tsiolkovsky to the preparations for the flight of the Space Shuttle. Along the way the reader is provided detailed accounts of the space programs of various nations, with many charts and illustrations, including two eight-page foldouts showing launch vehicles and the Salyut-6 and Skylab stations. Of special interest is the authors' assessment of man's future in space—space colonies and factories, satellite solar power stations, moon bases, and star travel. A "Space Diary" lists in order the major events in the exploration of space. With a foreword by Arthur C. Clarke, and glossary and index. Harmony Books, New York, N. Y., 1981. 289 pages. \$24.95.

*The Vivid Air*, by Philip M. Flammer. An account of the famous Lafayette Escadrille of World War I, this immensely readable book is a welcome study that eschews glamorization for a clear and well-documented narrative. As the author contends, the story of the thirty-eight Americans who volunteered out of idealism to fight for France needs no embellishment, and he lets the facts speak for themselves. With illustrations, notes, bibliography, and index. The University of Georgia Press, Athens, Ga. 30602, 1981. 249 pages. \$17.50.

—Reviewed by Hugh Winkler, Associate Editor.



# Flexible Deployment of NATO-Based Aircraft

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

**T**HE Sixth Fleet's solution to its version of the Mediterranean fruit fly problem was impressively efficient. Unlike California's hapless Gov. Jerry Brown, the Navy did not temporize in the Gulf of Sidra. Presumably, Colonel Muammar Qaddafi has now concluded air combat is a more complicated affair than a passing engagement between camel drivers in the desert. Even so, we can still remain puzzled as to why Libya, with Mirages, MiG-21s, MiG-23s, and even MiG-25s, chose to take on the F-14s with two such marginal birds as the Su-22 Fitters.

The ineptitude of Libya's attack aside, however, the incident did bring into focus the fact that the Mediterranean, not many years ago an American lake for all practical military purposes, is becoming an uncertain and increasingly dangerous area just when we need it most.

The engagement in the Gulf of Sidra was, however badly conceived by the Libyans, a signal that there is more trouble ahead from that *nouveau riche* and misguided land. Libya has bought more in the way of modern weapons than its backward people can ever conceivably learn to use. As evidence of that, Soviets and the ubiquitous Palestinians are reportedly flying airplanes with Libyan Air Force markings, although the pilots who couldn't shoot straight in the Gulf of Sidra were apparently local boys.

Nevertheless, Libya has amassed a considerable arsenal, and we must assume Qaddafi has spent his money this way with some mischief to us in mind. One form the mischief might take would be a strengthening of his Soviet connection: base rights, for example, as an offset to our arrangement with Egypt. In any case, it seems clear the Soviets are working toward some North Afri-

can-Mideast cohesion as an answer to our initiatives in the oil region.

Across the water from Libya, and just a few minutes by air, is another potential source of trouble for our Mediterranean strategy. The Greek elections this October may have a profound effect on the future military situation in the Med. If Andreas Papandreou and his PASOK party come to power, and if he carries through on his campaign rhetoric, Greece will become an uncertain ally, maybe not even an ally at all. Papandreou, Berkeley graduate, Harvard professor, renounced American citizen, and decidedly leftist, is no friend of the United States. A Greece in his hands, and the polls give him a good chance of winning, will complicate life further for our Navy in the Med if, as Papandreou seems to intend, Crete's Souda Bay and other Greek bases are denied us.

The *Nimitz* made a clear and simple point last August: Whoever controls the air controls the Mediterranean. We cannot move Rapid Deployment Forces to the Mideast, or keep supply lines running to our friends there, unless we can control the Med. Not, that is, unless we settle for the tortuous route through the Pacific and Indian Oceans. There would seem to be a strong case for increasing our airpower in the Mediterranean region. Since our carriers are in short supply and overcommitted, the answer must lie in a reinforcement of land-based tactical air. Where to get it? From NATO's Central Region.

The commitment of air units to NATO has become written in stone tablets over the years, with the result that we now have some of our most modern and capable fighter squadrons tied down on vulnerable forward bases in Germany, pledged hostage to a somewhat mystical NATO strategy of flexible re-

sponse. Meanwhile, the danger flags are going up in the Med, an area, theoretically at least, of equal NATO interest, although the Alliance has always tended to regard the North African coast as off limits.

It is a nice conceit, but one that no longer makes sense. The Mediterranean is a passageway that must be kept free, and the same holds true for the air above it. The threat to that passageway is coming from Africa's north coast. Airpower, as the Navy has shown, is this era's way of dealing with Barbary pirates. It is also the way we will have to deal with more serious threats to our Mediterranean line of communication, a lesson both sides learned in World War II when an unsinkable carrier, the island of Malta, did so much to frustrate Hitler's plans.

For reasons that are unclear to me, the marvelous mobility and flexibility of land-based tactical airpower remain unexploited by NATO. The F-15s and F-16s of our air forces in Europe might just as well be their ancient forebears, P-47s and P-51s, for all the use that is made of their wide-ranging capability. Instead, they are simply forward-based aircraft rooted to advanced and targeted airfields. Meanwhile, the Mediterranean needs more airpower, whether shipborne or land-based makes little difference. Since carriers are a limited resource, and the Med is a NATO responsibility, a little redeployment of some land-based aircraft would seem to make sense. Besides, moving the bases farther away from the enemy border is in itself a good idea.

But the main point in this argument is simply a plea for recognition of what tactical air, supported by tankers and AWACS, is really capable of doing. It is a resource that has yet to be tapped. ■



# JANE'S

ALL THE WORLD'S AIRCRAFT SUPPLEMENT

OCTOBER 1981



Mil Mi-26 heavy-lift helicopter (two Lotarev D-136 turboshaft engines) (Tass)

**MIL**  
MIKHAIL L. MIL DESIGN BUREAU, USSR

#### MIL Mi-26

**NATO reporting name: Halo**

Design of the Mi-26 heavy-lift helicopter began in the early 1970s to meet the requirement for an aircraft of greater capability than the Mi-6 and Mi-10. Except for the four-engined twin-rotor Mi-12 (see 1977-78 *Jane's*), which did not progress beyond prototype testing, it is the heaviest helicopter yet flown anywhere in the world. Its rotor diameter

is smaller than that of the Mi-6 and Mi-10, but this is offset by the fact that the Mi-26 is the first helicopter to operate successfully with an eight-blade main rotor.

It has obvious military applications, with a payload and cargo hold very similar in size to those of a Lockheed C-130 Hercules transport aircraft. To meet also Soviet Ministry of Civil Aviation requirements, for operation in Siberia and northern swamp and tundra areas of the USSR, emphasis had to be placed on reliability, especially when operating into unprepared landing sites. According

to Mr Marat Tishchenko, General Designer in charge of the Mil bureau, this (plus, no doubt, the need to ensure torsional stiffness) explains why the main rotor blades have conventional steel spars.

Use of titanium for the rotor hub helped the Mil bureau to meet the official requirement of an empty weight only 50% of the aircraft's maximum permissible take-off weight. A further contribution to weight-saving resulted from the decision to design the main gearbox in-house. The end product offers an impressive power to weight ratio, despite the need to absorb an unprecedented input from the





Heavy vehicles boarding the Mi-26, which has a payload and cargo hold comparable in size to those of a C-130 (Tass)

two Lotarev D-136 turboshaft engines that power the Mi-26.

Representatives of the Mil bureau claimed at the 1981 Paris Air Show that the Mi-26 had already undergone two years of flight development, and that D-136 engines had amassed more than 13,000 hours of running on the test-bench and in the air. The Mi-26 (СССР-06141) exhibited at the Show had been flown from Moscow to Le Bourget by Mil's chief test pilot, G. R. Karapetyan, via Smolensk, Vilnius, Warsaw, Prague, and Frankfurt. It was stated to be one of several prototypes or pre-production examples then flying. With development completed, production was said to be imminent.

**TYPE:** Twin-turboshaft heavy transport helicopter.  
**ROTOR SYSTEM:** Eight-blade main rotor; five-blade tail rotor, mounted on starboard side of tail fin. Each main rotor blade consists of a one-piece tubular steel spar and 26 carbonfibre aerofoil-shape pockets of varying form, with internal ribs and stiffeners. Blades attached to titanium hub of unconventional design. Hydraulically-powered cyclic and collective pitch controls actuated by small parallel jacks, with redundant autopilot

and stability augmentation system inputs. Tail rotor blades made of carbonfibre. Leading-edges of main and tail rotor blades heated electrically for anti-icing.

**ROTOR DRIVE:** Conventional transmission. Main gearbox type VR-26, rated at 14,914 kW (20,000 hp), is fan-cooled, with air intake above rear of engine cowlings.

**FUSELAGE:** Conventional all-metal riveted semi-monocoque structure of pod and boom type, with clamshell rear loading doors and ramp. Flattened undersurface to tailboom.

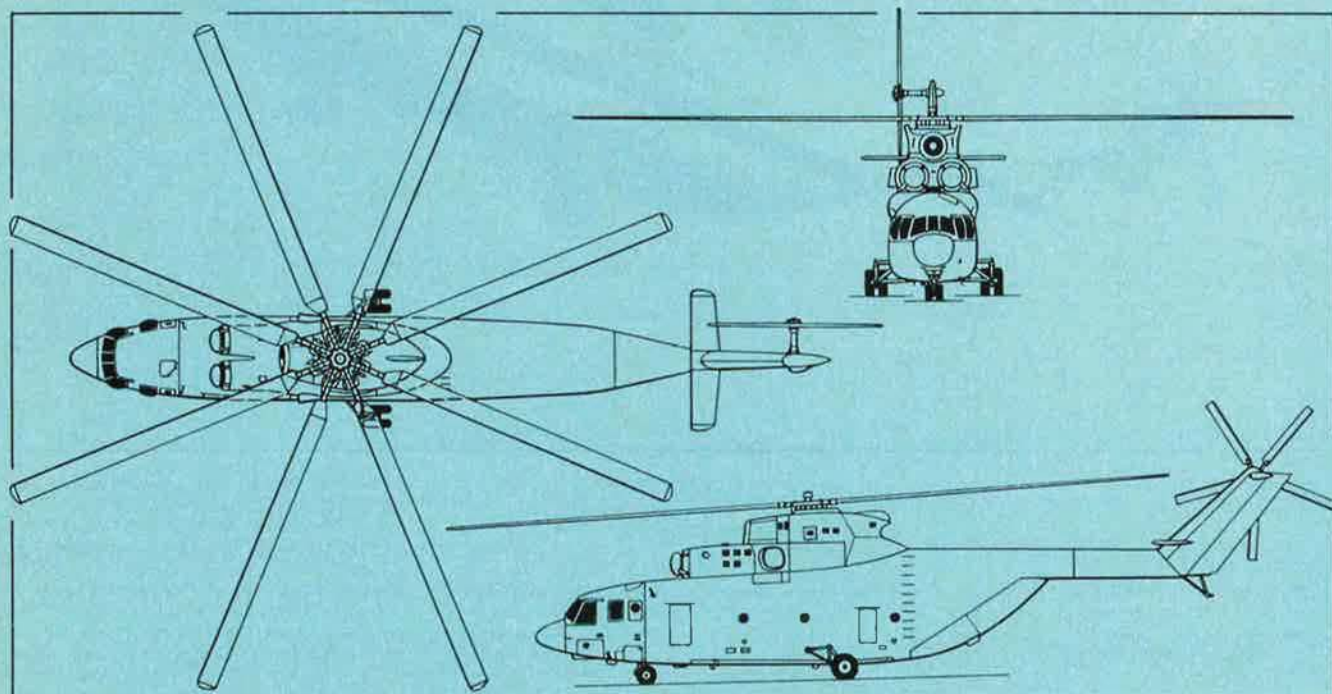
**TAIL UNIT:** Sweptback vertical stabiliser, carrying tail rotor, is offset to port. Adjustable-incidence horizontal stabiliser mounted on leading-edge of vertical stabiliser, a short distance above the tailboom.

