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AIR FORCE MAGAZINE

Published by the Air Force Association

FOCUS ON PEOPLE

—"Confab," by Bill Edwards. Courtesy, Air Force Art Collection.

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AIR FORCE ALMANAC ISSUE

Almost any information management system can go to work for you in 6 to 8 months.

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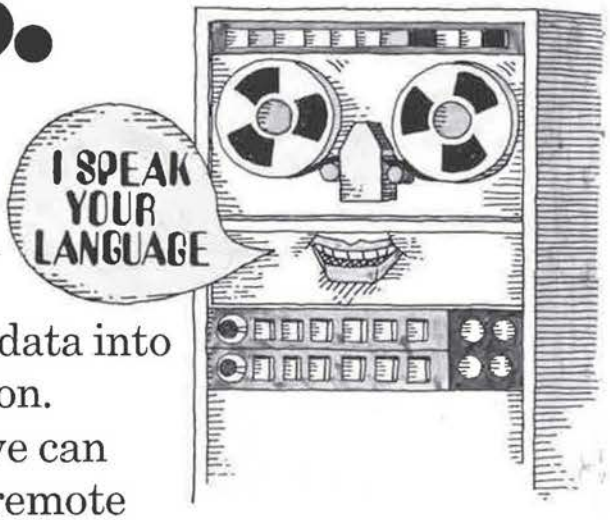

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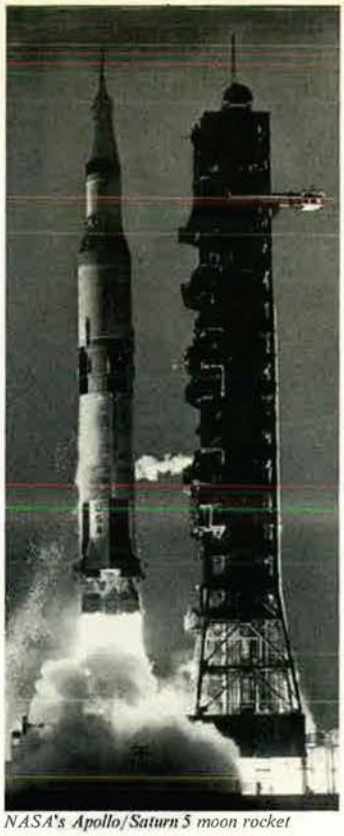
SRAM, Air Force short-range attack missile



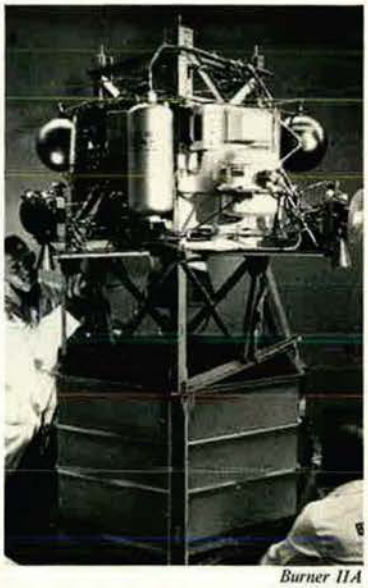
NASA's Apollo/Saturn 5 moon rocket

B-52 eight-jet Stratofortress

Boeing helicopter

***Lunar** Roving Vehicle*

U.S. Air Force Minuteman ICBM



Burner IIA

AWACS, Airborne Warning and Control System

Boeing: serving the nation in defense and space exploration.

SRAM. A Boeing B-52H is shown **carrying** U.S. Air Force short-range attack **missiles.** Now in production, SRAM is an air-to-surface bomber-launched missile. It is designed to **provide** stand-off capability to assist in penetration of sophisticated enemy defense systems.

Lunar Roving Vehicle. This year, two astronauts will set off to explore the moon's rugged surface in the two-seater Lunar Vehicle shown above. The vehicle, one of three designed and built by Boeing for NASA, will be carried to the moon in a storage bay of the lunar module.

AWACS. Eight-engine version of a Boeing 707-320 shown carrying USAF Airborne Warning and Control System. Large radome atop the fuselage will house surveillance radar antenna. AWACS fleet, equipped with radar, communications, computers and **displays,** would serve as airborne tactical **command post, and as an airborne warning and control system. Proposed AWACS fleet would replace existing ground-based radars and older aircraft, resulting in substantial defense** savings.

NASA's Apollo/Saturn 5 moon rocket, the largest, most powerful in the world, launches Americans on voyages to the moon. Boeing builds the first-stage booster, integrates Saturn 5 with Apollo command, service and lunar modules, and performs systems engineering, launch and integration support for NASA on the entire Saturn 5 system.

Boeing B-52, global nuclear weapons carrier and missile-launcher-bomber, continues to provide aerial strength for U.S. forces.

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Burner IIA, USAF's new Boeing-built upper **stage vehicle, is smaller,** less **costly than other upper stages. It's applicable to almost all USAF launch vehicles,** also **scientific experi**ments, weather, navigation or communications satellites.

Minuteman is U.S. Air Force's quick-firing, solid-fuel ICBM. Boeing is weapon system integrator, responsible for assembly, test, launch control and ground support systems.

BOEING

SCRAMBLE!

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The Northrop F-5E. This
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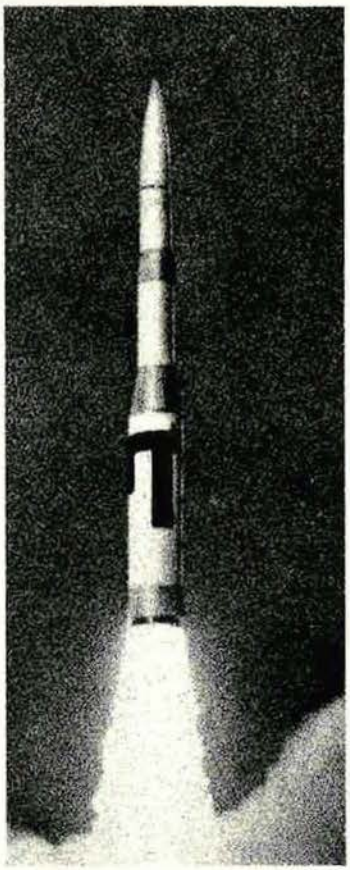
NORTHROP

The First Team does it again. And again. And again.



Autonetics guidance and control systems for Minuteman III surpass requirements in all major categories—accuracy, reliability, weight and survivability.

Hardware delivery continues in complete support of program requirements and within budget.

Not bad when you consider that this bird is the most advanced unmanned aerospace system ever built.

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Minuteman is the product of a First Team. Under Air Force management, the associate prime contractors and thousands of subcontractors and suppliers have armed our nation with an imposing deterrent to war.

Autonetics
North American Rockwell

AIR FORCE MAGAZINE

Published by the Air Force Association

VOLUME 54, NUMBER 5

MAY 1971

THIS MONTH

THIS MONTH'S COVER . . .

Bill Edwards is the artist of "Confab," a painting from the Air Force Art Collection. It focuses on the people who will be tomorrow's Air Force—the theme of General Ryan's report, starting on p. 44.

THE DEPARTMENTS

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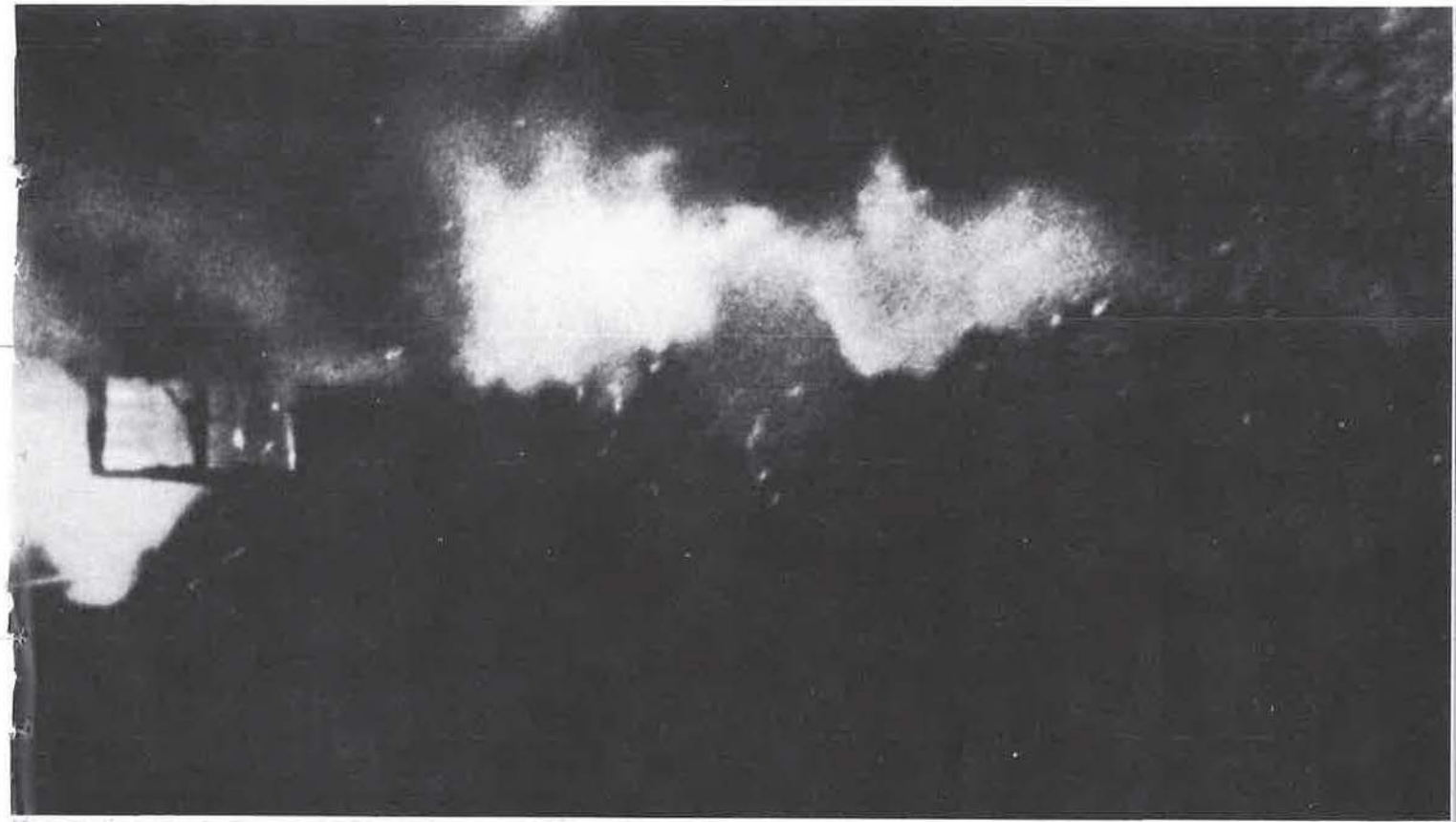