**LANDING GEAR:** Non-retractable tricycle type, with twin wheels on each unit. Main-wheel tyres size 1,120 x 450. Retractable tailskid at end of tailboom to permit unrestricted approach to rear cargo doors. Length of main legs can be adjusted hydraulically to facilitate loading through rear doors and, possibly, to permit landing on a slope.

**POWER PLANT:** Two 8,500 kW (11,400 shp) Lotarev

D-136 free-turbine turboshaft engines, mounted side by side above cabin, forward of main rotor driveshaft. Air intakes designed to prevent foreign object ingestion, and provided with both electrical and bleed air anti-icing systems. System for synchronising the output of the engines and maintaining constant rotor rpm. If one engine fails, output of the other is increased to maximum automatically. Fuel in eight under-floor tanks, feeding into two supply tanks above engines, which permit gravity feed for a period in emergencies.

**ACCOMMODATION:** Crew of five, consisting of pilot (on port side) and co-pilot side by side, flight engineer behind pilot, navigator behind co-pilot on flight deck, and loadmaster in freight hold. About 20 tip-up seats along each side wall of hold. Four large blistered side windows on flight deck. Forward pair open slightly outward and rearward. Downward-hinged doors, with integral airstairs, at front of hold on port side, and on each side of hold aft of main landing gear units. Hold is loaded via a downward-hinged lower door, with integral folding ramp, and two clamshell upper doors which form rear wall of hold



Mil Mi-26 twin-turbine heavy transport helicopter (Pilot Press)





The blistered flight deck windows are shown clearly in this close-up of the Mi-26 taken at the recent Paris Air Show (Brian M. Service)

when closed. Doors are opened and closed hydraulically, with backup handpump for emergency use. Two electric winches on overhead rails, each with capacity of 2,500 kg (5,511 lb), enable loads to be transported along cabin. Flight deck and hold fully air-conditioned.

**AVIONICS AND EQUIPMENT:** All items necessary for day and night operations in all weathers are standard, including weather radar in the hinged (to starboard) nosecone. Doppler, map display, HSI, and automatic hover system. APU under flight deck. Attachment for sling loads in bottom of centre-fuselage.

**DIMENSIONS, EXTERNAL:**

Diameter of main rotor 32.00 m (105 ft 0 in)  
 Diameter of tail rotor 7.61 m (24 ft 11½ in)  
 Length of fuselage, excl tail rotor 33.727 m (110 ft 8 in)  
 Height to top of rotor head 8.055 m (26 ft 5¼ in)

Wheelbase 6.35 m (20 ft 9½ in)

**DIMENSIONS INTERNAL:**

**Freight hold:**  
 Length, ramp trailed 15.00 m (49 ft 2½ in)  
 Width 3.20 m (10 ft 6 in)  
 Height 3.15 m (10 ft 4 in)

**WEIGHTS:**

Weight empty 28,200 kg (62,170 lb)  
 Max payload, internal or external 20,000 kg (44,090 lb)  
 Normal T-O weight 49,500 kg (109,125 lb)  
 Max T-O weight 56,000 kg (123,450 lb)

**PERFORMANCE:**

Max level speed 159 knots (295 km/h; 183 mph)  
 Normal cruising speed 137 knots (255 km/h; 158 mph)  
 Service ceiling 4,500 m (14,760 ft)  
 Hovering ceiling OGE, ISA 1,800 m (5,900 ft)  
 Range with max fuel at max T-O weight, 5% reserves 432 nm (800 km; 497 miles)

**VALMET**

VALMET OY KUOREVEDEN TEHDAS: Head Office and Works: 35600 Halli, Finland

**VALMET PIK-23 TOWMASTER**

Designed by the students of Helsinki University Flying Club (PIK), the PIK-23 (known originally as the Suhino) is a side-by-side two-seat sporting, training, and glider-towing aircraft developed from the PIK-19 Muhinu (1975-76 *Jane's*). Two prototypes are being completed by Valmet, the first of which (OH-TOW) made its debut at the 1981 Paris Air Show and was scheduled to make its first flight in the Autumn of this year.

Many components of the PIK-23 are of composite construction. These are manufactured by PIK; final assembly and flight testing are undertaken by Valmet. Production aircraft are expected to be available from late 1982/early 1983. It is also planned to market the Towmaster in kit form for amateur construction.

**TYPE:** Two-seat towing, training, and club aircraft.  
**WINGS:** Cantilever low-wing monoplane, constructed in two parts. Wing section NACA 63.415 (modified). Constant chord. Dihedral from roots. Carbonfibre main spar. Glassfibre/epoxy/PVC foam sandwich structure.

**FUSELAGE:** Glassfibre/epoxy/PVC foam sandwich structure.

**TAIL UNIT:** Cantilever structure, with sweptback vertical and non-swept horizontal surfaces. Construction similar to that of wings. Balanced rudder and one-piece elevator. Tab in starboard half of elevator.

**Landing Gear:** Non-retractable tricycle type, with CFRP main-wheel legs and hydraulic brakes.

**POWER PLANT:** One 134 kW (180 hp) Avco Lycoming O-360-A4M flat-four engine, driving a Hoffman two-blade fixed-pitch propeller with spinner. Fuel tank in each wing, combined capacity 180 litres (39.5 Imp gallons). Overwing gravity refuelling point for each tank.

**ACCOMMODATION:** Two glassfibre seats side by side under rearward-sliding bubble canopy. Dual controls standard. Baggage compartment aft of seats.

**AVIONICS AND EQUIPMENT:** VFR avionics and towing hook standard. Panel has provision for full IFR equipment.

**DIMENSIONS, EXTERNAL:**

Wing span 10.00 m (32 ft 9¼ in)  
 Wing chord, constant 1.40 m (4 ft 7 in)  
 Wing aspect ratio 7.14  
 Length overall 7.10 m (23 ft 3½ in)



Mil Chief Test Pilot G. R. Karapetyan seen through a fisheye lens on the flight deck of the Mi-26 (Tass)



The student-designed PIK-23 Towmaster, to be produced by Valmet of Finland



Height overall	2.85 m (9 ft 4 1/4 in)
<b>AREAS:</b>	
Wings, gross	14.00 m <sup>2</sup> (150.69 sq ft)
Ailerons (total)	1.42 m <sup>2</sup> (15.28 sq ft)
Trailing-edge flaps (total)	1.46 m <sup>2</sup> (15.71 sq ft)
Fin	0.68 m <sup>2</sup> (7.32 sq ft)
Rudder	0.63 m <sup>2</sup> (6.78 sq ft)
Tailplane	1.76 m <sup>2</sup> (18.94 sq ft)
Elevator, incl tab	1.13 m <sup>2</sup> (12.16 sq ft)
<b>WEIGHTS AND LOADINGS:</b>	
Weight empty, equipped	560 kg (1,234 lb)
Baggage (max)	40 kg (88 lb)
Max T-O and landing weight:	
Utility	794 kg (1,750 lb)
Normal	870 kg (1,918 lb)
Max wing loading:	
Utility	56.7 kg/m <sup>2</sup> (11.6 lb/sq ft)
Normal	62.1 kg/m <sup>2</sup> (12.7 lb/sq ft)
Max power loading:	
Utility	5.9 kg/kW (9.7 lb/hp)
Normal	6.5 kg/kW (10.6 lb/hp)
<b>PERFORMANCE (estimated, at max T-O weight with propeller optimised for climb unless otherwise stated):</b>	
Never-exceed speed	151 knots (281 km/h; 174 mph)
Max level speed at S/L, propeller at cruise setting	135 knots (250 km/h; 155 mph)
Cruising speed (75% power) at S/L, propeller at cruise setting	121 knots (225 km/h; 140 mph)
Stalling speed:	
flaps up	47 knots (87 km/h; 54.5 mph)
flaps down	43 knots (79 km/h; 49.5 mph)
Max rate of climb at S/L	408 m (1,338 ft)/min
Rate of climb at S/L (75% power) with single-seat sailplane	228 m (748 ft)/min
T-O to 15 m (50 ft)	320 m (1,050 ft)
Landing run	150 m (492 ft)
Range with max fuel	502 nm (930 km; 578 miles)
Endurance	5 h

## DORNIER

DORNIER GmbH; Head Office: Postfach 1420, 7990 Friedrichshafen/Bodensee, German Federal Republic

### DORNIER Do 24TT

In late 1980 the Dornier company received from the Federal German BMFT (Ministry of Research and Technology) a contract covering a three-year development and flight test programme for the Do

24TT amphibian. This stems from the company's proposals during the late 1970s (see 1978-79 *Jane's*) to put into production an updated and amphibious version of the Dornier Do 24T flying-boat of the Second World War, under the designation Do 24/72. It was planned to install a power plant of three 1,193 kW (1,600 shp) Avco Lycoming T5321A turboprop engines, and provide retractable tricycle type landing gear, with twin wheels on each unit, to give amphibious capability. This aspect of Dornier's original plan is still current, except that the prototype aircraft, converted from an existing Do 24 flying-boat hull, will have three 839 kW (1,125 shp) Pratt & Whitney Aircraft of Canada PT6A-45 turboprop engines, and fixed tricycle type landing gear. These engines are to be mounted on a new wing, based on the company's advanced technology wing (Tragflügel Neuer Technologie: TNT) which was developed with support from the BMFT. The TNT has been flight tested on a Do 28 D-2 Skyservant testbed aircraft, and its first commercial application is on the new Dornier 228-100/200 light transports. Other features to be evaluated on this prototype include the corrosion resistance and suitability of new structural components, including hull skin panels of glassfibre, and machined wing skins.

The company has believed for some years that it should be possible to develop an economic amphibious aircraft for commercial or military use, and prior to gaining this BMFT contract had initiated in March 1979 definition of the Do 24TT project (the TT denotes Technologieträger: technology vehicle). It is anticipated that the first flight of the Do 24TT prototype will be made during 1982.

### DORNIER Do 24A

Under this designation, Dornier hopes to develop a new 30-seat ocean-going commercial/military amphibian. This will depend not only upon successful testing of the Do 24TT research prototype, but also on indications from market research that there would be sufficient interest to make the project economically viable. The company believes this may be forthcoming, since this amphibian should prove especially suitable for roles that include casualty evacuation, maritime surveillance, oceanographic research, passenger/cargo transport, SAR, and water bombing. It is envisaged that a prototype could be flown in 1985.

The Do 24A would be of the same general configuration as the Do 24TT, but incorporating an entirely new hull with improved aerodynamic and hydrodynamic characteristics. The sponsons would

be retained to provide stability on the water, but would include in their construction nacelles to house the main landing gear units. Proposed power plant consists of three 839 kW (1,125 shp) Pratt & Whitney Aircraft of Canada PT6A-50 turboprops, each driving a Hamilton Standard Type 24 PE-303 four-blade propeller. All available preliminary specification details follow:

#### DIMENSIONS, EXTERNAL:

Wing span	30.00 m (98 ft 5 in)
Length overall	23.40 m (76 ft 9 1/4 in)
Height overall: on ground	5.92 m (19 ft 5 in)
on water	5.05 m (16 ft 6 3/4 in)
Propeller diameter	3.435 m (11 ft 3 3/4 in)

#### DIMENSIONS, INTERNAL:

Cabin: Length	9.80 m (32 ft 1 3/4 in)
Max width	2.70 m (8 ft 10 1/4 in)
Max height	1.70 m (5 ft 7 in)

#### WEIGHTS (estimated):

Payload	3,000 kg (6,614 lb)
Normal T-O weight	16,000 kg (35,274 lb)
Overload T-O weight	17,000 kg (37,479 lb)
Max landing weight	15,000 kg (33,069 lb)

#### PERFORMANCE (estimated):

Max rate of climb at S/L	305 m (1,000 ft)/min
Rate of climb at S/L, one engine out	116 m (382 ft)/min
Service ceiling	5,955 m (19,540 ft)
T-O to 15 m (50 ft) on land	515 m (1,690 ft)
T-O run on water	291 m (955 ft)
Landing run on water	302 m (991 ft)
Max endurance with two engines operating, 10% fuel reserves	14 h 48 min

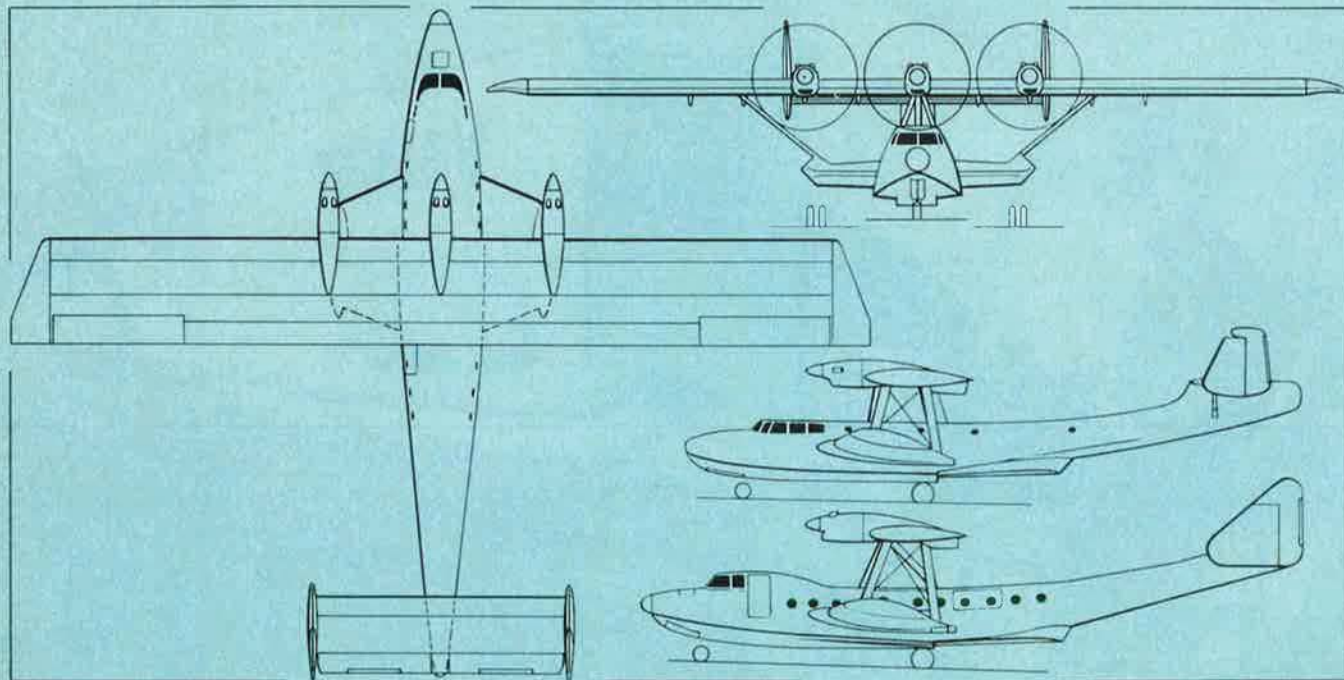
## IAI

ISRAEL AIRCRAFT INDUSTRIES LTD; Head Office and Works: Ben-Gurion International Airport, Lydda (Lod), Israel

A two-seat version of the Kfir fighter, known as the TC2, is now in production by IAI, alongside the single-seat Kfir-C2 described in the 1980-81 *Jane's*. Both models are in service with the Israeli Air Force.

### IAI KFIR-TC2

The two-seat Kfir differs from the single-seater primarily in having an 0.84 m (2 ft 9 in) plug inserted in the forward fuselage to accommodate a second cockpit in tandem. In addition, the nose of the two-seater is drooped in order to ensure a satisfactory field of view from both seats. Both cockpits are



The projected Dornier Do 24A 30-seat ocean-going amphibian, with additional side view (centre) of Do 24TT prototype (*Pilot Press*)





Above: IAI's new TC2 two-seat version of the Kfir fighter. Below: The drooped nose of the IAI Kfir-TC2 is emphasised in this ground view



covered by a single upward-opening canopy. The second cockpit incorporates additional systems which are not installed in the single-seat version. First flight was made in February 1981.

Israel Aircraft Industries is using the TC2 also to demonstrate the aircraft to pilots evaluating the Kfir on behalf of potential export customers.

#### PAC

**PAKISTAN AERONAUTICAL COMPLEX:** Head Office: Director General of Aeronautical Projects, 273 Abid Majid Road, Rawalpindi Cantt, Pakistan

The Pakistan Aeronautical Complex is responsible for the overhaul and maintenance of aircraft of the Pakistan armed forces, including the Shenyang J-6 (Chinese licence-built MiG-19) and Dassault Mirage. Since the mid-1970s it has also assembled under licence the Saab Safari/Supporter multipurpose light aircraft.

#### PAC MASHSHAQ

The Mashshaq (Urdu for 'proficient') is the local name for the Saab Safari/Supporter assembled under licence in Pakistan: the first example was completed in 1976. It is in service with both the Pakistan Air Force and Army Aviation, in a variety of roles which include basic flying training, forward air control, liaison, and other Army duties.

The Safari/Supporter, last described in detail in the 1978-79 *Jane's*, is a two/three-seat light aircraft, with dual controls, and is powered by a 149 kW (200 hp) Avco Lycoming IO-360-A1B6 flat-four

engine, driving a Hartzell HC-C2YK-4/C7666-2 two-blade constant-speed propeller. It can carry up to 300 kg (660 lb) of stores on underwing attachments.

#### AEROTEC

**AEROTEC S/A INDUSTRIA AERONAUTICA:** Head Office: Caixa Postal 286, 12200 São José dos Campos, São Paulo State, Brazil

#### AEROTEC A-132 TANGARÁ

**Brazilian Air Force designation: YT-17**  
Development of this aircraft, known originally

as the Uirapuru II, was started by Aerotec in the late 1970s. After being placed temporarily in abeyance, the programme was resumed in 1980, and the first prototype (serial-numbered 1000) made its initial flight in February 1981. A second has been completed for static and fatigue testing, and it was hoped to obtain clearance for series production within six months.

Named after an Amazonian songbird, the Tangará is intended to replace the earlier T-23 Uirapuru (Aerotec A-122A) as the Brazilian Air Force's standard primary trainer, and orders for up to 100 are anticipated. Entry into service should take place in late 1982 or early 1983. The T-17 designation was chosen to avoid giving the new primary trainer a 'later' one than the EMBRAER T-27 advanced trainer. (Brazilian Air Force trainer designations began with a projected design, the T-18.)

The Tangará is based substantially upon the Uirapuru, and utilises the same power plant. Principal changes concern the wings, which have a slight increase in span and dihedral; the fuselage, which is of simplified construction and lacks the under-fuselage fin/strike of the T-23; and the cockpit, which has an improved layout and a redesigned canopy with enhanced field of view.

**TYPE:** Two-seat primary trainer.

**WINGS:** Cantilever low-wing monoplane. Wing section NACA 43013. Dihedral 7° from roots. Light alloy structure, with all-metal ailerons and trailing-edge split flaps. No tabs.

**FUSELAGE:** All-metal semi-monocoque structure, of aluminium (steel in critical areas).

**TAIL UNIT:** Cantilever metal structure, with swept-back vertical and non-swept horizontal surfaces. Ground-adjustable tab on rudder; trim tab in starboard half of one-piece balanced elevator.

**LANDING GEAR:** Non-retractable tricycle type, with steerable nosewheel. Shock-absorption on all units. Small fairings on main-wheel legs. Disc brakes on main units.

**POWER PLANT:** One 119 kW (160 hp) Avco Lycoming O-320-B2B flat-four engine, driving a Senenich M-74 two-blade fixed-pitch metal propeller.

**ACCOMMODATION:** Two fully-adjustable seats side by side under rearward-sliding framed canopy. Dual controls standard. Baggage space aft of seats.

**AVIONICS AND EQUIPMENT:** VHF transceiver and intercom standard; VOR and ADF optional.

**DIMENSIONS, EXTERNAL:**

Wing span	9.00 m (29 ft 6 1/2 in)
Wing area, gross	13.77 m <sup>2</sup> (148.2 sq ft)
Wing aspect ratio	5.88
Length overall	7.00 m (22 ft 11 1/2 in)
Height overall	2.70 m (8 ft 10 1/4 in)
Wheel track	2.35 m (7 ft 8 1/2 in)
Propeller diameter	1.87 m (6 ft 1 1/2 in)

**WEIGHTS AND LOADINGS:**

Weight empty, equipped	560 kg (1,234 lb)
Max T-O weight	860 kg (1,896 lb)
Max wing loading	62.45 kg/m <sup>2</sup> (12.79 lb/sq ft)
Max power loading	7.21 kg/kW (11.85 lb/hp)

**PERFORMANCE (at max T-O weight):**

Max level speed at S/L	128 knots (238 km/h; 148 mph)
Cruising speed:	
75% power	105 knots (195 km/h; 121 mph)



The PAC Mashshaq, a Pakistani licence-built Saab Safari/Supporter





**Aerotec A-132 Tangará, under development for primary training duties with the Brazilian Air Force**

60% power	94 knots (174 km/h; 108 mph)
Stalling speed:	
flaps up	56.5 knots (104 km/h; 65 mph)
flaps down	39 knots (72 km/h; 45 mph)
Max rate of climb at S/L	276 m (905 ft)/min
Service ceiling	4,500 m (14,760 ft)
T-O to 15 m (50 ft)	200 m (656 ft)
Landing from 15 m (50 ft)	160 m (525 ft)
Endurance, 30 min reserves	4 h 18 min

Initial flutter clearance flight testing of the first advanced turboprop propeller was under way in Spring 1981, to establish a safety and systems checkout before proceeding to gather acoustic test data. Much of this will be obtained in a Mach 0.8 and 6,100 to 9,145 m (20,000 to 30,000 ft) altitude regime, but terminal flight characteristics may also

be examined. The current programme is expected to involve a total of twelve acoustic flights over a period of one to two years from June 1981.

## HUGHES

**HUGHES HELICOPTERS INC.** (Subsidiary of the Hughes Corporation); Head Office and Works: Culver City, California 90230, USA

### HUGHES NOTAR HELICOPTER

On May 20, 1981, Hughes Helicopters announced that, following the award in September 1980 of a \$1.4 million 24-month contract by the US Army Applied Technology Laboratory and the Defense Advanced Research Projects Agency, the company had designed and was to build a prototype no-tail-rotor (NOTAR) helicopter. This continues company-funded research and development efforts that began in 1975 and led, in 1977-78, to flight testing of an anti-torque tailboom which replaced a conventional tail rotor. Now, an Army OH-6 helicopter is to be modified to serve as the NOTAR prototype. The only change in this aircraft will be the installation of a completely new tailboom, manufactured by Aircraft Engineering Corporation of Paramount, California, under contract to Hughes.