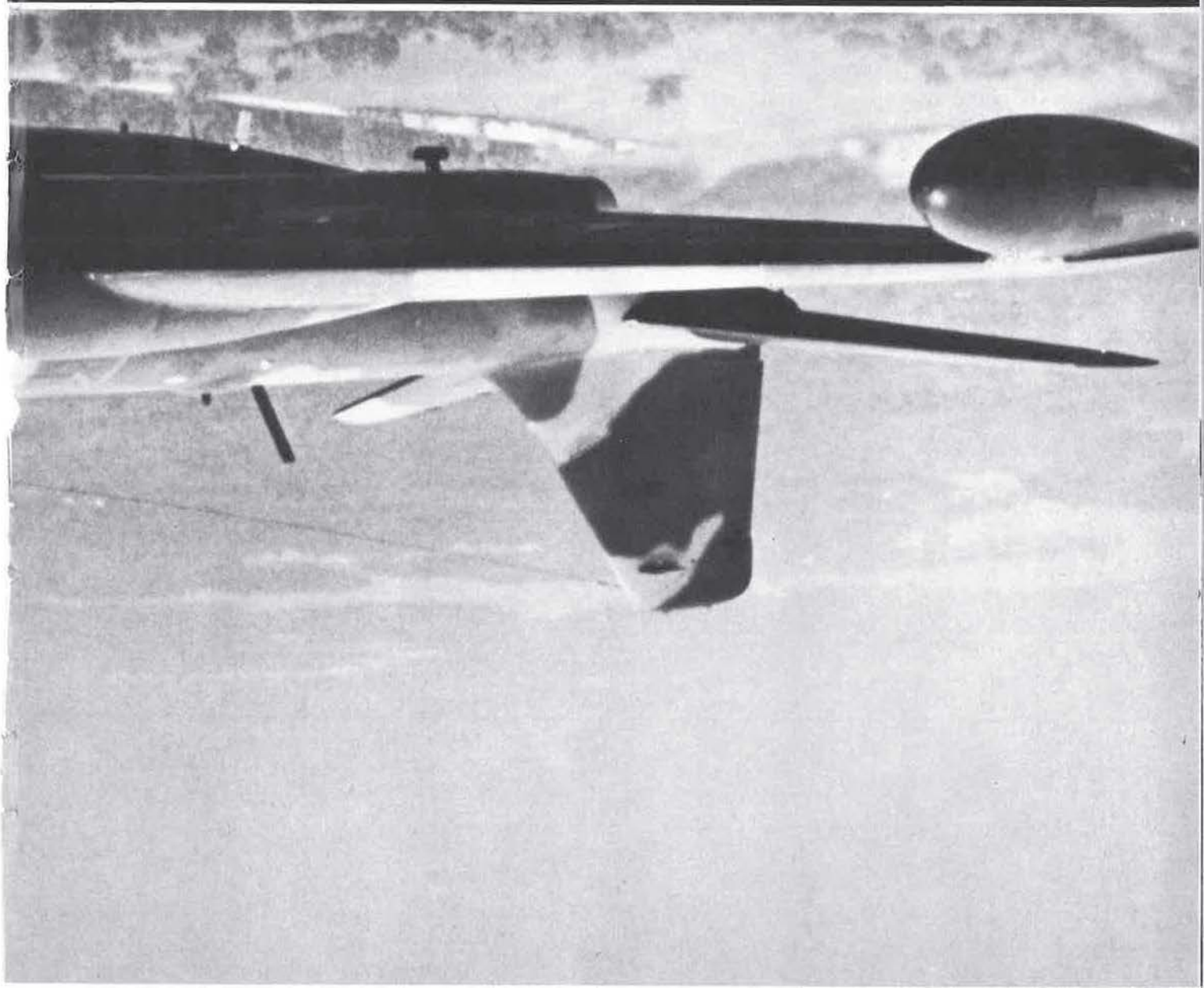

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The B-57G system operator has radar and electro-optical sensor outputs, simultaneously displayed. Targets can be detected and attacked by using any one or a combination of these sensors as dictated by specific target, background, and lighting conditions.

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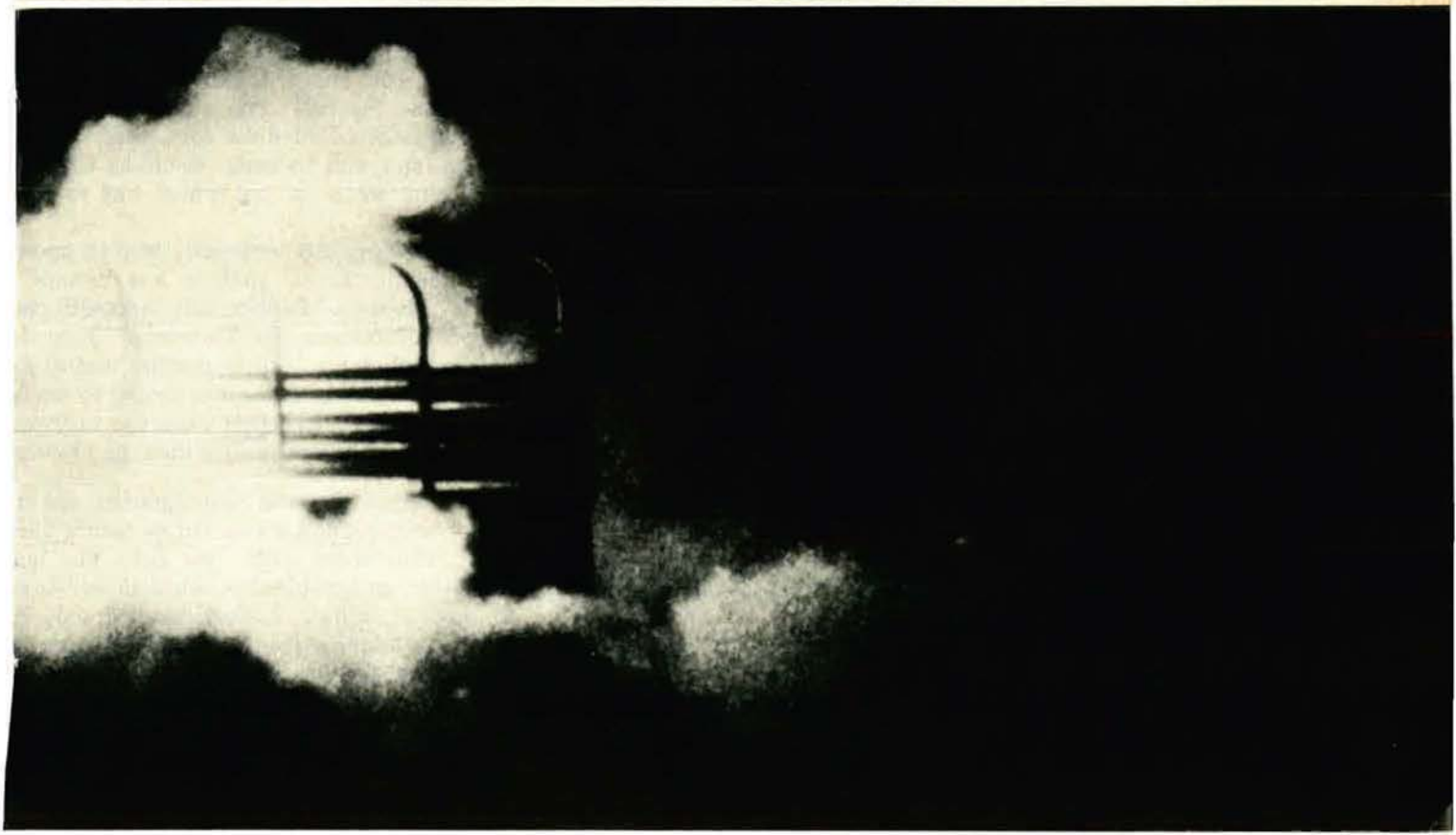


An Editorial

Fogbound o

By John F. Loosbrock

EDITOR, AIR FORCE MAGAZINE

A good friend of mine, whose technical competence is matched by a sharp wit and a broad, good-natured tolerance, once told me about the difficulty he had in identifying "the enemy." He has been closely associated with the military establishment for many years and in a variety of capacities.

"During World War II, it was easy," he recalled. "The enemy was Germany and Japan, Hitler and Hirohito, the Nazis and the Fascists. But as the cold war developed and things got more complicated, I found that the 'enemy,' at least in day-to-day conversation with my colleagues in and out of the Pentagon, was whoever stood in the way of a pet plan or project. It was never the Russians or the Communists. It was those bastards on the second floor, or in the State Department, or on the Hill, or sometimes even in the White House. Wherever I turned, the enemy always turned out to be another American."

He was being hyperbolic to prove a point, of course. But a little hyperbole often helps understanding, and it occurs to us that our friend might have put his finger on a bigger problem than he realized. It is a very human tendency to concentrate so fiercely on one's own problems, enthusiasms, and needs that the big issues tend to go, if not unnoticed, at least improperly evaluated.

The "fog of war" is a phrase of uncertain although surely ancient origin. It is so apt that it has become a cliché. It is a handy way of saying that the confusion of the battlefield makes it well-nigh impossible for anyone, including, or perhaps especially, the commander, to know what the hell is going on here. Well, the fog of war is no more obfuscating than the fogs of peace, of politics, of economics, of foreign policy, of technology, of sociology. It's getting harder and harder for any citizen—average, mediocre, or brilliant—to know what the hell's going on here. We are more and more enveloped in a swirling confluence of all these fogs, while moving over unfamiliar and precipitous terrain, and with so many would-be foghorns blaring at us from right, left, and center, that we know not which way to turn.

We find, to our dismay, that information does not necessarily lead to knowledge. In these days, when sophisticated, computer-driven analysis has become a profession and the analyst too often an advocate, diametrically opposed conclusions may emerge from the same body of information. So knowledge does not necessarily abolish ignorance. It may, indeed, serve both to confuse and to expose new areas of ignorance, about which we hadn't even the knowledge to realize that we didn't know. In putting things right, the intellectual challenge may well prove greater than the physical.

Life was less worrisome a hundred years ago, when the economy was agrarian, the air and waters unpolluted, law was law and order was order, and a man did an honest day's work for an honest day's pay. Or was it? The farmer didn't get rich. The land speculator did. Women perished in childbirth, and children perished in babyhood from diseases that are now only names in medical history. Lake Erie died only recently but it was wounded mortally in the nineteenth century—because, to grind their corn, men dammed the rivers where the fish spawned, cut down the forests, and plowed the land, which silted the waters and killed the plankton. The

Precipice

privy was moved indoors, all tiled and scrubbed, while the raw sewage was flushed away untreated—out of sight, out of mind. The working man, unorganized and slave to the law of supply and demand, more likely worked a day and a half for a day's pay. What man didn't know did hurt him, but he didn't know how or why.

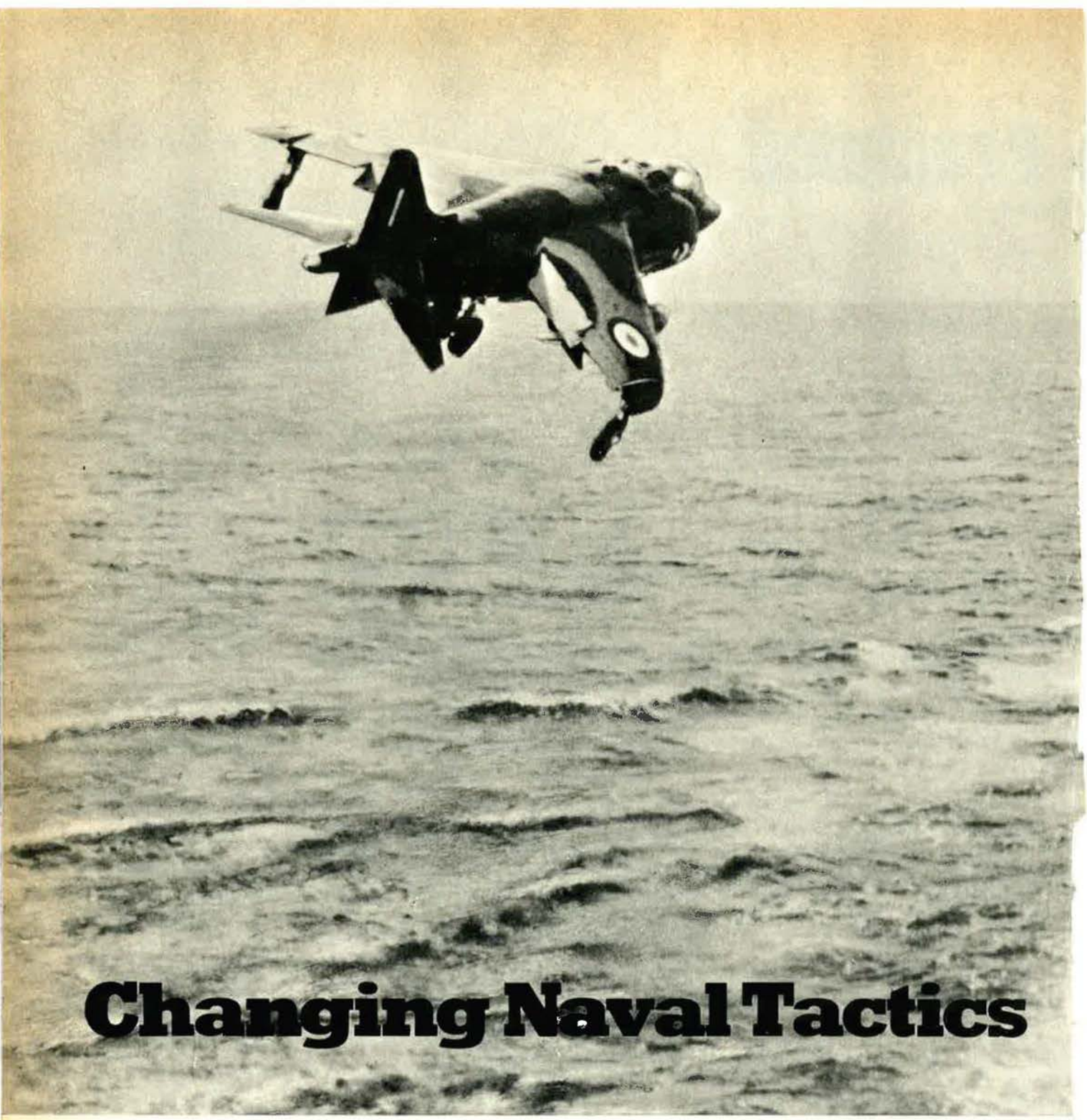
So, you may say, if the good old days weren't so good after all, why aren't the brave, new days better? Well, by and large, they are. But what has happened is that, having become conscious of the need to control our own destiny and believing that we had been acquiring, over the years, the means to do so, we are disillusioned, frustrated, and sometimes frightened by the realization that it ain't all that simple.

John Donne saw it all quite clearly, as poets often do, when he wrote that "No man is an island." Neither is a community, a country, or now even the world. Our humanity is a seamless web, tightly interwoven, and one broken thread anywhere does violence to the whole. But seamless though it be, there is no guarantee that it will not rip, ravel, tear, or twist. And that is what history, after all, is all about. A series of patches and darns on the web of total humanity. Man destroys but man also repairs and often strengthens.

In that sense, it is a good sign that America is going through a period of self-examination and self-criticism. We are divided, yes. But we have been worse divided, when brother fought brother in a bloody civil war. Our lands, water, and air are polluted, yes, but we are committed to cleaning them up. There are poverty and social injustices, yes, but we are committed to eliminating them. We are involved in a frustrating and inconclusive war, yes, but we are committed to ending it. There are flaws in our democratic processes, yes, but we are committed to mending them.

What we cannot afford to do in the heat of self-flagellation is to lose faith, confidence, or pride in our democracy. Imperfect as it may be, it is better than any governmental system yet devised by man, and the fact that Americans do not fear to criticize it openly—to believe in its perfectibility—is but further proof of its worth, if that were needed. If it is worth fixing, if it is worth improving, then it is also worth defending. We must not become so conscious of our domestic shortcomings that we erode the strength needed to maintain the freedom that, in the long run, is basic to the solving of all our problems. Regardless of the long strides we must take toward true domestic tranquility, we dare not say to the world, as Jesus did when the woman was taken in adultery, "Let him who is without sin cast the first stone." For there are those today who would cast the first stone at America, if they could get by with it, knowing full well that a victor need not produce his nonsinner credentials.

All of which gets us back to my friend and his experiences with people who were so busy concentrating on the enemy next door that they forgot about the enemy across the water. There are those who would do us in and we'd better believe it. Not, perhaps, or even probably, through a sneak attack but rather through a buildup of power so obviously superior that our own freedom of action would be curtailed, first abroad then later and inevitably at home. The fog of domestic self-concern cannot be permitted to conceal the precipices along which we must continue to walk in a dangerous world. ■



Changing Naval Tactics

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lift-off and a formidably armed defensive weapon is on its way. Recovery is just as simple. The Harrier is a fixed wing transonic fighter aircraft, with the versatility of a helicopter.

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Airmail

"The Selling of the Pentagon"

Claude Witze's column on the CBS documentary, "The Selling of the Pentagon" ("Airpower in the News," April issue), was released in advance of publication because of the urgency of the topic. Reactions were quick and far-reaching and are spelled out in detail beginning on page 22. They included an exchange of correspondence between the Editor of AIR FORCE Magazine *and various individuals. These are reproduced herewith, together with a sampling of early responses from our readers.*—THE EDITORS.

Gentlemen: I have your letter of March 23 in which you state that you were "distressed to learn that CBS has found mistakes" in Claude Witze's recent article concerning "The Selling of the Pentagon" and you invite me to write a letter citing the mistakes which you will publish.

In all candor, I must point out that I would appreciate your offer more were it not so belated. You widely distributed your copy under the date of March 15. You sternly lecture us about journalism. And yet your article was thus widely circulated, and indeed found its way not only to newspapers but to the *Congressional Record,* without Mr. Witze or anybody else connected with your magazine directly or indirectly asking anybody at CBS News here or in Washington for our comments and responses to the charges (the only contact you made was to our Washington Bureau asking for a picture of Roger Mudd!). Since Mr. Witze so obviously bases his article largely on charges that have already been made from one side of the controversy—the Pentagon side and its friends—it seems to me that elementary journalistic ethics would have required that before Mr. Witze wrote his article and before he made up his mind and before you so widely circulated it, you would have checked us for our side.

Now at this late date to ask for such comments and to remit me to a "letter to the editor" seems to me to be a serious breach of journalistic decency.

As you well know, the official reaction to "The Selling of the Pentagon" has been widespread and in immense —and continuous—detail. As noted, most, if not all, of the charges in Mr. Witze's article had already been made, or were made shortly after March 15, by government officials and their spokesmen. Mr. Witze apparently simply accepted these as true. Rather than deal with this multiplicity of charges piecemeal, we are preparing our own detailed analysis. When it is completed and at such time as we decide that the circumstances are appropriate for its release, I shall include you in the distribution list.

Meanwhile, I assure you that I am confident of the validity of "The Selling of the Pentagon." I have been unable to ascertain at this time that any of the relevant or significant charges leveled against it have substance. I believe on the basis of my personal scrutiny that our editing of the interviews or statements in question fairly reflect what was said in the statements and interviews. I am assured by my associates who were directly involved, and I am persuaded by their assurances, that the charges made by Congressman Hébert and his staff concerning the circumstances in which we obtained the Hébert-Rowe film are mistaken.

I am confident that impartial, professional observers with no ax to grind will, when the dust storm that has been blown up by our hardly impartial critics has settled, confirm that "The Selling of the Pentagon" was a distinguished, important and accurate piece of journalism, and that Mr. Witze's article was not.

RICHARD S. SALANT
President
CBS News
New York, N.Y.

Dear Mr. Salant: Thank you for your letter of March 29. I see no point in pursuing the exchange, except for two comments.

First, a documentary TV news show should stand on its own feet and a critic should not be expected to interview the writers or producers to find out what they really intended to show and to say.

Second, Mr. Witze's research was conducted independently of and antedated by several days any official reactions to your show.

In the interests of good journalism, whether print or electronic, it saddens me that CBS has felt forced to react in such a defensive manner. You had a good opportunity to perform a constructive public service. And you blew it. . . .

JOHN F. LOOSBROCK, EDITOR

Gentlemen: To link my article in the *Columbia Journalism Review* with your criticism of the CBS News broadcast, "The Selling of the Pentagon," is in itself a textbook case of taking sentences out of context. If you had not been so quick with your "scissors and paste" you would have found that my self-criticism was that at the time of Tonkin Gulf, we did too little; you use the article to club the producers of "The Selling of the Pentagon" for doing too much.

Your remarkable confession that you never believed in the impact of broadcast journalism until you saw the live assassination of Lee Harvey Oswald in 1963, and the even more amazing observation that if such a murder took place tomorrow you would believe it is something that was "snipped from a wide variety of source material and glued together to make a visual product that could be marketed to some huckster of toothpaste or gasoline . . ." has the ring of a saloon conversation after an Air Force convention. Such windmilling libels the reputation of Cronkite, Reasoner, Brinkley and others, whose stamina and credibility helped make it possible for this nation to endure a series of assassinations from Kennedy to King to Kennedy. You seem to have no problem believing what television tells you during those seventy-hour space spectaculars. Is it because those spectaculars are telling you what you want to hear?

If I were to write about "The Selling of the Pentagon" for the *Columbia Journalism Review,* as you suggest, I would point out that your review, like many others, compiled a glossary of all the small-type errors which the Pentagon pointed out for you (and for me), but never attempted to refute the central thrust of the broadcast—that millions of dollars of taxpayers' money are being used for propaganda to justify the Vietnam War and the military budget. My critique might even give the broadcast bad marks for not documenting how many defense dollars find their way into publications like AIR FORCE Magazine through advertisements from aerospace contrac-

tors which are part of the military-industrial complex that Presidents Eisenhower and Kennedy fought so hard to control—and failed.