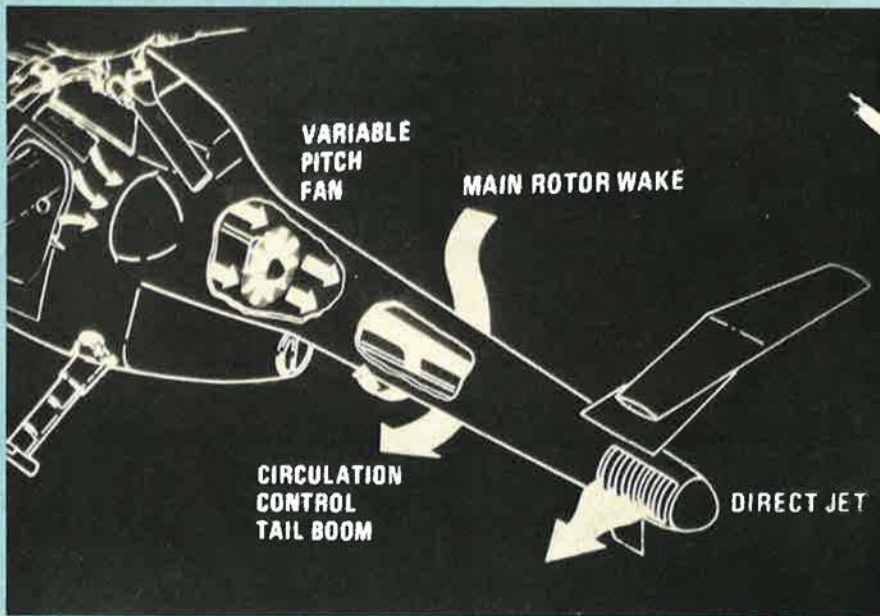
Constructed of bonded aluminium honeycomb, this tailboom will have a variable-pitch fan mounted within the forward end to produce an airstream that will pressurise the hollow tailboom at just below 0.034 bars (0.5 lb/sq in). The fan will be driven by

## NASA

**NATIONAL AERONAUTICS AND SPACE ADMINISTRATION;** Headquarters: 400 Maryland Avenue SW, Washington, DC 20546, USA

### NASA ADVANCED PROPELLER ACOUSTICS TEST PROGRAMME

The Lockheed C-140 JetStar operated by NASA's Dryden Flight Test Center has been modified to measure and record propeller acoustical data which are unobtainable in wind tunnel tests. Modifications include the installation of a 91 cm (3 ft) high pylon on the upper surface of the fuselage, directly above the wing. This carries an air turbine drive system (ATDS), to which is mounted the propeller under test. The ATDS is a three-stage air turbine motor, incorporating a flexible coupling between the propeller and turbine shaft, a brake system, and a slip ring assembly. It provides a minimum of 145 kW (195 hp) at 7,636 rpm. Other equipment installed in the aircraft includes 28 flush-mounted microphones, and pylon and aircraft skin accelerometers for vibration measurements. The eight- and ten-blade propellers, or propfans, to be tested will be one-seventh scale models, each 61 cm (2 ft) in diameter. Their purpose is to make future aircraft significantly more fuel-efficient.



**Diagram of the no-tail-rotor (NOTAR) concept being evaluated on a modified US Army OH-6 (Howard Levy)**



**NASA's C-140 JetStar as modified for propfan acoustical tests**

a shortened tail rotor driveshaft, and will absorb no more power from the engine than the OH-6's conventional tail rotor and its transmission system.

A slot, about 0.85 cm (0.33 in) wide, will run along the starboard lower side of the tailboom. Pressurised air venting through this slot will unite with the main rotor downwash, moving downward to follow the contour of the tailboom in the same way that an airstream travels over a conventional fixed wing; the resultant forces will counteract the torque of the main rotor.

To provide control in yaw, the aft end of the tailboom will incorporate a 'jet thruster', consisting of a fixed cone within a rotating cone. Air exits formed in both the port and starboard sides of the inner cone will allow pressurised air that has not vented through the slot to vent to atmosphere in controlled amounts, according to the position of a port in the outer cone, which will be rotated by conventional action of the pilot's rudder pedals.



The standard OH-6 vertical fin, and stabilisers on the starboard side of the boom, will be mounted just forward of the jet thruster.

In hovering flight, the slotted tailboom will produce most of the necessary anti-torque forces; in forward or manoeuvring flight, when the main rotor downwash moves off the boom, the jet thruster and fixed tail surfaces combine to produce the required forces for control. Hughes's engineers believe that a production version of NOTAR might also incorporate a controllable trim tab in the vertical fin, because there would not be any tail rotor flapping interference. A trim tab would lessen pilot workload, especially in crosswind conditions. A simple, blipper type button on the cyclic stick would activate the trim tab adjustments.

The first flight of the NOTAR prototype is scheduled during December 1981. Advantages claimed for the concept include elimination of such familiar tail rotor characteristics as safety problems, aerodynamic inefficiencies, noise, and maintenance costs. Most previous circulation control systems have required power in addition to that which is provided by the installed engine in a given aircraft.



Mirage 2000 with basic interceptor armament of two Super 530 and two Magic air-to-air missiles

## DASSAULT-BREGUET

AVIONS MARCEL DASSAULT/BREGUET AVIATION; Head Office: 33 rue du Professeur Victor Pauchet, 92420 Vaucresson, France

### DASSAULT-BREGUET MIRAGE 2000

Following cancellation of the ACF (Avion de Combat Futur) programme, described briefly in the 1975-76 *June's*, the Mirage 2000 was selected on December 18, 1975, as the primary combat aircraft of the French Air Force from the mid-eighties. Under French government contract, it is being developed initially as an interceptor and air-superiority fighter, powered by a single SNECMA M53 turbofan engine. The Mirage 2000 will be equally suitable for reconnaissance, close support, and low-altitude attack missions in areas to the rear of a battlefield.

Five prototypes have been built, of which four were funded by the French Air Force and one by the manufacturers. The first of these made its first flight, at Istres, on March 10, 1978, only 27 months after programme launch in December 1975. The second flew on September 18, 1978, the third on April 26, 1979, and the fourth on May 12, 1980. The fifth, a Mirage 2000B two-seat trainer version, flew on October 11, 1980, and, like its four predecessors, achieved supersonic speed (between Mach 1.3 and 1.5) during its first flight. By June 1, 1981, the five prototypes had amassed a total of nearly 1,000 hours in 1,042 flights by more than 40 pilots, including about 15 from foreign air forces. On the basis of structural testing, the airframe has

been approved for a load factor of +9g and rate of roll of 270°/s in subsonic and supersonic flight, 'clean' or with four air-to-air missiles.

Delivery of production Mirage 2000s is expected to begin in 1982. The manufacturers' prototype will be used to develop equipment and other changes proposed for future variants and for export models of the Mirage 2000. Further airframes have been built for static and fatigue testing.

Initial production contracts, in 1979-82, were expected to finance 127 single-seat and two-seat Mirage 2000s in air defence configuration, with an eventual requirement for 200 aircraft in this role; the first four were ordered in the 1979 budget, 22 were requested in 1980, and 22 more in 1981. Dassault believes that a further 200 Mirage 2000s will be required for reconnaissance and strike duties. A single basic type would then make up a high proportion of the French Air Force's planned first-line strength of 450 combat aircraft by the second half of the 1980s.

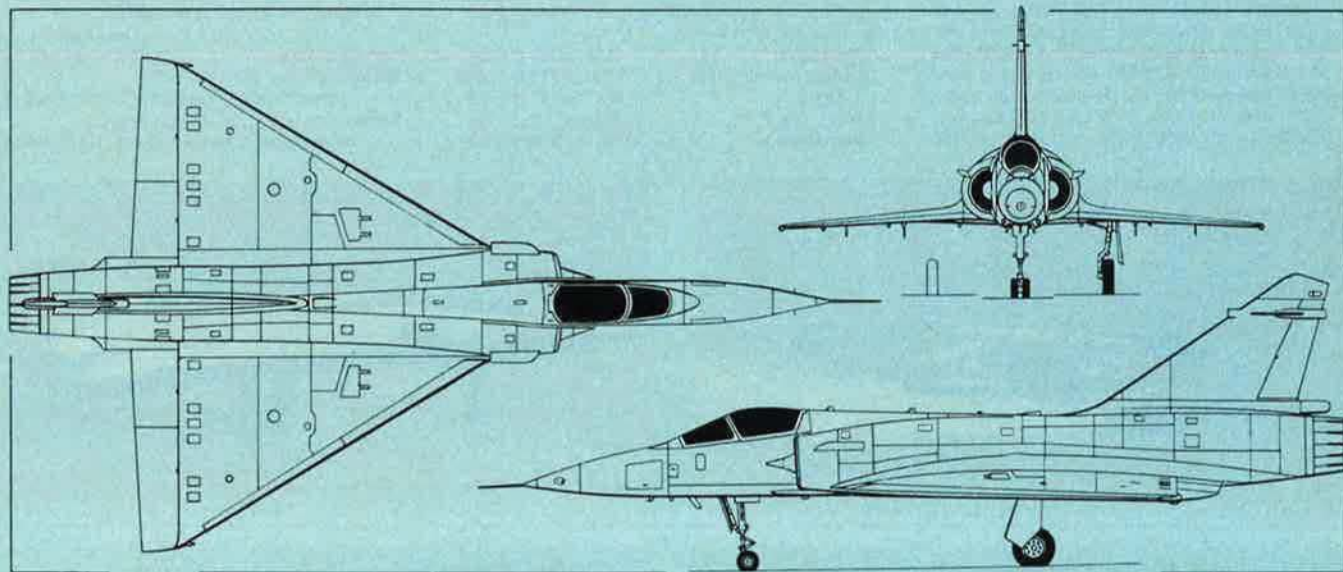
Because of development delays, the first production Mirage 2000s will be delivered in 1983 with RDM multi-mission radar (as offered to export customers) instead of the RDI pulse-Doppler interception radar specified by the French Air Force. RDI systems, able to detect a 5 m<sup>2</sup> (54 sq ft) target at a range of 54 nm (100 km; 62 miles), will be fitted from 1985.

Two prototypes of the Mirage 2000N two-seat low-altitude penetration version are expected to fly in 1983. Strengthened for flight at a typical 600 knots (1,110 km/h; 690 mph) at 60 m (200 ft) above the terrain, this version will have EMD Antelope V terrain-following radar, two SAGEM inertial platforms, improved TRT AHV12 radio altimeter, Thomson-CSF colour CRT, an OMER vertical camera, and special ECM. Production deliveries of this model, with provision for carrying ASMP nuclear missiles, are scheduled to start in 1986.

The following description applies to the single-seat air defence version of the Mirage 2000:

TYPE: Single-seat interceptor and air-superiority fighter.

WINGS: Cantilever multi-spar low-wing monoplane of delta planform, with cambered profile. Leading-edge sweepback 58°. Large-radius root fairings. Full-span automatic leading-edge flaps operate in conjunction with two-section elevons which form entire trailing-edge of each wing, to provide variable camber in combat and during landing approach. Leading-edge flaps are retracted during all phases of acceleration and low-altitude cruise, to reduce drag. Elevons have carbonfibre skin, with AG5 light alloy honeycomb core. Fly-by-wire control system for elevons and flaps, with surfaces actuated by hydraulic servo-units. No tabs. Retractable air-



Dassault-Breguet Mirage 2000 (SNECMA M53 afterburning turbofan engine) (Pilot Press)



brake above and below each wing.

**FUSELAGE:** Conventional semi-monocoque structure, 'waisted' in accordance with area rule; of conventional all-metal construction except for carbonfibre/light alloy honeycomb panel over avionics compartment, immediately aft of canopy. Small fixed strake, with marked dihedral, near leading-edge of each air intake trunk.

**TAIL UNIT:** Cantilever fin and inset rudder only; latter actuated by fly-by-wire control system via hydraulic servo-units. Much of fin skin and all rudder skin of boron/epoxy/carbon composites with honeycomb core of Nomex (fin) or light alloy (rudder). Sweepback on fin leading-edge 45°. No tab.