FRED W. FRIENDLY
Edward R. Murrow Professor
of Broadcast Journalism
Graduate School of Journalism
Columbia University
New York, N.Y.

Dear Mr. Friendly: Neither of us, I'm sure, wish to continue what obviously is a fruitless discussion at any length. But there are certain points in your statement of March 31 which I feel compelled to address.

First, Mr. Witze made quite clear both the context and time-frame of his quotation from your article in the *Columbia Journalism Review*. Your reaction, it seems to me, is a bit Pavlovian.

The moon-shot broadcasts are credible to me because I know from other sources that they are happening and because they take place in real time. When there is simulation it is so noted on the screen. The networks have done a magnificent job on these and real-time coverage of other events. This is exactly why I am saddened when their credibility is eroded through needless trickery, as in "The Selling of the Pentagon."

The deception with which we concerned ourselves is quite relevant to the preparation of any documentary—not only to the documentary under discussion. Deliberate misquoting can never be justified. And that is the basic issue, as *The Washington Post* made quite clear in its editorial of this date [April 2, 1971].

I must make it clear at this juncture that Mr. Witze's investigative effort antedated by a good bit any official rejoinders to the program. The implication that he was inspired and spoon-fed by the Pentagon is as unfair as it is untrue. If anything, it was the other way around.

Lastly, defense dollars do not find their way into AIR FORCE Magazine through advertising. These are privately owned industry dollars, which are justified and spent in exactly the same way that laxative, deodorant, and depilatory dollars find their way into network coffers. Indeed, CBS's share of the recruiting advertising campaign sponsored and paid for by the US Army, save the mark, is far greater than our annual advertising income. Somehow, the self-righteous indignation of those who worked on "The Selling of the Pentagon" has not penetrated the network's business offices.

JOHN F. LOOSBROCK, EDITOR

Gentlemen: Claude Witze's column for April is so palpably oversimplified and shrill that it is difficult to believe any thinking adult would take it seriously, but in the event someone does let me add this for the record.

The *Columbia Journalism Review's* winter issue does indeed take the news media to task for aspects of Indochina coverage, but the issue's main thrust clearly is that the most destructive media errors resulted from too-ready acceptance of White House and Pentagon propaganda, especially early in the war.

We would be happy to send a complimentary copy of the issue to any interested AIR FORCE Magazine reader who wishes to see for himself what really was said.

In our opinion, incidentally, Mr. Witze's nitpicking at the CBS "The Selling of the Pentagon" show, like that of other critics in the same vein, does not negate its basic accuracy or the enormous public service it performed in initiating a nationwide dialogue about a significant subject.

ALFRED BALK
Visiting Editor
Columbia Journalism Review
Columbia University
New York, N.Y.

Dear Mr. Balk: I find it difficult to reconcile the contents of your letter of March 24 with the letterhead on which it was written.

Nitpicking, as you call it, is the essence of investigative reporting, a fact which Claude Witze learned from Ted Bernstein and others at Columbia many years ago.

There are thinking adults in the news business who do not share your point of view, as witness the enclosures [editorials] from *The Providence Journal* and *The Washington Post*.

We are appreciative of your offer of copies of your winter issue and will call it to the attention of our readers.

JOHN F. LOOSBROCK, EDITOR

• *We hope our readers will take advantage of Mr. Balk's generous offer of a complimentary copy of the winter issue of the* Columbia Journalism Review. *Just write to him at the address above plus the zip code—10027.*—THE EDITORS.

Gentlemen: Bravo! . . . "The Wayward Press (Tube Div.)," is excellent—well done, timely, and long overdue.

I hope you can force an answer from CBS—if not to force them to change their ways. CBS is guilty of far more than just that single "special." If you were to ask Public Affairs Officers to list CBS's sins in Southeast Asia, you could fill pages in your book just with the list!

My congratulations to you for bringing the matter into the open. I sincerely hope that something will come of it.

Keep up the excellent work.

H. F. (JIM) ROTH
Corporate Publicity Manager
LTV Aerospace Corp.
Dallas, Tex.

Gentlemen: . . . I hope it receives wide circulation. My only regret is that space would not permit the CBS program . . . to be further dissected.

Witze did a fine job with it, as he does with all his writings. . . .

GEN. J. P. MCCONNELL, USAF
(RET.)
Washington, D.C.

Gentlemen: . . . It is as fine a piece of writing of its type as I have ever read. It made me proud that I was in the Air Force and still work for it.

RICHARD J. OVINGTON
Professor of Education
Academic Instructor & Allied
Officer School
Air University
Maxwell AFB, Ala.

Gentlemen: Just a note to thank you for the timely piece dealing with the CBS so-called documentary. . . . You have rendered an important service in getting this out to those of us in the field so promptly.

It is always a pleasure to read the incisive prose of Claude Witze, whom I have known and admired for many years. I think he has done another outstanding job in this column. . . .

LT. GEN. R. G. RUEGG
Commander in Chief, Alaska
Alaskan Command
APO Seattle

Gentlemen: I have just read the advance text of your dissection of "The Selling of the Pentagon," and I came away spinning with fury and incredulity that CBS or any network could descend to such depths of irresponsibility, viciousness, and conscienceless-ness!

My reaction to your piece was two-fold: admiration and gratitude at your magnificent job of analytical reporting; and disgust and anger at the reprehensible way that CBS so orchestrated half-facts, untruths, and out-of-context responses as to weave together a filthy fabric of calumny and deceit. Why, it's almost beyond belief that one of the free world's most important news-gathering organizations could stoop to such a dirty hatchet job!

Airmail

Yet the nabobs of the boob tube are evidently proud of themselves for it. For they're rerunning the program tonight, nationwide, and no doubt will succeed in brainwashing additional millions who have no idea of the out-of-view machinations that you exposed so brilliantly.

Many thanks to you and your magazine for a splendid effort. We have reproduced your text in full and appended it as a supplement to a daily newsletter that we distribute to management and supervision throughout the corporation.

FRANCIS J. GIUSTI
Assistant Director of Public Relations
United Aircraft Corp.
East Hartford, Conn.

Gentlemen: Claude Witze's article is a service to honest reporting and we are badly in need of honest reporting in all of the media.

JOHN R. ALISON
Northrop Corp.
Beverly Hills, Calif.

Gentlemen: . . . Your exposé of CBS is not only illuminating but very well timed.

I am a retired Naval officer with over twenty years in Public Affairs (Relations), both in and out of Washington, and I applaud your magazine and the Air Force Association most heartily. . . .

CBS, in my opinion, has lost all credibility and rightly so. "The Selling of the Pentagon" was a disservice to all of the military . . . and the top-ranking civilians.

CAPT. B. S. SOLOMON, USN (RET.)
Alexandria, Va.

Gentlemen: From one who has spent a number of years in the newspaper business, I would like to say "Amen" to the superb article entitled "The Wayward Press (Tube Div.)," by Senior Editor Claude Witze in the April issue of AIR FORCE Magazine.

Television newscasting, the wayward child of the mass media, is somewhat like the drunk fisherman—"the truth is not in him." Not being content to present the news as it happens, which is exactly what the public expects, television newscasters have to "describe" each news event, telling why it happened, its impact on the stock market, the environment, the social revolution, the President's program, the military-industrial complex, student unrest, and world opinion.

CBS has been guilty of such shenanigans for years. It is called manipulating the news, brainwashing, or simply "let your bias be your guide." This involves quoting speakers out of context, unfavorable camera angles, using old film clips, etc.

CBS, and to a lesser degree, other television networks, appears to have extreme difficulty in separating fact from opinion. Unfortunately, the opinions of most television networks are based so far out in left field that anything "right" with America fails to focus on the boob tube.

I have been present at the scenes of demonstrations and civil disturbances and, believe me, to see the real thing (which is often a staged production) and to watch it on television is as different as night is to day.

The credibility gap of television newscasting makes the Grand Canyon look like a snail trail. The FCC should establish a "Truth Commission" to investigate the continued pollution of the public airwaves by news manipulators.

Newscasters, as well as news specials, should be ordered to report the news in an objective manner, free from any opinionated remarks. Editorial opinion, or analyses of the news, should be a stated and separate part of all news programs and news specials. Walter Cronkite, the most knowledgeable aerospace newscaster, is objective in his reporting, and Eric Sevareid's analysis of the news is a separate part of the program.

CBS, caught with its pants down in the Pentagon smear story, should be ordered by the FCC to give equal time to any organization, military or civilian, willing to outline the details of CBS's "Big Lie" techniques in this particular incident, as revealed in Claude Witze's article. Otherwise, the lie will remain "fact" to millions of gullible television viewers who innocently believe that the camera, or boob tube, cannot lie.

RAY E. RICKETTS
Richmond, Va.

Gentlemen: . . . I think it is one of the greatest you have ever done. I just wish everyone in the country would read it.

GEORGE G. TROUTMAN
General Dynamics Corp.
Washington, D.C.

Gentlemen: For whatever it is worth, I am inspired to suggest that the clearly maligned victims of this broadcast have a sound legal grievance against CBS News—as well as a moral responsibility to American taxpayers to set the TV-distorted record straight—and should, forthwith, demand that the FCC force *all stations* that carried the February 23 attack on the military establishment and the defense industry to grant them equal time for an uncensored reply. This, of course, should be on the same day of the week and the same hour of the day as these stations carried "The Selling of the Pentagon"—with automatic cancellation of their telecasting franchises if they fail to comply.

C. B. ALLEN
Moorefield, W. Va.

Gentlemen: . . . Considering what a biased, poorly researched "documentary" "The Selling of the Pentagon" was, it is good to know that a few professionals have taken CBS to task for their outrageous attack on the Department of Defense in general (and Pentagon public affairs in particular).

J. N. HORROCKS, JR.
Executive Director
Defense Orientation Conference Association
Washington, D.C.

Gentlemen: I just read your commentary on the CBS "documentary" entitled "The Selling of the Pentagon." It is excellent and I only wish I could think that even a reasonable proportion of those who were exposed to the CBS "documentary" could also have the opportunity—and would take it—to read your article.

My congratulations on a fine piece of journalism!

LT. GEN. LAURENCE C. CRAIGIE, USAF (RET.)
Lockheed Aircraft Corp.
Burbank, Calif.

Gentlemen: . . . We people in the South have long and frequently pointed out that the television and other news media did not accurately portray or report the actual facts and circumstances, that they were biased and prejudiced, and that the television screen could be warped to portray falsehoods. It is refreshing to know that others are coming to realize that truth.

PORTER W. PETEET
Greenwood, Miss.

Gentlemen: Your article, "The Wayward Press (Tube Div.)," was most timely. . . .

Tampering with the truth has become far too common—and dangerous—a practice in our public media, and the reader/listener/viewer can only wonder at the loss of integrity and the motivations of those who are making media policy. Your article was most useful since it provides the

pegs of proof, without which too many of us know we've been had, but not how.

GEN. DAVID BURCHINAL
Deputy Commander in Chief
Hq. US European Command
APO New York

Gentlemen: . . . Senior Editor Claude Witze . . . and AIR FORCE Magazine have done a great service with this research and this report. I thank you for doing it, and for distributing it. . . .

JOHN H. BICKERS
Ass't to the Corporate
Vice President
External Relations
McDonnell Douglas Corp.
St. Louis, Mo.

AFA's Silver Anniversary

Gentlemen: . . . The issue provides an excellent history of the men and events that helped to make the Air Force Association a great organization. The many accomplishments of the Association, both direct and intangible, and its support of the Air Force are interestingly and concisely presented.

. . . Your magazine . . . continually keeps Air Force members informed about important issues. Your writers demonstrate in-depth knowledge of the aerospace environment and present technical material in language easily understood. . . .

GEN. JOHN D. RYAN
Chief of Staff, USAF
Washington, D.C.

Gentlemen: . . . I want to congratulate you and all of those who have participated in making the Air Force Association the great organization it is.

You are to be commended for the great magazine you publish.

Best wishes for continued success to you, the Association, and all of the dedicated members.

D. J. HAUGHTON
Chairman of the Board
Lockheed Aircraft Corp.
Burbank, Calif.

Gentlemen: . . . One of the finest in a long series, and an excellent commemoration of the Air Force Association's twenty-fifth birthday. I was particularly impressed by AFA President George D. Hardy's article on "AFA's Mission: Power for Peace." It is useful to be reminded periodically of AFA's origin, mission, and its past achievements so that we may better appreciate its future role and potential. Considering AFA's many contributions to our national security, the wisdom of Gen. "Hap" Arnold's vision regarding the need for such an organization becomes more apparent with each passing year.

Recently, I was honored to participate in another silver anniversary—that of Air University and its three professional military education institutions—on March 12, 1971. At this gathering of former AU commanders and commandants of Air War College, Air Command and Staff College, and Squadron Officer School, we were similarly reminded of the foresight of AU's founders and the importance of our educational mission, to which AFA has also made such a significant contribution. [*See photo, page 95.*]

My main purpose, however, is simply to express a word of thanks to you for a job well done. The manner in which AIR FORCE Magazine analyzes and discusses complex issues provides an extremely valuable service to the Air Force and the nation, and those of us concerned with professional military education appreciate your efforts and hope for your continuing success.

BRIG. GEN. GEORGE G. LOVING, JR.
Commandant
Air Command and Staff College
(AU)
Maxwell AFB, Ala.

Gentlemen: . . . I congratulate you and your fine staff for all the years of outstanding public service. Your informative, highly readable, and timely magazine has held my complete interest and attention without abatement.

BRIG. GEN. VERNON R. TURNER
Dir., Aircraft & Missiles
Office of the Assistant Secretary
of Defense
Washington, D.C.

Gentlemen: . . . This issue—as well as all others—is very important in keeping the Active as well as Reserve Component and retired officers and airmen knowledgeable on the part the Air Force plays in implementing our national strategy and, maybe more importantly, keeps the Air Force "family" together in pursuing Air Force goals. . . .

MAJ. GEN. COURTNEY L. FAUGHT
Directorate of Military Support
Washington, D.C.

Gentlemen: . . . The nostalgia in it covers a good part of my service career, and I remember fondly milestones (such as publication of *The Wild Blue*) wherein our paths merged.

Any comments I might make about the magazine would be general and would, I think, cover two basic areas. First, I would have you keep in mind General Arnold's genesis of thought for the beginning of the society. There was never a time when the needs of defense needed greater definition and articulation. The independent organ of airpower must be able to bring these needs to its readers with great skill and with such irrefutable authority that its articles become texts for those less versed. I think that AIR FORCE is more and more coming to grips with the pertinent issues today.

Secondly, it is all too easy for a magazine with X thousand members "in the bag" to tend to drift its own way, irrespective of its readers. The new AIR FORCE Magazine seems to recognize that the people in the Air Force have changed. We are faced with a generation of airmen which is altogether more responsive, more articulate, more demanding. I think that innovations such as articles by active airmen, the "Jane's Supplement," and the fresh writing style of John Frisbee do much to accommodate and absorb this new generation into your readership.

If you can meet both these needs on a dynamic basis, then I believe that the Air Force Association can serve effectively the needs of its role. Those needs were never more critical.

GEN. BRUCE K. HOLLOWAY
Commander in Chief
Strategic Air Command
Offutt AFB, Neb.

Gentlemen: . . . As a successor to "The Official Service Journal of the U.S. Army Air Forces," put out under the direction of Gen. H. H. "Hap" Arnold in 1942, the AIR FORCE Magazine has seen many changes—but they have all been constructive changes and not just for the sake of change. The recent change in format of the magazine and the introduction of articles such as "anecdotes," "Letter from Europe," and "Jane's All the World's Aircraft," have made it a more informative and very interesting magazine.

Keep up the good work. I'll be looking forward to receiving a golden anniversary issue.

LT. GEN. FRED M. DEAN
Commander
Hq. Allied Air Forces Southern
Europe
Naples, Italy

Gentlemen: The Twenty-fifth Anniversary Issue of AIR FORCE Magazine is a superbly organized and powerful reminder of our blue-suit heritage. Highly readable and profusely illustrated, your anniversary edition reminds each reader of the development of both the United States Air Force and the Air Force Association. . . .

There is no doubt that AIR FORCE Magazine leads in presenting serious, in-depth discussion of aerospace considerations of vital importance to our nation's security. . . . It is extremely important for you to continue to pub-

Airmail

lish articles pitched to a relatively high intellectual plane—articles which accurately inform the American public of the many, often complex, facets of broader issues, and at the same time provoke responsible thought and discussion and ultimately contribute to far-reaching decisions.

There is a very great need for the service which you so effectively provide. . . .

In addition to the more thought-provoking articles, your use of action stories of airmen in combat and other dramatic situations stimulates reader interest and builds *esprit*. Your cartoons and regular features round out a most interesting publication. . . .

MAJ. GEN. H. L. HOGAN, III
Director of Information
SAFOI
Washington, D.C.

Gentlemen: . . . Its writing, subject matter, and general appearance are, as usual, of the highest quality.

We were pleased, incidentally, to see that your new department, "Jane's All the World's Aircraft Supplement," was initiated with a fine story on our S-67 Blackhawk helicopter.

W. A. KUHRT
Division President
Sikorsky Aircraft, Div. of
United Aircraft Corp.
Stratford, Conn.

Gentlemen: . . . Over the years I have had the AIR FORCE Magazine on my "must read" list, and I am pleased to report that it has lived up to my expectations.

May I compliment you on your continually outstanding publication and again offer my congratulations on this historic occasion.

MAJ. GEN. JOHN C. GIRAUDO
Dir., Legislative Liaison
Office of the Secretary of the
Air Force
Washington, D.C.

Gentlemen: . . . an impressive publication . . . [Mr. Hardy's] article was thought-provoking.

You have achieved an enviable record, both in the AFA and in the magazine, and we are proud to be a part of it.

T. A. CAMPOBASSO
Vice President, Marketing
Collins Radio Co.
Dallas, Tex.

Gentlemen: For the past twenty-five years AIR FORCE Magazine has served as a standard of excellence for aviation/space journalism. I join with all your readers in saluting the contributions your straightforward, perceptive reporting has made to the field of airpower during the past quarter century.

Each issue of your magazine reflects the hard work and extensive research which go into your articles. The unquestionable quality of your publication speaks for itself.

Your Twenty-fifth Anniversary Issue is no exception. . . .

LT. GEN. JOHN D. LAVELLE
Vice Commander in Chief
Pacific Air Forces
APO San Francisco

Gentlemen: . . . AIR FORCE Magazine is particularly valuable to me since in my job I am not actively associated with the day-to-day developments in the Air Force. I find that the magazine is an excellent way for me to supplement my professional reading and to stay current with developments in the Air Force and in the aerospace community in general.

. . . The Anniversary Edition [is] a fitting tribute to the twenty-five years that you have been in business in supporting us so superbly.

BRIG. GEN. JAMES D. HUGHES, USAF
Military Assistant to the President
The White House
Washington, D.C.

Gentlemen: . . . For the past twenty-five years the Air Force Association and your excellent magazine have supported the Air Force as a vital element of our nation's defense. The motto chosen for the Association's silver anniversary medal—"Power for Freedom"—symbolizes your dedication to the principle of keeping this country militarily strong.

General Merrell and all the members of the Air Force Logistics Command, military and civilian, are dedicated to one purpose: to support the operational forces of the Air Force so that they can make their proper contribution to our nation's military power.

All of us offer our congratulations on your silver anniversary.

LT. GEN. FRANCIS C. GIDEON
Vice Commander
Air Force Logistics Command
Wright-Patterson AFB, Ohio

Gentlemen: . . . I have read the [Twenty-fifth Anniversary] Issue with great interest and find it difficult to select the article I like best, because all of them are outstanding. "The Many Faces of Tragedy," dealing with the treatment of US prisoners of war in Southeast Asia, is especially timely and I commend your publication for its untiring support of the POW/MIA programs.

Congratulations to the Air Force Association on its twenty-fifth anniversary. The AFA has been a consistent backer of the USAF over the years and its efforts are deeply appreciated.

MAJ. GEN. R. M. HOBAN
Commander
Hq. Ogden Air Materiel Area
(AFLC)
Hill AFB, Utah

Gentlemen: . . . I thoroughly enjoyed reading it and reminiscing about the past quarter century. It was an eventful period, both for the Air Force and for AFA.

Through the years, AIR FORCE Magazine has consistently built public awareness and understanding of vital issues—such as the plight of the MIA/POWs, which grew into a national cause after your magazine first told the story so magnificently.

My congratulations on your achievements. I look forward to sharing the next twenty-five years with AIR FORCE Magazine. . . .

LT. GEN. ROBERT J. DIXON
Deputy Chief of Staff, Personnel
Hq. USAF
Washington, D.C.

Gentlemen: . . . The Anniversary Issue is typical of the high-quality reporting of airpower activities and other major topics of national concern which we have come to expect from the Air Force Association.

Best wishes for another quarter century of outstanding service to this country and the Air Force.

LT. GEN. GLEN W. MARTIN
Vice Commander in Chief
Hq. Strategic Air Command
Offutt AFB, Neb.

Gentlemen: Please accept my hearties congratulations on the twenty-fifth anniversary of the Air Force Association For two and a half decades, AFA has been an unofficial but most articulate and influential spokesman for the USAF and has made an outstanding contribution toward increasing public understanding of airpower. I am pleased to count myself among its members.

The formal Anniversary Issue . . . is a splendid documentation of some of the memorable events and people which shaped and colored our early history plus the unusually professional and well-written topical material. It was good reading. . . .