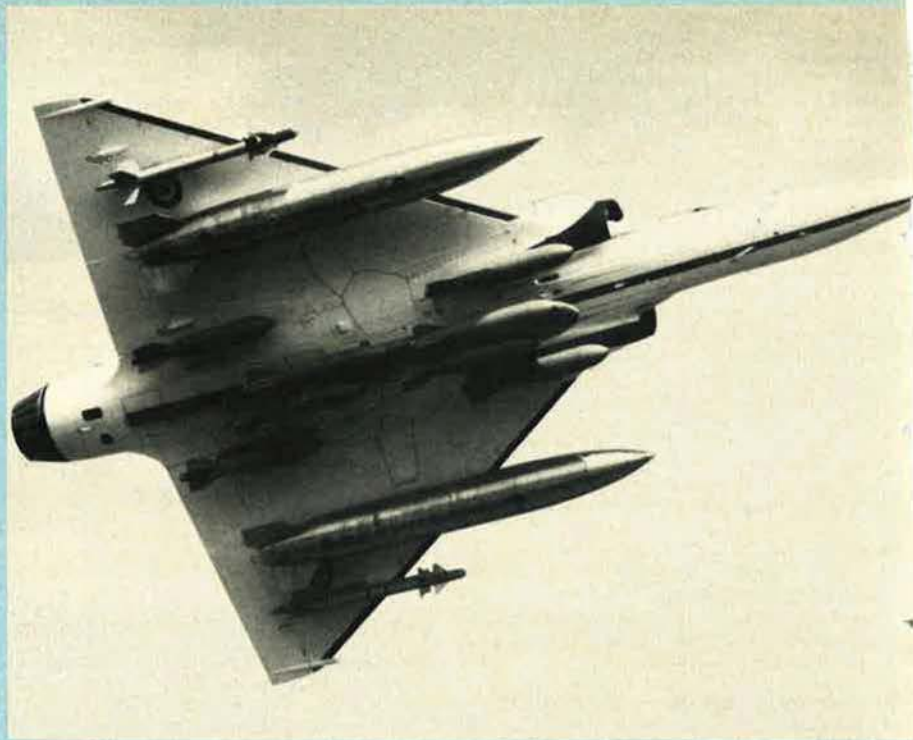
**LANDING GEAR:** Retractable tricycle type by Messier-Hispano-Bugatti, with twin nosewheels, and single wheel on each main unit. Hydraulic retraction, nosewheels rearward, main units inward. Oleo-pneumatic shock-absorbers. Electro-hydraulic nosewheel steering, through 45° to each side. Manual disconnect permits nosewheels to castor through 360° for ground towing. Light alloy wheels and tubeless tyres, size 360 × 135-6 on nosewheels; 750 × 230-15 on main wheels. Messier-Hispano-Bugatti hydraulically-actuated graphite composite disc brakes on main wheels, with anti-skid units. Runway arrester gear standard. Brake-chute in canister above jet nozzle.

**POWER PLANT:** One '10,000 kg class' SNECMA M53 afterburning turbofan engine. The 83.4 kN (18,740 lb st) M53-2 fitted for early prototype testing was replaced in 1980 by the 88.3 kN (19,840 lb st) M53-5, which will also power initial production aircraft. Under development for eventual use is the M53-P2, rated at 95.1 kN (21,385 lb st). Movable half-cone centrebody in each air intake. Internal fuel capacity 3,800 litres (835 Imp gallons). (Fuel capacity of 2000B reduced by less than 100 litres; 22 Imp gallons.) Provision for a jettisonable fuel tank, capacity 1,700 litres (374 Imp gallons), under each wing. Flight refuelling probe forward of cockpit on starboard side.

**ACCOMMODATION:** Pilot only, on Martin-Baker F10Q zero-zero ejection seat, under transparent canopy, in air-conditioned and pressurised cockpit.

**SYSTEMS:** Two independent hydraulic systems, pressure 280 bars (4,000 lb/sq in), to actuate flying control servo-units, landing gear, and brakes. Electrical system includes two Auxilec 20110 aircooled 20kVA 400Hz constant-frequency alternators, two Bronzavia DC transformers, a SAFT 40Ah battery, and ATEI static inverter.

**AVIONICS AND EQUIPMENT:** Pulse-Doppler RDI radar, developed and produced by Thomson-CSF in collaboration with Electronique Marcel Dassault, with operating range of 54 nm (100 km; 62 miles), capability of detecting targets at all altitudes, and good ECCM characteristics (interchangeable with Thomson-CSF RDM multi-role radar. Strike version will have EMD/Thomson-CSF Antilope 5 ground-scan radar). SAGEM Uliss 52 inertial platform. EMD central digital computer. Thomson-CSF VE-130 head-up and VMC-180 head-down displays. SFENA 605 autopilot. Thomson-CSF/EMD ECM, including passive



As a close support fighter, the Mirage 2000 carries, typically, eight 250 kg bombs, two drop-tanks, and two Magic missiles for self-defence

radar warning, LMT Deltac Tacan and IFF, Sorcrat VOR/ILS/marker beacon receiver, TRT radio altimeter, TRT or EAS UHF and V/UHF com, Thomson-CSF laser designator and marked target seeker.

**ARMAMENT:** Two 30 mm DEFA 554 cannon, with 125 rds per gun. Nine attachments for external stores, five under fuselage and two under each wing. Typical interception weapons comprise two Matra Super 530 missiles (inboard) and two Matra 550 Magic missiles (outboard) under wings. Alternatively, a single Super 530 can be carried under the fuselage instead of two underwing, or each of the four underwing hard-points can carry a Magic. (Strike version will carry more than 6,000 kg; 13,225 lb of external stores, including 18 250 kg bombs or Durandal penetration bombs; three 1,000 kg bombs; four 18-round packs of 68 mm rockets; two packs of 100 mm rockets; seven Beluga cluster bombs; two cannon pods; one reconnaissance pod; three AS.30 Laser air-to-surface missiles; or three Exocet anti-ship missiles.)

**DIMENSIONS, EXTERNAL:**

Wing span	9.00 m (29 ft 6 in)
Length overall: 2000	14.35 m (47 ft 1 in)
2000B	14.55 m (47 ft 9 in)
Wheel track	3.40 m (11 ft 1 3/4 in)
Wheelbase	5.00 m (16 ft 4 3/4 in)

<b>AREA:</b>	
Wings, gross	41 m <sup>2</sup> (441 sq ft)
<b>WEIGHTS:</b>	
Weight empty	7,400 kg (16,315 lb)
Max T-O weight	16,500 kg (36,375 lb)
<b>PERFORMANCE:</b>	
Max level speed	over Mach 2.2
Max continuous speed	Mach 2.2 (800 knots; 1,480 km/h; 920 mph IAS)
Max speed at low altitude without afterburning, carrying eight 250 kg bombs and two Magic missiles	over 600 knots (1,110 km/h; 690 mph)
Approach speed	140 knots (260 km/h; 162 mph)
Min speed in stable flight	90 knots (167 km/h; 104 mph)
Rate of climb at S/L	more than 18,000 m (59,050 ft)/min
Time to 15,250 m (50,000 ft) and Mach 2	4 min
Time from brake release to intercept target flying at Mach 3 at 24,400 m (80,000 ft)	less than 5 min
Service ceiling	20,000 m (65,600 ft)
Range with four 250 kg bombs	more than 800 nm (1,480 km; 920 miles)
Range with two 1,700 litre drop-tanks	more than 972 nm (1,800 km; 1,118 miles)



Launch of a Matra 530 long-range air-to-air missile from a Mirage 2000



Mirage 2000B-01 prototype two-seater (Brian M. Service)



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# THE BULLETIN BOARD

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

## Controllers Get Bigger SRB

Effective last month, Air Force air traffic controllers with six to fourteen years of service who reenlist can earn more money under the selective reenlistment bonus program.

Recent changes mean that reenlisting air traffic controllers in SRB Zones B and C can quickly reach the current allowable maximum \$16,000 (before tax) SRB payment. Pre-September payments were considerably smaller.

Changes include raising the Zone B (six- to ten-year group) SRB multiple of base pay from two to four and Zone C (ten- to fourteen-year group) from one to three. Zone A people (two- to six-year group) already have an SRB multiple of four.

Some examples of what this could bring to reenlisting air traffic controllers are: A technical sergeant with more than eight years of service who reenlists for five years could receive the maximum \$16,000 bonus. A twelve-year master sergeant, re-upping for four more, could earn a bonus of up to \$13,068. Maximum bonus payments may vary depending on a

controller's grade, pay-date, remaining obligated service time, and the sixteen-year total active federal military service SRB limit.

## Reagan Meets With Associations

In late summer, then-AFA President Vic Kregel joined leaders of major veterans groups and military associations as guests of President Ronald Reagan at a White House briefing on veterans affairs and economic and foreign policy (see photo).

In his remarks, the President noted the relationship between a strong economy and an effective defense program. He stressed also the Administration's commitment to the nation's veterans: "My Administration is committed to . . . those who risked their lives in defense of the values we so dearly cherish.

"A strong national economy and strong national defense go hand in hand," the President said. "We are committed to economy in all areas of government, but my budget will permit the Veterans Administration to operate with no reductions in per-

sonnel in the Department of Medicine and Surgery and . . . no reductions in veterans services."

President Reagan was joined by Vice President George Bush, who spoke on foreign policy; Under Secretary of the Treasury Norman Ture, who briefed on the economic program; and Administrator of Veterans Affairs Robert Nimmo, who announced plans to open forty-two new Vietnam Veterans Outreach Centers.

The forty-two new facilities will mean a fifty percent increase in the Vet Center counseling service for Vietnam-era veterans. These centers typically have staffs of three to five persons who operate on an informal person-to-person basis with Vietnam veterans experiencing emotional and other readjustment problems.

## Three Officers to Study Abroad

Three Air Force captains will study at foreign universities in 1982 as recipients of grants from the George Olmsted Foundation.

Capt. David B. Higgins, an astronautical engineer at Offutt AFB, Neb., will study at the University of Oslo, Norway; Capt. David N. Anderson, an A-10 aircraft commander at Myrtle Beach AFB, S. C., will attend the University of Uppsala, Sweden; and Capt. Lawrence E. Engleson, an RF-4C aircraft commander stationed at Zweibrücken AB, Germany, will travel to Argentina to study at the University of Buenos Aires. Captains Anderson and Engleson are USAF Academy grads; Higgins attended OTS.

The Olmsted Foundation annually selects three officers from each service branch to study at a foreign university for two years, speaking the native tongue. Air Force regular officers chosen each year include two recent Air Force Academy graduates and one commissioned through ROTC or Officer Training School.

To qualify for selection, officers must demonstrate such qualities as scholastic achievement, language aptitude, leadership, and a fondness for outdoor sports. Each officer is allowed to choose his own field of study, but must learn the language



President Reagan responds to a question during a meeting of leaders of military associations and veterans groups (see above). (Official White House photo)



before reporting to the university. The three have been scheduled for courses at the Defense Language Institute.

### Federal Employee Retirement Processing Hit

A General Accounting Office report has hit sharply at the length of time it takes the US Office of Personnel Management (OPM) to process federal retirement papers.

The study, requested by Sen. John Warner (R-Va.) and Rep. Mary Rose Oaker (D-Ohio), examines the handling of claims since 1977. It noted that OPM had a backlog of about 75,000 claims and is not meeting its agreed-upon performance standard of moving the papers within thirty-five days. Congresswoman Oaker, who chairs the House Subcommittee on Compensation and Employee Benefits, has issued a blast at OPM, saying, "The delay in processing means many federal retirees and survivors, who do not have substantial savings to fall back on, are left in a position of borrowing money or applying for public assistance to meet their living

## THE BULLETIN BOARD

expenses until these claims are processed."

All federal employee retirement applications must go through OPM. About 100,000 are processed annually. An OPM spokesman told AIR FORCE Magazine that, currently, there is a backlog of some 41,000. He said a much larger backlog was inherited from the previous Administration and that OPM has been moving steadily in reducing it. The spokesman cited a statement by the newly appointed Director of OPM, Donald J. Devine, that said the GAO report "... provides a useful critique and further helpful suggestions for dealing with a problem which I designated as OPM's highest administrative priority during my confirmation hearings.

... It has been my first priority since becoming Director."

An AIR FORCE Magazine inquiry to the Randolph AFB AFMPC office that handles the initial retirement paperwork for Department of Air Force civilian employees reveals that they have no "big problem" with OPM's current timetable and feel that there has been a "vast improvement in recent months." About 1,000 retirement applications for DAF employees are processed each year.

### Compensation for Service-Connected Disabilities

The House Committee on Veterans Affairs has approved a bill (H.R. 3995) that would grant an 11.3 percent average cost-of-living adjustment in compensation to veterans with service-connected disabilities and to survivors of those who have died as a result of service-incurred disabilities. The bill is sponsored by Chairman G. V. (Sonny) Montgomery (D-Miss.). Separate legislation is necessary since rate increases to offset inflation are not indexed by law.