MAJ. GEN. DEWITT R. SEARLES
Commander
327th Air Division, PACAF
Taipei, Taiwan

The new approach to landing... a cushion of air.

This aircraft has no wheels. It lands, takes off and taxis on a cushion of air. Over ice, snow, mud. Even stump-filled fields. As well as conventional hard-surfaced runways. It's the unique Air Cushion Landing System (ACLS) now being developed for use on military transport aircraft by Bell Aerospace under contract from the Air Force Flight Dynamics Laboratory at Wright-Patterson Air Force Base in Dayton, Ohio.

The system, which was pioneered by Bell and the Air Force, is based on the surface effect principle. Test flights made by Bell since 1967 with an LA-4 testbed aircraft have proved highly successful . . . with smooth-as-silk performance on a wide variety of surfaces, including water.

In addition to its military applications, the ACLS could well be the vital key to opening up commercial air service for thousands of smaller communities where conventional heavy, costly runways are not feasible.

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Division of Textron Buffalo, New York

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The ACLS-equipped LA-4 has landed and taken off on water, and has traversed muddy, ice-covered fields with ease.

The air cushion bag inflates for landing and takeoff, deflates to aerodynamically hug the underside of the fuselage during flight. Artist's concept shows use on military transport.

The focus is on

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Airmail

Gentlemen: . . . Warmest congratulations to the Air Force Association on the occasion of its silver anniversary. The Twenty-fifth Anniversary Issue of AIR FORCE Magazine is certainly a fitting commemorative of that auspicious event.

Over the past two decades, AIR FORCE Magazine has established a deservedly fine reputation for accurate and factual reporting of the objectives, accomplishments, and needs of the United States Air Force. Additionally, it has become a respected forum for presentation and discussion of national issues pertaining to aerospace. Your balanced coverage of weapon systems research, development, and acquisition achievements and problems has been of particular value to me and to the people of the Air Force Systems Command.

My best wishes for continued leadership in aerospace journalism.

GEN. GEORGE S. BROWN
Commander
Air Force Systems Command
Andrews AFB, Md.

B-29s Yet

Gentlemen: In an unsigned article entitled "The Combat Commands Mark 25 Years," which appeared in the March issue, in the section devoted to SAC, on page 62, appears the statement:

"By 1949, the transition had begun to the first of the jet bombers, the B-47. A year later, the Korean War put SAC to work in combat, albeit with older B-50s."

B-29s please!

MACKINLEY KANTOR
Sarasota, Fla.

Speaking Tour

Gentlemen: I want to thank you for the excellent coverage in AIR FORCE Magazine of our POW/MIA speaking tour [March '71 issue].

As you know, generating public concern and community action in behalf of missing and detained American servicemen may well be a key factor in their eventual release. Let us hope that homecoming day for these men and their families is in the very near future.

REP. CLARENCE E. MILLER
Member of Congress
Washington, D.C.

Reasoning Why

Gentlemen: "The American Military —Theirs to Reason Why," by Col. Malham M. Wakin, in the March issue of AIR FORCE Magazine, is a fine article and blows a lot of fresh air into a subject which has been stifled too long by stuffy thinking and writing. It should contribute significantly to impressing the best of our youth with the enlightened character of the Air Force, and might also help some of the "Old Guard" in the Air Force to reevaluate their policies and narrow the communications gap with the "new emerging American."

The future of the Air Force will depend not so much on weapons but on the quality of men and women that are attracted to, retained, and contribute to it. You need more of Colonel Wakin and his "tribe."

COL. BERT S. HARRIS
Alexandria, Va.

Gentlemen: I disagree to a limited degree with some of the thoughts expressed in Colonel Wakin's article. . . . Rather than an uninteresting dissertation on my points of disagreement, I will merely nitpick one statement.

In column 1, paragraph 3, page 58, he says: "Citizens are not obliged to obey laws that are clearly against the common good, or immoral in some other way."

Not only is that statement erroneous, but if Colonel Wakin tries it, he will very likely wind up in the jug.

COL. J. L. WARREN, USAF (RET.)
St. Petersburg, Fla.

• *Colonel Wakin replies:* I fear [Colonel Warren] missed the context of the statement he chose to disagree with. It is certainly probable, as he suggests, that disobeying a law that is "clearly against the common good or immoral in some other way" can get a person arrested. Disobeying an immoral order can also get one court-martialed. Neither of those consequences disturbs every man's obligation to act morally. In any appeal to the US courts, we would hope that a law clearly against the common good would be declared void or unconstitutional. The Uniform Code of Military Justice provides similar redress for "unlawful" orders.

ABRES Program

Gentlemen: The article "Minuteman—First Among Equals" [by Edgar Ulsamer] in your March 1971 issue contains one error that I feel should be corrected. The ABRES Program, established by DoD "to provide advanced reentry technology and devices for the services," is managed by the Air Force, not ARPA. In fact, ABRES is funded as part of the Air Force budget.

Brig. Gen. Almer Martin, SAMSO Deputy for Reentry Systems, is the ABRES Program Director. In keeping with his triservice mission, General Martin has three assistant deputies: Col. Robert (Tommy) Thompson, USAF; Col. Ralph Miles, US Army; and Capt. George Dickey, US Navy. General Martin also is the Director of the Nike Targets (Safeguard Support) Program which provides the ICBM targets used for the Safeguard System's Spartan and Sprint missile launches.

MAJ. WILLIAM T. CUDMORE
ABRES/Nike Targets Systems Office
Hq. Air Force Systems Command
Andrews AFB, Md.

• *Our thanks to Major Cudmore and our apologies to the gentlemen and organizations mentioned. It is rare indeed that an Air Force source fails to give due credit to his own service. This time, inadvertently, it happened.*—THE EDITORS.

UNIT REUNIONS

MAPA Fly-In

The 1971 Military Aircraft Pilots Association fly-in convention will be held July 2–5, 1971, at the Oswego County Airport in Fulton, N.Y., in conjunction with the 6th Annual N.E. Regional Fly-In and Sport Aviation Days Air Show. Write

MAPA
P.O. Box 295
Dryden, N.Y. 13053

98th Bombardment Group (H)

The annual reunion of the 98th Bombardment Group, "The Pyramiders," will be held July 20–22, 1971, at the Ramada Inn in Colorado Springs, Colo. Men who served in this Group from 1942–45 and are not on the mailing list should contact

W. H. Bolling
Rt. 3, Box 67
Gonzales, La. 70737

362d Fighter Group

The annual reunion of the 362d Fighter Group, 9th AAF, WW II, will be in Atlanta, Ga., in July. For further information please contact

William K. Marles, Pres.
362d Fighter Group Assoc.
2838 Blue Brick Dr.
Nashville, Tenn. 37214

379th Bombardment Group (H)

The first reunion of the 379th Bombardment Group (H) of World War II will be held at the Antlers Plaza Hotel, Colorado Springs, Colo., July 5–8. Men who served in this group and who are not on the mailing list should contact

Col. E. H. Millson, USAF (Ret.)
341 Raquel Lane
Los Altos, Calif. 94022


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Now motorists along this solitary 95-mile stretch of highway have someone to talk to.

Every half mile.

Interstate 80 runs through parts of Pennsylvania so sparsely settled that bear and deer may still outnumber people.

And interchanges are often ten miles apart.

Until recently, this was no place for a stranded motorist.

Now 370 roadside emergency telephones are helping to make this section one of the safest highways in the state.

Each yellow call box is connected to one of the five State Police stations in the area.

In an emergency, the motorist can pull to the side of the road, lift the receiver, and instantly get help.

A light flashes on a phone back at police headquarters indicating the driver's direction of travel. And numbers on the call box enable him to give his exact location.

The emergency telephones are located at least a dozen feet from the apron to avoid the danger of the caller being side-swiped by a passing vehicle.

The American Telephone and Telegraph Company and your local Bell Company cooperate with local, state and Federal authorities to make the telephone serve you better.

In this case, to help make highways safer.

Airpower in the News

By Claude Witze

SENIOR EDITOR, AIR FORCE MAGAZINE

The Wayward Press (Continued)

WASHINGTON, D.C., April 10

A number of us newspaper buffs subscribe to a chummy little weekly called the *West Virginia Hillbilly*. It is published in Richwood, W. Va., by a man named Jim Comstock, who leaves his imprint on each page with a sense of journalistic charm and incisiveness that makes the paper read like woodpulp with a personality. For this Almanac Issue of AIR FORCE Magazine, which hangs around offices and bookshelves longer than most of our output, there is a Jim Comstock fable that must be recorded for readers of "The Wayward Press."

As Mr. Comstock tells it, in his column called "The Comstock Load," a certain village priest felt required to exact penance from a parishioner who had been spreading a lie about one of his fellow townsmen. This reckless person was told to take a pillowcase of goose feathers and put one feather before each door in the village. The task completed, the man reported to the priest, who told him then to go out and gather them all up. The man protested that this was impossible, because the wind would have blown most of them away. Then the priest explained the lesson. Just as feathers aimlessly scattered cannot be retrieved, neither can malicious words.

Editor Comstock then goes on to demonstrate how errors in newspapers have a way of perpetuating themselves. The written word is hard to erase. Once a mistake gets into print, it becomes almost impossible to catch up with it. It is always in some file or morgue, as newspapers call their clipping collection, or stuffed away in a desk or pocket. If the mistake caused some kind of anguish in the first place, the pain can last forever. If the thing was an evil distortion, no man can straighten it out completely and irrevocably.

The basic reason for bringing this up is that the wave of written and vocal assault on our national security system—the military-industrial complex, to its critics—seems to be reaching a crescendo. And the truth suffers an appalling amount of abuse in these attacks. It seems to us that the Jim Comstocks operating in this part of the social and political spectrum have a new responsibility to make sure the feathers stay in the pillowcase. Misinformation and misrepresentation should not be tolerated. In a recent essay in *Commentary* magazine, Daniel P. Moynihan, a former adviser to three Presidents, finds American journalism marred to a great extent by "the absence of a professional tradition of self-correction." He made the point more strongly:

"Misrepresentations of government performance must never be allowed to go unchallenged. The notion of a 'one-day story,' and the consoling idea that yesterday's papers are used to wrap fish, are pernicious and wrong. Misinformation gets into the bloodstream and has consequences."

That, of course, is the main reason why "The Wayward Press" was launched on these pages in mid-1969. It attracted only normal attention until last month, when television took its first turn on the rack. Our examination of "The Selling of the Pentagon," a "documentary" now seen twice on a coast-to-coast TV network, hit sensitive nerves. The Columbia Broadcasting System was, of course, infuriated. We have no way of knowing how many of their viewers, those who saw both the show and the April issue of AIR FORCE Magazine, were delighted to learn the facts about how film can be spliced into distortion. There were a great many.

Aside from CBS, the single correspondent to object to our treatment of "The Selling of the Pentagon" was a "Visiting Editor" at the *Columbia Journalism Review* *(see "Airmail," page 12)*. He accuses us of nitpicking, and doubts that "any thinking adult" will take our observations seriously. Now, the *Columbia Journalism Review* is published at the Columbia University Graduate School of Journalism, where nitpicking at one time was considered a professional responsibility. This aging nitpicker, it should be known, learned the basics of nitpicking at that same School of Journalism, where he took his lessons from a couple of experts. It was a long time ago, in the early 1930s, and among his teachers were Robert E. Garst and Theodore M. Bernstein who, in 1933, published a textbook on nitpicking called *Headlines and Deadlines*. It was a manual for us nitpickers, and may have been the best such manual ever written. In the years since, Mr. Bernstein has continued his efforts to glorify nitpicking. For his fellows on the New York *Times* he has issued a periodical on nitpicking called *Winners & Sinners*. He has written three more books on the fine art of nitpicking. They are *Watch Your Language* (1958); *More Language That Needs Watching* (1962); and *The Careful Writer* (1965). While the recent emphasis has been on the utilization of words, the real aim is the same as it was years ago on the School of Journalism copy desk: Get it right! This graduate doubts that Ted Bernstein would appreciate a young whippersnapper who turned up his nose at the journalistic requirement for complete and absolute accuracy. Neither would Jim Comstock, over at the *West Virginia Hillbilly*.

Being this far into the subject of the attitude of the conventional press toward the way some television producers use scissors and glue to distort the record and accompany it with highly inaccurate script preparation, it is impossible to skip what has appeared in print.

Jack Gould, who has been writing about TV for the New York *Times* for many years, wrote three articles for his paper about "The Selling of the Pentagon," all of them laudatory. On February 24, he said CBS News "packed its old-time wallop last night in a brilliant documentary." He accepted, at face value, the "traveling colonels dabbling in foreign policy" and the film of Rep. F. Edward Hébert "making a propaganda film for the Department of Defense." These were two of the most outrageous misrepresentations in the show. Mr. Gould hailed the hour as a "proverbial fresh breeze in electronic journalism." He concluded that CBS had "bravely and skillfully lifted the lid on a story of national importance." On March 1, TV Reporter Gould had a piece in praise of Richard S. Salant, President of CBS News, describing him as a man who had successfully made the transition from lawyer to journalist, much in the manner of a person walking on water. Six days later, on March 7, Mr. Gould went the limit and called "The Selling of the Pentagon" a "magnificent blow for progress in television" and declared, without tongue in

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SPERRY RAND

cheek, that the program was "impeccable in its integrity."

There are many other examples. A lady named Barbara Haddad Ryan wrote in the Denver *Post* that the CBS program "was a model of that all too rare quality—journalistic guts." The New York *Post* said the subject "has rarely been more aggressively and effectively explored by television." In the Boston *Herald Traveler,* Eleanor Roberts wrote that the show was "a hard-hitting, no-punches-pulled exposé" that "should make every citizen burn with rage." Frank Getlein commented in the Washington (D.C.) *Evening Star* that the CBS show was "the most important television program to come out of the tube in years." *Newsweek* agreed, and said it "constituted a landmark of sorts," whatever its shortcomings.

Probably the most unusual performance in the press was put on by the Washington *Post.* Reporter William C. Woods at first accepted the show as gospel and sounded a bit disappointed when he had to report that the local outlet, WTOP-TV, had received large numbers of phone calls from outraged citizenry, highly critical of CBS. Mr. Woods himself felt that "The Selling of the Pentagon" was in "the finest tradition of the muckraking TV documentary." He said that "the CBS team brought in facts and figures that needed no editorial support," and turned out "a gutty and intelligent show." On March 24, after the second national broadcast, he returned to the subject with a column in which he acknowledged the program had its critics, who were given some air time the night before. These included Vice President Agnew, Secretary of Defense Laird, and Congressman Hébert. He also wrote that AIR FORCE Magazine found CBS with a credibility gap and gave examples of our allegations of misrepresentation. The reference to AIR FORCE Magazine was in early editions of the *Post* that morning, but had been deleted from Mr. Woods's column by the time the metropolitan editions went to press. Substituted were details of what had been said by Agnew, Laird, and Hébert, plus a statement by CBS News President Salant to the effect that "no one has refuted the essential accuracy. . . . The validity of the broadcast remains unscathed." The report in AIR FORCE Magazine received no further attention in the *Post,* except for a later reference in the society pages.

As a reluctant dragon, the *Post* entered the fray only when it was aroused by Vice President Agnew's Boston speech. It called "The Selling of the Pentagon" a film that "constituted a highly valuable and informative exposition" but had to concede to Mr. Agnew that he had a point. Said the *Post:* ". . . it is on the subject of editing that we believe CBS may be most vulnerable." Now the fat was in the fire. Mr. Salant of CBS responded with a heated defense that forced the *Post,* no less than five weeks after the original broadcast, and two weeks after AIR FORCE Magazine released its analysis, to print some of the details.

For the most part, they were identical to the ones we had publicized. The editorial position was precisely the one taken by this magazine. The *Post* found CBS "editing" at fault because it must have a "damaging effect on public

LET'S KEEP THE RECORD STRAIGHT

AIR FORCE Magazine normally does not engage in postmortems on the instigation and impact of articles we have published. Last month's "Airpower in the News" column by Senior Editor Claude Witze is an exception to that rule. Mr. Witze has contributed his commentary to this magazine each month, without interruption, for the past thirteen years. In the April issue, he elected to devote his space to observations on the Columbia Broadcasting System's controversial national TV documentary called "The Selling of the Pentagon."

Our regular readers will recognize at once that his attention to the program did not break a pattern, but was consistent with previous performances. Almost two years ago, Mr. Witze started a feature in his allotted space, called "The Wayward Press." It has been a rare month since that he has not taken a magazine or newspaper to task for misrepresentation or misinterpretation. He has confined his comments to errors of fact and only to those in his own area of expertise. The approach is one more of sorrow than of anger, for AIR FORCE Magazine itself is part of the press, and Mr. Witze is an experienced reporter who has been pounding Pentagon corridors for some seventeen years. The purpose is to keep the record straight, in our small way.

When, on February 23, CBS put "The Selling of the Pentagon" on the air, Mr. Witze realized at once that here was grist for his Wayward Press mill. He worked steadily collecting the facts until he wrote his April column on March 4. The primary sources were contacted in person. He knocked on doors at the Pentagon and at the home of the Industrial College of the Armed Forces at Fort Lesley J. McNair in Washington. He interviewed staff members of three committees on Capitol Hill and spent an entire afternoon on the telephone, talking to Association of Commerce and industry sources in Peoria, Ill., where the CBS crew had filmed a portion of its broadcast.

The common response Mr. Witze received from everyone contacted was that he was the first reporter to raise questions about the accuracy of "The Selling of the Pentagon." If a pack of inquisitors developed later in the press and government, it certainly appears that Mr. Witze was first to pick up the scent and follow it. By the time we released a preprint of his article on March 15, there were a few critical rumblings of dissent, but nothing substantial until Vice President Agnew mentioned the CBS show, with few details, in a speech at Boston on March 18.

We have been accused of participating in a government-organized and -inspired effort. Nothing could be further from the truth. We were inspired by a sense of outrage at the obvious deception and blatant misrepresentation involved in certain segments of the CBS show. Mr. Witze was not defending the Pentagon, and there is no suggestion of that in his article. He was providing a discerning, well-researched critique of a performance that cried out for it. From the reaction to publication of his essay, it is obvious that such criticism was needed. We have been flooded with mail ever since. There are letters of dissent from CBS and the *Columbia Journalism Review,* as well as from Mr. Fred Friendly, formerly President of CBS News. Every other correspondent, without exception, has been grateful and congratulatory. The letters have come from all over the United States. There was one request for a copy of

confidence in what is being shown to have happened—shown to have been said."

The lone point we are trying to make is that, in our opinion, the press as a whole was derelict in its failure to challenge the honesty of the CBS film. Whatever became of critics? Back in 1969, the Federal Communications Commission in a report (No. 8555, October 17, 1969) expressed the opinion that the public interest is served when the press raises questions about the authenticity of television broadcasts. "It is vital," FCC said, "that the media be subject to scrutiny by critics, and there is, we think, no better way than for news competitors to be constantly checking on each other. The beneficiary of such criticism is clearly the American people. Finally, we note again that broadcast licensees must take such criticism into account, and take all appropriate steps in the light thereof. The key to their continued high standing with the American people is constant vigilance to assure the integrity of their news operations."

In the midst of this fracas, and totally unrelated to the CBS Pentagon effort, some attention was focused on the fact that television networks keep no permanent file of their news broadcasts. This compounds the problem of the goose feathers. Down at Vanderbilt University, in Nashville, Tenn., there is an effort under way to do something about this. The university is getting continued funding for a project started in 1968 that aims to provide a Television News Archive. It will be a permanent collection of videotapes of the daily news broadcasts of the three major networks.

The Vanderbilt project is the brainchild of Paul C. Simpson, a graduate of the university, now an insurance executive. Mr. Simpson, who talked to this reporter on a recent visit to Washington, was spurred into action by surveys that show more Americans rely on television for their knowledge of the world than on any other source of information. With this impact, Mr. Simpson says, "it is difficult for me to understand how historians and scholars can review the course of events in the United States without having these actual programs readily available for review." He continued:

"I do not believe that we would like to see newspapers published today, distributed to the American people, read by them and then destroyed in their entirety so that days, months or years after they could not be reviewed. To make it even more comparable, we could consider that only three newspapers reporting on national news events are published in the United States (all from New York); that because of limited space, only headlines and a lead paragraph can be published on a limited number of news events; that these three national newspapers are destroyed in their entirety shortly after printing and distribution to the public and are, therefore, not ever afterward available for study or review. . . . We believe that this is, in effect, what is happening to television news programs today."

The Vanderbilt project is designed to overcome this situation. It will make it possible, in the future, for a newspaper television critic to be just that. The Archive will be available if the TV news programming needs examination, and the media can bring themselves to exercise the kind of internal discipline now so lacking.

Even files of the *West Virginia Hillbilly* stand on the bookshelf in perpetuity. Maybe that's why Editor Jim Comstock is more concerned about goose feathers than are the captains of television. And why he has a professional respect for us nitpickers. ■

By John F. Loosbrock, Editor, AIR FORCE Magazine

he story all the way from Copenhagen, Denmark.

April's "Airpower in the News" has been reprinted or quoted many times in newspapers and the *Congressional Record*. So far, to our knowledge, the text of the article was used in the Boston *Sunday Herald Traveler*, the Providence *Sunday Journal*, the *Stars and Stripes (Europe)*, the Quincy (Mass.) *Patriot Ledger*, and a number of military base newspapers. The Reserve Officer's Association is reprinting the text in its magazine, with a supporting editorial. There are uncounted references in newspaper editorials. The Dayton *Journal-Herald* was "sobered" by Mr. Witze's criticism and says he touched on "important questions of journalistic ethics and the fidelity to these canons by CBS." The Detroit *News* quoted him and also properly defined the issue as "not the conduct of the Pentagon but the distortions spawned by a broadcasting company in its efforts to make the Pentagon look bad. CBS approached its job with tainted hands."