## SENIOR STAFF CHANGES

**PROMOTIONS:** To be **Lieutenant General:** Charles G. Cleveland; Charles L. Donnelly, Jr.; Robert T. Herres; George D. Miller. To be **Brigadier General:** Carl N. Beer; William M. Shaw, Jr.

**RETIREMENTS:** L/G John G. Albert; B/G Donald J. Bowen; L/G Lloyd R. Leavitt, Jr.

**CHANGES:** B/G Donald O. Aldridge, from Dep. Dir., Defense Mapping Agency, Washington, D. C., to Dep. US Mil. Rep., NATO Military Committee, Brussels, Belgium. . . . **Col. (B/G selectee) Carl N. Beer**, from Exec. Ass't to the Special Ass't to Sec. of Defense, OSD, Washington, D. C., to DCS/Plans, Policy, Prgms., & Requirements, J-5, ADCOM/ADC, Peterson AFB, Colo. . . . **M/G Richard A. Burpee**, from Dep. Dir. of Ops., DCS/P&O, Hq. USAF, Washington, D. C., to Dir. of Ops., DCS/P&O, Hq. USAF, Washington, D. C., replacing M/G John T. Chain, Jr. . . . **M/G John T. Chain, Jr.**, from Dir. of Ops., DCS/P&O, Hq. USAF, Washington, D. C., to Ass't DCS/P&O, Hq. USAF, Washington, D. C., replacing M/G (L/G selectee) George D. Miller.

**M/G (L/G selectee) Charles G. Cleveland**, from Vice Cmdr., Hq. ATC, Randolph AFB, Tex., to Cmdr., Air University, ATC, Maxwell AFB, Ala., replacing retired L/G Stanley M. Umstead, Jr. . . . **B/G Thomas G. Darling**, from DCS/Personnel, Hq. SAC, Offutt AFB, Neb., to Cmdt., Armed Forces Staff College, Norfolk, Va. . . . **M/G (L/G selectee) Charles L. Donnelly, Jr.**, from Chief, US Mil. Trng. Mission, Dhahran, Saudi Arabia, to Cmdr., US Forces Japan, and Cmdr., 5th AF, PACAF, Yokota AB, Japan, replacing retired L/G William H. Ginn, Jr. . . . **B/G George P. A. Forschler**, to MA to Ass't DCS/P&R, Hq. USAF, Washington, D. C. . . . **M/G (L/G selectee) Robert T. Herres**, from Cmdr., Hq. AFCC, Scott AFB, Ill., to Cmdr., 8th AF, SAC, Barksdale AFB, La., replacing retired L/G Edgar S. Harris, Jr.

**B/G Ralph H. Jacobson**, from Dir. of Space Systems & C<sup>3</sup>, DCS/RD&A, Hq. USAF, Washington, D. C., to Office of Special Projects, OSAF, Los Angeles AFS, Calif. . . . **B/G Charles B. Jiggetts**, from Dep. Cmdr. for Combat Communications & Reserve Force Matters, Hq. AFCC, Scott AFB, Ill., to Vice Cmdr., Hq. AFCC, Scott

AFB, Ill., replacing M/G Robert F. McCarthy. . . . **B/G William J. Mall, Jr.**, from DCS/Personnel, Hq. MAC, Scott AFB, Ill., to Cmdr., ARRS, Hq. MAC, Scott AFB, Ill., replacing M/G Cornelius Nugteren. . . . **M/G Robert F. McCarthy**, from Vice Cmdr., Hq. AFCC, Scott AFB, Ill., to Cmdr., Hq. AFCC, Scott AFB, Ill., replacing M/G (L/G selectee) Robert T. Herres.

**M/G (L/G selectee) George D. Miller**, from Ass't DCS/P&O, Hq. USAF, Washington, D. C., to Vice CINC, Hq. SAC, Offutt AFB, Neb., replacing retired L/G Lloyd R. Leavitt, Jr. . . . **M/G Cornelius Nugteren**, from Cmdr., ARRS, Hq. MAC, Scott AFB, Ill., to Chief, Joint US Mil. Assistance Group, Greece, Hellenikon AB, Greece. . . . **B/G William E. Overacker**, from Inspector General, Hq. MAC, Scott AFB, Ill., to Cmdr., 322d Airlift Div., MAC, Ramstein AB, Germany, replacing B/G Robert D. Springer. . . . **B/G Philip S. Prince**, from Cmdr., 443d MAW, MAC, Altus AFB, Okla., to Inspector General, Hq. MAC, Scott AFB, Ill., replacing B/G William E. Overacker.

**B/G Bernard P. Randolph**, from Vice Cmdr., Warner Robins ALC, AFLC, Robins AFB, Ga., to Dir. of Space Systems & C<sup>3</sup>, DCS/RD&A, Hq. USAF, Washington, D. C., replacing B/G Ralph H. Jacobson. . . . **Col. (B/G selectee) William M. Shaw, Jr.**, from Cmdr., Log. Support Gp., AFLC, Dhahran, Saudi Arabia, to Vice Cmdr., Warner Robins ALC, AFLC, Robins AFB, Ga., replacing B/G Bernard P. Randolph. . . . **B/G Ellie G. Shuler, Jr.**, from Cmdr., 42d Bomb Wing, SAC, Loring AFB, Me., to Cmdr., 4th AD, SAC, F. E. Warren AFB, Wyo., replacing B/G David L. Patton. . . . **B/G Robert D. Springer**, from Cmdr., 322d Airlift Div., MAC, Ramstein AB, Germany, to DCS/Personnel, Hq. MAC, Scott AFB, Ill., replacing B/G William J. Mall, Jr. . . . **B/G Jerry W. Tietge**, from Special Ass't to DCS/P&O, Hq. USAF, Washington, D. C., to Dep. Dir. of Ops., DCS/P&O, Hq. USAF, Washington, D. C., replacing M/G Richard A. Burpee.

**SENIOR ENLISTED ADVISOR CHANGE:** **CMSgt. Robert H. Williamson**, from ASD/CMS, AFSC, Wright-Patterson AFB, Ohio, to SEA, Hq. AFSC, Andrews AFB, Md., replacing CMSAF Arthur L. "Bud" Andrews. ■





Maj. Gen. Winston D. Powers, DCS/Communications, Electronics and Computer Resources with North American Aerospace Defense Command, receives second star from wife, Jeanette, and NORAD Commander in Chief Lt. Gen. James V. Hartinger. General Powers, a master navigator, has more than 4,000 flying hours. (USAF photo by SrA. Chris Casale)

Also, to reaffirm the oversight function of Congress, the committee included a provision making any plan on the part of the Administration to consolidate VA regional office functions subject to the prior approval of Congress. Mr. Montgomery said the amendment to current law was prompted by the Administration's plan earlier this year to transfer some 12,000 people from VA's fifty-eight regional offices to a centralized location. Further, to ensure the availability of appropriations and of funded personnel ceilings, the bill would also require the director of OMB not to hold up VA funds appropriated by Congress.

Chairman Montgomery said: "These provisions of the bill will assure VA employees that proposed consolidation plans in the future would be appropriately reviewed by Congress before implementation." In praising David Stockman, the current OMB director, for agreeing informally to restore cuts originally proposed for the medical program, Mr. Montgomery stated that "the change in current law is necessary in order to assure that future OMB directors will not circumvent the will of the Congress."

Other provisions of the bill touch on GI insurance, blinded veterans training, and clarification of veterans benefits eligibility for those leaving the service on early-outs.

Chairman Montgomery stressed that H.R. 3995 is well within the budget authority and outlays contained in the First Congressional Budget Resolution. "This bill will accomplish everything we need to do for service-connected veterans and eligible dependents during this session of the Congress," he stated.

At press time, full House action on the bill had not yet been scheduled. A companion Senate Bill (S. 917), with almost identical provisions, has already been passed by the full Senate.

### Portland HMO Test Moving Along

The CHAMPUS CHOICE test program in the Portland, Ore., area is off to a good start, according to Col. Ken Hermann, USAF, Deputy Director of CHAMPUS. CHAMPUS CHOICE is a new program that will test whether or not it is feasible to offer comprehensive, prepaid health plans to CHAMPUS beneficiaries. Portland is the pilot site for the test, offering dependents of military personnel, as well as retirees and their dependents, a choice of health and medical programs through health groups on a prepaid basis. (See related item in "The Bulletin Board," August '81 issue.)

"The interest in the Health Maintenance Organization (HMO) test was more than anyone expected," Colonel Hermann said. A kickoff information session featured representatives from CHAMPUS, DEERS, and the four Portland HMOs and attracted a large attendance.

According to Colonel Hermann, Portland was chosen for the three-year test because the city has a "very mature health-care system, particularly because of its numerous prepaid programs." It is estimated that between 30,000 to 40,000 beneficiaries live in the Portland area. Another reason is that there is no military hospital in the area, and DEERS (Defense Eligibility Enrollment System) has been established in Oregon.

The new program is different from the current CHAMPUS system in sev-

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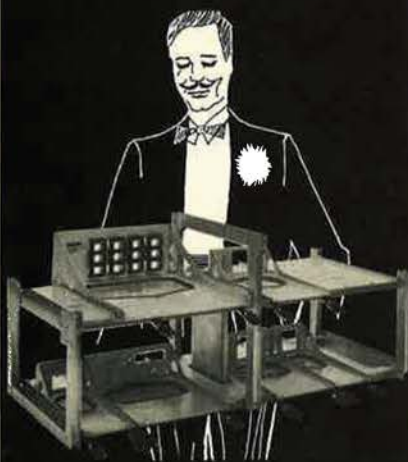
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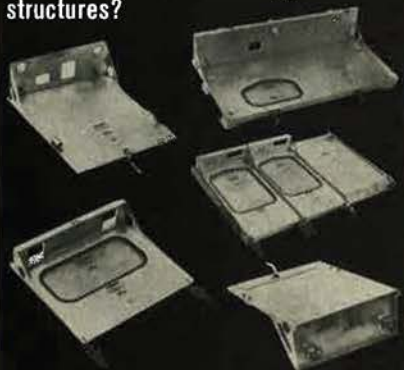


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eral ways. Members pay part of the premium, but the out-of-pocket costs may be lower than they are now under CHAMPUS, depending on the program selected. It also gives the beneficiaries a known medical expense each month, which seems to be desirable to many people in planning family budgets.

In other CHAMPUS news, DoD has amended the definition of medical emergency in the CHAMPUS regulation to include emergency maternity inpatient care.

John H. Moxley III, M.D., Assistant Secretary of Defense (Health Affairs), explained that through an oversight, the CHAMPUS definition of medical emergency omitted any reference to maternity care. The amendment clarifies CHAMPUS policy on this point and establishes that a nonavailability statement is not required for maternity-related inpatient care when the care meets the definition of a medical emergency.

Dr. Moxley stated, "As with any other emergency, in the case of pregnancy a medical emergency must involve a sudden and unexpected medical complication which puts the mother or baby, or both, at risk."

The policy clarification concerning emergency maternity admissions is retroactive to June 1, 1977, the date the current regulation was implemented; resubmission of previously denied claims will be allowed until December 31, 1981.

### Home Buyers Have Advice Available

Veterans and active-duty military contemplating home ownership have a variety of good advice available. The Air Force, for example, has alerted members that a booklet, entitled "The Guide to Local Real Estate Law and Procedures," is available at all base legal offices. The booklet is an excellent reference for preparation of the myriad forms involved in buying or selling a home. The Air Force message reminds owners, and renters, too, that the use of the Air Force Housing Referral Real Estate Listing Service, available at each base's housing referral office, can save cash and time if used. Those making a move can obtain information on houses available at the next base from this source before the move.

Meanwhile, the VA has updated one of its most popular pamphlets (VA Pamphlet 26-6), entitled "To the Home Buying Veteran: A Guide for Veterans Planning to Buy or Build Homes with a GI Loan." This guide, available through any VA office, is useful to anyone purchasing or building a home

## THE BULLETIN BOARD

under any financing plan, not just the GI one. It discusses important points to consider in selecting a neighborhood; evaluates not only up-front costs but possible follow-on expenses; gives tips on what to look for in a sales contract; and even what to do before and after moving day.

It's well written, contains pertinent checklists, and is highly recommended to anyone considering buying or building.

### VA Medical School Grants Extended

Recent legislation reaffirms VA's \$133.8 million program of grants to five new medical schools affiliated with VA's nationwide medical care system.

In supporting the legislation, the VA told Congress earlier this year that "after the five new state medical schools received their grants, many delays were experienced in their program plans, and faculty recruitment was not completed until well into the seven-year program.

"We believe the full use of these unexpended funds is . . . of value not only to the new medical schools, but to their affiliated VA medical centers as well.

"The VA has been the primary means of support for the establishment of these medical schools, and we, therefore, have a deep interest in their continued development."

The new state medical schools will join a network of 104 schools already affiliated with VA hospitals. The close relationship that exists between the hospitals and their affiliates is a major source of physicians and other health professionals who serve the nation's medical needs.

This is just one part of VA's extensive medical training program. For example, nearly 97,000 of the nation's medical trainees received all or part of their clinical training experience in Veterans Administration medical facilities last year.

The number included 24,268, or thirty-eight percent, of the physicians filling approved medical residencies, and thirty-two percent of all medical students in the country.

The training programs involved are part of the agency's continuing commitment to provide the best health care possible for the nation's veter-





CMSgt. Jimmie L. Blackmon, Jr., second from left, receives collective congratulations of three Senior Enlisted Advisors on hand to witness his becoming the new Commandant of the Eighth Air Force NCO Leadership School. With Chief Blackmon, from left, CMSgts. James Foreman, 2d Bomb Wing; Jan C. Boyd, Hq. Eighth Air Force; and Charles Reynolds, Hq. SAC. The Chief's appointment completes phaseout of officer commandants at leadership schools. (USAF photo by SrA. Michelle Atkins)

ans as well as assisting in the development of health professionals for the country as a whole.

In addition to large numbers of medical residents and students, the VA trained nineteen percent of all dentists engaged in postdoctoral training, and five percent of all the country's dental students.

A total of eleven percent of nursing students at baccalaureate levels and below were trained during the period at VA medical facilities, and the system also trained eleven percent of all graduate psychology students and five percent of all clinical social work students enrolled in schools of social work.

### Short Bursts

The **1982 Air Force Sports program** will provide USAF championships in racquetball, bowling, men's and women's slowpitch softball, and men's and women's basketball. Also slated are training camps for interservice competition in nine other sports.

The VA's third annual **Olin E. Teague Award** for outstanding rehabilitation of war-wounded veterans has been presented to **Eric Blom, Ph.D., and Mark I. Singer, M.D.**, for their development of a simplified, inexpensive, yet revolutionary process for voice restoration. Use of their prosthesis provides almost immediate voice rehabilitation. Almost ninety percent of laryngectomized veterans will profit from this procedure at a considerable savings to the government. The pair developed the program while employed at the VA Medical Center in Indianapolis, Ind.

**MSgt. Terry M. Howard**, Scott AFB, Ill., won the **International Clay Pigeon competition** at the 21st US International Shooting Championships in Salem, Ore. Sergeant Howard, who won with a four-bird advantage, is the first Air Force competitor to win the event since the late 1960s. He will captain the US Olympic Trap Team in several international competitions this year.

The **first-ever All-Iowa "buddy flight"** was enlisted recently in Des Moines. The thirty-one new airmen were sworn in to the "Hawkeye" flight, cheered on by the governor and other Iowans, including Maj. Gen. Keith McCartney from Hq. USAF (former Recruiting Service Commander) and then-CMSAF James McCoy.

The Air Force is looking for "forgotten" spouses of deceased vets who may not know they are eligible for new **Military Survivor Benefit Plan annuities**. A year ago, legislation was enacted granting money to spouses of service people who died on active duty before September 21, 1972, with at least twenty years of active service. USAF has no way of directly contacting eligibles and would welcome information from them. Queries may be sent to the Air Force Accounting and Finance Center, Denver, Colo. 80279, or call toll-free 1-800-525-0104.

The VA plans to develop **national cemeteries in Alabama and Florida**, which will complete the concept of locating one available cemetery in each of the ten federal regions. Fort Mitchell, ten miles southeast of Columbus, Ga., will be the Alabama site. The Florida location has yet to be selected. ■



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# AFA NEWS

## Chapter and State Photo Gallery

By Dave C. Noerr, AFA AFFAIRS EDITOR



Col. Conrad Forsythe, Jr., Chief, Space Launch and Control Division, USAF, made an outstanding presentation on the Space Shuttle program at a recent meeting of the AFA Middle Tennessee Chapter. Pictured at the event are (from left): Jack Westbrook, past Tennessee State AFA President; Julius P. Maxwell, Middle Tennessee Chapter President; Colonel Forsythe; and Enoch Stephenson, Middle Tennessee Chapter Program Chairman.

The Brandywine Chapter presents an Air Force Association Citation to Dave Cannavo, who constructed a replica of the Spirit of St. Louis that he will fly from Philadelphia to Paris, France, commemorating the 1927 Lindbergh flight. From left to right: Henry Coffin III, Brandywine Chapter Secretary; John Farley, Brandywine Chapter Treasurer; Dave Cannavo, pilot and builder of the plane; Joseph Dougherty, Brandywine Chapter President; and Sam Greco, Brandywine Chapter Council.



Maj. Gen. Frank J. Schober, Jr., Commanding General of the California National Guard, congratulates Maj. Charles K. Cross, Jr., after presenting him with the Tennessee Ernie Ford Chapter's Outstanding Aviator Award. Major Cross serves with the 129th Aerospace Rescue and Recovery Group, California Air National Guard, based at Moffett Field, Calif. General Schober was the principal speaker at the Chapter's recent dinner meeting.



Lt. Gen. M. L. Boswell, center, recently retired USAF Assistant Vice Chief of Staff, receives a Citation of Appreciation from AFA Executive Director Russell E. Dougherty (right). Also pictured is John O. Gray, longtime AFA staff member who in recent years worked together closely with General Boswell on AFA projects. (Photo by Dottie L. Flanagan)





AFA's Langley, Va., Chapter recently hosted its sixteenth annual AFA Civic-Military Reception at Langley AFB, honoring the thirty-fifth anniversary of the Tactical Air Command. During the reception, TAC Commander Gen. W. L. Creech and Mrs. Creech greeted dinner guests. Above, from left, are CMSgt. Norman O. Gallion, then TAC's Senior Enlisted Advisor; Mrs. T. H. McMuller; and General and Mrs. Creech.



The Great Lakes Region of AFA recently honored retiring Gen. Bryce Poe II (left) for "more than thirty-eight years of exceptional and dedicated service to the nation." Robert J. Puglisi, AFA Great Lakes Region Vice President, and Ellen Hertlein, Wright Memorial Chapter President, made the presentation to the retiring Air Force Logistics Command Chief, citing his "extraordinary operational and logistics skills and his pioneering and . . . innovative approaches toward . . . enhanced operational readiness, sustainability, and logistics management."

Bob Bergman (center), of Ford Aerospace and Communications Corp., receives a Community Partner renewal certificate during the recent Nevada State AFA Convention. Presenting the award is Liston T. "Zack" Taylor (left), AFA Far West Region Vice President, and William J. Becker, Las Vegas Chapter Vice President.



#### CALENDAR OF EVENTS

October 2-4, Arkansas State AFA Convention, Fayetteville . . . October 9-11, Georgia State AFA Convention, Jekyll Island . . . November 12-13, AFA 1981 Symposium, Hyatt House Hotel, Los Angeles . . . November 13, Air Force Ball, Century Plaza Hotel, Los Angeles.



Members of the Virginia Air National Guard were honored during the recent Virginia State AFA Convention. "A Salute to the Air Guard" was the theme of the convention, held in Richmond, Va. Virginia State President H. B. "Buzz" Henderson (second from left) presented a specially engraved plaque to Brig. Gen. William E. Haymes, Sr., Virginia's assistant adjutant general for air and an original member of the Virginia Air Guard. Pictured with them is Maj. Gen. William J. McCaddin (far left), state adjutant general, and Col. Alvah S. Mattox, commander of the Virginia Guard's 192d Tactical Fighter Group (far right). (Photo by MSgt. Robert Flournoy, VaANG)



# AFA NEWS PHOTO GALLERY



Brig. Gen. A. Paul Bruno (right), Vice Commander of the Ogden Air Logistics Center, discusses the advantages of AFA membership with some old and new members. Pictured from left to right: John Kenney, Deputy Director of Item Management Division in Hill's Directorate of Material Management; James Harris, F-4 aircraft mechanic; Rich Hurtado, F-16 aircraft mechanic; and General Bruno. The group met in one of Hill AFB's industrial buildings following a recent AFA membership campaign that netted more than 1,100 new members for six area chapters.



The recent Kansas State AFA Convention held at McConnell AFB, Kan., was honored to have Lt. Gen. LeRoy Manor, USAF (Ret.), Executive Vice President of the Retired Officers Association, as guest speaker. Pictured with General Manor are (from left): Cletus Pottebaum, Kansas State AFA President; Mrs. Eileen Pottebaum; Brig. Gen. Elmer Brooks, Commander of the 381st Strategic Missile Wing, McConnell AFB; Mrs. Katherine Brooks; and General Manor and his wife Dee.

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Shown following awards presentation ceremonies held during the recent Texas State AFA Convention in San Antonio are honorees from USAF's Electronic Security Command with the ESC Commander, Maj. Gen. Doyle E. Larson (center). The honorees are (from left): Daniel A. K. "Dak" Proctor, Outstanding Civilian of the Year; SrA. Marian Greathouse, Airman of the Year; General Larson; 2d Lt. Maureen Jamvold, Junior Officer of the Year; and Lt. Col. Kaye Biggar, winner of the Benjamin Foulois First Flight Award. (USAF photo by TSgt. Fred B. Lewis)



George M. Douglas (center), a former President and Board Chairman of AFA, was honored recently at a reception in Washington marking his retirement as an Air Force Reserve major general. He is shown here with Russ Dougherty, AFA's Executive Director (left), and AFA National Treasurer Jack B. Gross.



AFA's Aggieland Chapter, at College Station, Tex., which was chartered last October, recently held its first Dining-Out. On hand were (from left) Chapter President Harold B. "Tex" Owens; Dr. Richard Thomas, Chapter Vice President for Programs; Gen. Robert C. Mathis, USAF Vice Chief of Staff; and E. F. "Sandy" Faust, AFA National Director.



At a recent meeting of the Southern Maine Chapter, the Maine State Organization was presented its Charter. Pictured from left to right are R. L. Devoucoux, AFA National Director; Arley McQueen, Maine State President; Sergei Sikorsky, guest speaker for the event; and William Lindh, Maine State Secretary-Treasurer.



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# AFA CHAMPLUS ... New, Strong Protect

**When a Single Accident or Illness Could Cost You Thousands of Dollars, You Need AFA CHAMPLUS ... for Strong Protection against Costs CHAMPUS Doesn't Cover!**

For military retirees and their dependents ... and dependents of active duty personnel ... more and more medical care is being provided through the government CHAMPUS program.

And, of course CHAMPUS pays 75% of allowable charges.

But today's soaring hospital costs—*up to \$500 a day* in some major metropolitan medical centers—can run up a \$20,000 bill for even a moderately serious accident or illness.

Your 25% of \$20,000 is no joke!

AFA CHAMPLUS protects you against that kind of financial catastrophe *and* covers most of your share of routine medical expenses as well.

## HOW AFA CHAMPLUS WORKS FOR YOU!

### WHO IS ELIGIBLE?

- 1) All AFA members under 65 years of age who are currently receiving military retired pay and are eligible for benefits under Public Law 89-614 (CHAMPUS), their spouses under age 65 and their unmarried dependent children under age 21 (or age 23 if in college).
- 2) All eligible dependents of AFA members on active duty. Eligible dependents are spouses under age 65 and unmarried dependent children under age 21 (or age 23 if in college).

### EXCEPTIONAL BENEFIT PLAN

(See chart at right)

**FOUR YEAR BASIC BENEFIT.** Benefits for most injuries or illnesses may be paid for up to a four-year period.

### PLUS THESE SPECIAL BENEFITS ...

- 1) Up to 45 consecutive days of in-hospital care for mental, nervous, or emotional disorders. Outpatient care may include up to 20 visits of a physician or \$500 per insured person each year.
- 2) Up to 30 days care per insured per year in a Skilled Nursing Facility.
- 3) Up to 30 days care per insured per year and up to 60 days lifetime in a

CHAMPUS-approved Residential Treatment Center.

- 4) Up to 30 days care per insured per year and up to 60 days lifetime in a CHAMPUS-approved Special Treatment Facility.
- 5) Up to 5 visits per insured per year to Marriage and Family Counselors under conditions defined by CHAMPUS.

### YOUR INSURANCE IS NON-CANCELLABLE

As long as you are a member of the Air Force Association, pay your premiums on time, and the master contract remains in force, your insurance cannot be cancelled.

### ADMINISTERED BY YOUR ASSOCIATION ... UNDERWRITTEN BY MUTUAL OF OMAHA

AFA CHAMPLUS insurance is administered by trained insurance professionals on your Association staff. You get prompt, reliable, courteous service from people who know your needs and know every detail of your coverage. Your insurance is underwritten by Mutual of Omaha, the largest individual and family health insurance company in the world.

### AFA OFFERS YOU HOSPITAL BENEFITS AFTER AGE 65

Once you reach Age 65 and are covered under Medicare, AFA offers you protection against hospital expenses not covered by Medicare through the *Senior Age Benefit Plan* of AFA Hospital Indemnity Insurance. Members enrolled in AFA CHAMPLUS will automatically receive full information about AFA's Medicare supplement program upon attainment of Age 65 so there will be no lapse in coverage.

#### AFA CHAMPLUS BENEFIT SCHEDULE

Care	CHAMPUS Pays	AFA CHAMPLUS Pays
<i>For Military Retirees Under Age 65 and Their Dependents</i>		
Inpatient civilian hospital care	CHAMPUS pays 75% of allowable charges	CHAMPLUS pays the 25% of allowable charges not covered by CHAMPUS.
Inpatient military hospital care	The only charge normally made is a \$5.00 per day subsistence fee, not covered by CHAMPUS.	CHAMPLUS pays the \$5.00 per day subsistence fee.
Outpatient care	CHAMPUS COVERS 75% of outpatient care fees after an annual deductible of \$50 per person (\$100 maximum per family) is satisfied	CHAMPLUS pays the 25% of allowable charges not covered by CHAMPUS after the deductible has been satisfied.
<i>For Dependents of Active Duty Military Personnel</i>		
Inpatient civilian hospital care	CHAMPUS pays all covered services and supplies furnished by a hospital less \$25 or \$5.00 per day, whichever is greater.	CHAMPLUS pays the greater of \$5 per day or \$25 of the reasonable hospital charges not covered by CHAMPUS.
Inpatient military hospital care	The only charge normally made is a \$5.00 per day fee, not covered by CHAMPUS.	CHAMPLUS pays the \$5.00 per day subsistence fee.
Outpatient care	CHAMPUS covers 80% of outpatient care fees after an annual deductible of \$50 per person (\$100 maximum per family) is satisfied.	CHAMPLUS pays the 20% of allowable charges not covered by CHAMPUS after the deductible has been satisfied.

**NOTE:** Outpatient benefits cover emergency room treatment, doctor bills, pharmaceuticals, and other professional services. There are some reasonable limitations and exclusions for both inpatient and outpatient coverage. Please note these elsewhere in the plan description.



# Against Costs CHAMPUS Doesn't Cover

## APPLY TODAY! JUST FOLLOW THESE STEPS

Choose either AFA CHAMPUS In-patient coverage or combined In-patient and Out-patient coverage for yourself. Determine the coverage you want for dependent members of your family. Complete the enclosed application form in full. Total the premium for the coverage you select from the premium tables on this page. Mail the application with your check or money order for your initial premium payment, payable to AFA.

Get AFA's new



### LIMITATIONS

Coverage will not be provided for conditions for which treatment has been received during the 12-month period prior to the effective date of insurance until the expiration of 12 consecutive months of insurance coverage without further treatment. After coverage has been in force for 24 consecutive months, pre-existing conditions will be covered regardless of prior treatment.

### EXCLUSIONS

This plan does not cover and no payment shall be made for:

- a) routine physical examinations or immunizations
- b) domiciliary or custodial care
- c) dental care (except as required as a necessary adjunct to medical or surgical treatment)
- d) routine care of the newborn or well-baby care
- e) injuries or sickness resulting from declared or undeclared war or any act thereof
- f) injuries or sickness due to acts of intentional self-destruction or attempted suicide, while sane or insane
- g) treatment for prevention or cure of alcoholism or drug addiction
- h) eye refraction examinations
- i) Prosthetic devices (other than artificial limbs and artificial eyes), hearing aids, orthopedic footwear, eyeglasses and contact lenses
- j) expenses for which benefits are or may be payable under Public Law 89-614 (CHAMPUS)

### QUARTERLY PREMIUM SCHEDULE

#### Plan 1—For military retirees and dependents

##### In-Patient Benefits

Member's Attained Age	Member	Spouse	Each Child
Under 50	\$19.03	\$23.30	\$11.00
50-54	\$23.78	\$29.10	\$11.00
55-59	\$30.13	\$36.90	\$11.00
60-64	\$39.65	\$48.55	\$11.00

##### In-Patient and Out-Patient Benefits

Under 50	\$26.80	\$31.05	\$27.50
50-54	\$33.48	\$38.80	\$27.50
55-59	\$42.43	\$49.18	\$27.50
60-64	\$55.83	\$64.73	\$27.50

#### Plan 2—For dependents of active duty personnel.

In-Patient Only	None	\$ 8.80	\$ 4.40
In-Patient and Out-Patient	None	\$35.20	\$22.00

Note: Plan II premiums are listed on an annual basis. Because of the very low cost, persons requesting this coverage are asked to make annual payments.

#### APPLICATION FOR AFA CHAMPUS SUPPLEMENT INSURANCE

Group Policy GMG-FC70  
Mutual of Omaha 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 \_\_\_\_\_ Current Age \_\_\_\_\_ Height \_\_\_\_\_ Weight \_\_\_\_\_ Soc. Sec. No. \_\_\_\_\_  
Month/Day/Year

This insurance coverage may only be issued to AFA members. Please check the appropriate box below:

- I am currently an AFA Member.  I enclose \$13 for annual AFA membership dues (includes subscription (\$9) to AIR FORCE Magazine).
- I am over 65 years of age. Please send information on AFA's Medicare Supplement.

#### PLAN & TYPE OF COVERAGE REQUESTED

- Plan Requested (Check One)  AFA CHAMPUS PLAN I (for military retirees & dependents)  AFA CHAMPUS PLAN II (for dependents of active duty personnel)
- Coverage Requested (Check One)  Inpatient Benefits Only  Inpatient and Outpatient Benefits
- Person(s) to be Insured (Check One)  Member Only  Member & Children  Spouse Only  Spouse & Children  Member & Spouse  Member, Spouse & Children

#### PREMIUM CALCULATION

All premiums are based on the attained age of the AFA member applying for this coverage. Premium payments are normally paid on a quarterly basis (see table for rate table). Upon request, however, they may be made on either a semi-annual or annual basis.

Quarterly premium for member (age \_\_\_\_\_) \$ \_\_\_\_\_

Quarterly premium for spouse \$ \_\_\_\_\_

Quarterly premium for \_\_\_\_\_ children @ \$ \_\_\_\_\_ \$ \_\_\_\_\_

Total premium enclosed \$ \_\_\_\_\_

Requests for active duty dependent coverage under Plan 2 should include annual premiums.

If this application requests coverage for your spouse and/or eligible children, please complete the following information for each person for whom you are requesting coverage.

Names of Dependents to be Insured \_\_\_\_\_ Relationship to Member \_\_\_\_\_ Date of Birth (Month/Day/Year) \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

(To list additional dependents, please use a separate sheet.)

In applying for this coverage, I understand and agree that (a) coverage shall become effective on the last day of the calendar month during which my application together with the proper amount is mailed to AFA, (b) only hospital confinements (both inpatient and outpatient) or other CHAMPUS-approved services commencing after the effective date of insurance are covered and (c) any conditions for which I or my eligible dependents received medical treatment or advice or have taken prescribed drugs or medicine within 12 months prior to the effective date of this insurance coverage will not be covered until the expiration of 12 consecutive months of insurance coverage without medical treatment or advice or having taken prescribed drugs or medicine for such conditions. I also understand and agree that all such pre-existing conditions will be covered after this insurance has been in effect for 24 consecutive months.

Date \_\_\_\_\_, 19\_\_\_\_ Member's Signature \_\_\_\_\_ 10/81

NOTE: Application must be accompanied by check or money order.

Send remittance to:  
Insurance Division, AFA, 1750 Pennsylvania Ave., NW, Washington, D.C. 20006.

Form 6173GH App.



Bob Stevens'

# "There I was..."

HEAR ABOUT THE CLOWN WHO ACCIDENTALLY USED 100 OCT. AVGAS INSTEAD OF KEROSENE IN THE GP. LATRINE? AN INNOCENT BYSITTER SINGED HIS GLUTEUS MAXIMUS TOSSING A BUTT DOWN -



WE PRESENT HEREWITH SOME OF THE TRIVIA THAT COLLECTED IN THE BACKWASH OF WWII. THESE ANECDOTES, and OTHER MINUTIAE, KEPT US BUSY IN THE TELLING and RE-TELLING (HELL, YOU COULD EVEN GET AN ARGUMENT STARTED OVER WHERE THE WALLS STOPPED and THE ROOF BEGAN IN A NISSEN HUT!).



SIGN IN A PUB NEAR AN AAF BASE IN ENGLAND



REMEMBER KILROY? THE ADJ. GEN'S OFFICE STIFFLY ANNOUNCED 27 SEP 1946 THAT HE WAS A "MYTHICAL FIGURE" (ACTUALLY, THERE WERE 62 KILROYS OUT OF 12 MILLION G.I.s IN WW II).



P.S. FRANCIS J. (FRANK) KILROY, JR., 461ST BG, 15AF, CLAIMS TO HAVE STARTED IT ALL AT BOCA RATON IN 1943!


WHAT WAS A "MICKEY MAN"?



Ans: He operated a "Mickey Set", a specialist working assignments in a B-17. Of course! Actually, a radar specialist.

Bob Stevens





Today they can foil enemy forces  
in four oceans...

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Up to now, this Navy EA-6B flight team could hardly operate in four oceans in one day. But today, a Sperry simulation system enables them to practice ECM missions in a variety of realistic worldwide scenarios... without ever leaving the ground.

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The EA-6B trainer is one example of Sperry aircraft trainer technology. Our flight simulator for the Navy/Marine Corps' newest fighter—the F/A-18 Hornet—will have the features necessary to qualify pilots in normal and emergency operations of the aircraft.

Our A-6E trainer realistically portrays night carrier launch and recovery functions. Our A-4 attack aircraft simulators cover the entire range of aviator training.

Sperry math modeling techniques are being incorporated in our design of the operational flight trainers for the CH-53 helicopter. Our conversion of U.S. Air Force

B-52 trainers to the latest digital systems is a cost-efficient alternative to the design and construction of new trainers.

And we've developed a wide range of simulators for other applications—from improving the firepower accuracy of infantry and armor to assuring the combat readiness of shipboard crews; from enhancing the skills of commercial ship pilots to researching the behavior of deck officers.

This technology is making training more practical and less expensive—often at one-tenth the cost of actual exercises.

For more information on what we're up to in simulation, just ask us...we understand how important it is to listen.

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