The Omaha *World-Herald* also quoted Mr. Witze and came to the identical conclusion, that "the network does not seem to us to have clean hands in this situation. This is more than a little ironic, considering the subject matter of the documentary." The *World-Herald* says "the documented cases of questionable journalistic practices cast doubt on CBS's credibility." The Providence *Journal* says Mr. Witze exercised "the function of a good reporter" and "his findings make grim and shocking reading, findings which CBS so far [March 24] has not challenged in public." Four days after this comment appeared, a reporter for the Providence *Journal* interviewed CBS News President Richard S. Salant by telephone. It was Mr. Salant's opinion that the critics are "nitpicking and none goes to the heart of the issue."

On Capitol Hill, the text of "Airpower in the News" for April was put in the *Congressional Record* at least five times. It was entered, to our knowledge, by Senators Barry Goldwater of Arizona, John Tower of Texas, Clifford P. Hansen of Wyoming, Rep. John G. Schmitz of California, and Rep. F. Edward Hébert of Louisiana, Chairman of the House Armed Services Committee.

Mr. Goldwater called the article from AIR FORCE Magazine "refreshing," and said "CBS itself spent a vast amount of money on propaganda." He commented that "Mr. Witze is a man of great experience and expertise who has been a close observer of the Pentagon and its activities for many years. He does not need me to attest to his credentials."

Mr. Hansen lamented that CBS had made no attempt to permit "a point-by-point analysis of the inaccuracies of its production." He said the void has been filled, in brief, by AIR FORCE Magazine. He also inserted an editorial from the St. Louis *Globe-Democrat* that called the show "network overkill" and accused Mr. Salant of being evasive in his responses.

Congressman Hébert called Mr. Witze "one of Washington's top reporters." He added that he has known Mr. Witze for many years and "not once have I seen him write anything which could not stand up under close scrutiny for accuracy and objectiveness.

"If I were still a city editor, Claude Witze would be the kind of reporter I would want to have working for me," Mr. Hébert said.

But Mr. Witze works for AIR FORCE Magazine and we are glad he does. ■

Aerospace World

News, Views & Comments

By William P. Schlitz
NEWS EDITOR, AIR FORCE MAGAZINE

—Wide World Photos

An unusual shot of three US helicopters seemingly stacked up over the landing field at Mai Loc, South Vietnam. The two bottom craft are Army Cobra gunships, the other is a Chinook transport. The three were among US aircraft that provided support for a recent South Vietnamese commando raid into Laos.

WASHINGTON, D.C., APRIL 12

The Air Force and Army in March engaged in a chilling—and historic—undertaking: the first mass paradrop of men and supplies above the Arctic Circle. The site was 120 miles north of Point Barrow, the northernmost outpost of civilization.

With temperatures as low as seventy degrees below zero, the first men to land on the simulated search and emergency rescue mission were an Air Force combat control team.

First on the polar ice cap was MSgt. Emmet F. Heidelmann. Parachuting behind him from a C-130 Hercules were TSgt. Mark Hahn and Maj. James Waldman, team commander.

These, and others from the 17th Tactical Airlift Squadron who arrived by helicopter—Capt. Jerry Kitchen, TSgt. John Norsworthy, and SSgt. Allen Hooper—set up radios and radar/radio-navigational equipment to guide aircraft to the drop zone.

Four C-130s from Elmendorf AFB, Alaska, then parachuted 130 Army Arctic Rangers with 9,200 pounds of equipment for overnight housekeeping.

Object of the simulated mercy mission was to demonstrate that proper care or first aid could be provided quickly to injured parties in the event a commercial airliner went down in the polar region. Currently, sixteen scheduled over-the-pole commercial flights take place daily.

☆

The US Army is planning a specialized, airmobility unit of division strength "to test new material, tactics, techniques, and doctrine." Presumably, many of the combat lessons of Southeast Asia will be incorporated in the experimental unit's training.

The new unit, called TRICAP for the triple capabilities of armor, airmobile infantry, and air cavalry, will be stationed at Fort Hood, Tex. It will consist of an armored brigade, an airmobile infantry brigade, an air cavalry combat brigade, as well as the necessary combat-support and service units.

TRICAP will fly colors of the 1st Cavalry Division when these are returned from Vietnam. It will use assets of the 1st Armored Division, the colors of which will replace those of the 4th Armored Division in Europe, an outfit being inactivated.

TRICAP will be the first major experiment in Army airmobility since the 11th Air Assault Division was tested in 1963–64.

The various elements of TRICAP will be organized like those in other active divisions, except for the air cavalry combat brigade. The "new look" for this unit will consist eventually of a backbone of aerial-mounted arms teams of attack helicopters (capable of destroying tanks day or night), combined with airmobile infantry and signal, engineer, and selected combat support units.

The Army says that, throughout the test program, personnel and equipment of TRICAP will be maintained at readiness to meet any NATO or other worldwide commitment.

—Wide World Photo

Frank Borman, left, former astronaut an President Nixon's personal envoy on th prisoner of war situation, talks with Cle ment J. Zablocki (D-Wis.), Chairman c the House Foreign Affairs subcommitte that held recent hearings on the POV problem. Borman proposed a unilatera release of North Vietnamese prisoners i an effort to stimulate Hanoi to relea American captives. The nationwide driv to secure more humane treatment for U POWs continues unabated.

☆

On March 24, the US Senate followed earlier, similar action by the House of Representatives and voted to terminate government funding for construction of two supersonic transport prototypes.

Following the vote of fifty-one to forty-six, which the White House said "could be taken as a reversal of America's tradition of staying in the vanguard of scientific and technological advance," government spokesmen said there was no plan to reintroduce funding requests in the FY 1972 budget.

Boeing Co. and General Electric Co., which were well into the hardware phase of both the airframe and engine development, halted all further work and disbanded their respective teams of scientists and engineers involved in the effort. Chances of a private consortium taking over the program are said to be very slim.

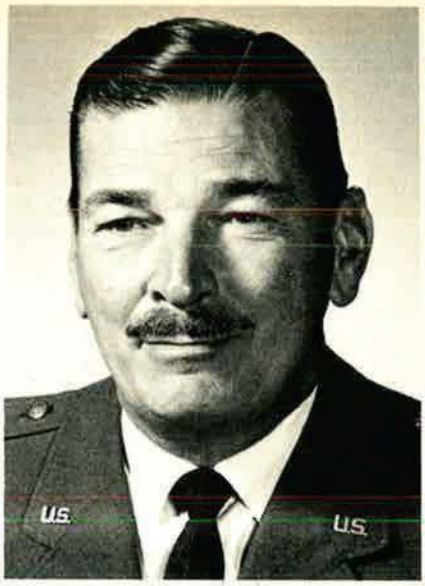
—Wide World Photos

*James Webb, former head of the National Aeronautics and Space Administration, displays the Robert Goddard Trophy, recently awarded him by the American Astronautical Society. With him is Mrs. **Goddard,** widow of the rocket scientist **who pio**neered America's interest in the exploration of space and laid **much** of the theoretical and practical **ground**work for man's entry into a new environment.*

The program was brought into being by President John F. Kennedy to prevent the US from losing aeronautical preeminence to France and England, whose governments and aerospace industries had undertaken the Concorde SST program. The Concorde has since successfully performed major portions of its flight-test program.

The Soviet Union, which is even further ahead in developing an SST, has announced that its aircraft will enter commercial service sometime this year or next, on both international and domestic routes.

The first international TU-144 SST



Three men in the news: above, Maj. Gen. Homer I. Lewis, USAFR, was named by President Nixon as new chief of the Air Force Reserve, to replace Maj. Gen. Tom E. Marchbanks, Jr., who retired February 1. Above, right, Col. Reade F. Tilley, Jr., who retired on March 16 after a thirty-year career as a professional USAF information officer. His military service began with the RAF Eagle Squadron and his final post was with the Aerospace Defense Command. Right, Dr. James P. Gilligan became Deputy for Reserve Affairs and Education to the Assistant Secretary of the Air Force (Manpower and Reserve Affairs) on March 22. He has served as a colonel in the Air Force Reserve since 1961.

President Nixon met with aerospace leaders on April 1 to discuss the high rate of unemployment in the industry. Among those present at the conference were, left to right, Robert F. Christy, president of the California Institute of Technology; Secretary of Labor James Hodgson; President Nixon; and Dr. Edward David, science adviser to the President.

—Wide World Photos

will provide service between Moscow and Calcutta, while the first domestic use of the aircraft will be between Moscow and Khabarovsk, in eastern Soviet Russia near the Sea of Japan.

This move puts the Soviet SST several years ahead of the joint British/French Concorde SST, scheduled for commercial use sometime in 1974–75. The Soviet SST, a Mach 2.35 aircraft, is expected to be a star attraction at this spring's Paris Air Show.

Of Congress's action, the US government's SST Program Director, William Magruder, said, "The United States has now surrendered to the Concorde and the TU-144." While both aircraft are smaller and slower than the proposed US SST, growth versions of both aircraft are known to be either under consideration or in development. The world market for supersonic transports is estimated to be in excess of $20 billion.

☆

A $3.4 billion NASA budget was approved by the House space committee for the fiscal year beginning July 1. While cheering to the space agency, the space committee recommendations still have to run the gauntlet of full House action.

The total was $162.2 million more

"Old 166" has an endurance record that is hard to beat. She joined the Army Air Corps in April 1944 and served until 1950 when she went into temporary retirement at Davis-Monthan AFB, Ariz. Following service in the Korean War, 166 then found a home with the Wyoming National Guard and even spent a period as the governor's flagship. After ten years, the aircraft was transferred to the Montana National Guard, and in 1966 returned to war. In this latest stint, 166 has been a C-47, a VC-47, a C-47 again, an RC-47, and now an EC-47. No telling what yet lies in store for this venerable old Gooney.

than asked by President Nixon. The committee raised from $100 million to $127.5 million funds for work on the Space Shuttle, being designed as a reusable two-stage vehicle to land and take off as does an airplane.

The space agency's nuclear-propulsion program was increased $39.9 million over the President's request, including a $35 million boost to keep nuclear rocket engine development on schedule.

No modification was made in the $612 million requested for the Apollo moon-landing program.

☆

An item for the "what is this country coming to" file: a newspaper advertisement appearing nationally proclaims the potential benefits of owning a Pinkerton's new protective Bomb Blanket. *Protective Bomb Blanket?* Yes, the idea is to throw it over the bomb until the authorities arrive.

It "stops up to 90 percent of the destructive fragmentation of most homemade bombs!" the ad reads.

Seems that the four-foot-square Bomb Blanket, made of the same material as bulletproof vests, has "multiple vents scientifically placed to allow the harmless escape of gases generated by the blast.

"The new Pinkerton Bomb Suppression Blanket gives you a degree of protection previously unavailable —during the vital minutes before the authorities arrive," the ad says.

Just one more sign of the times?

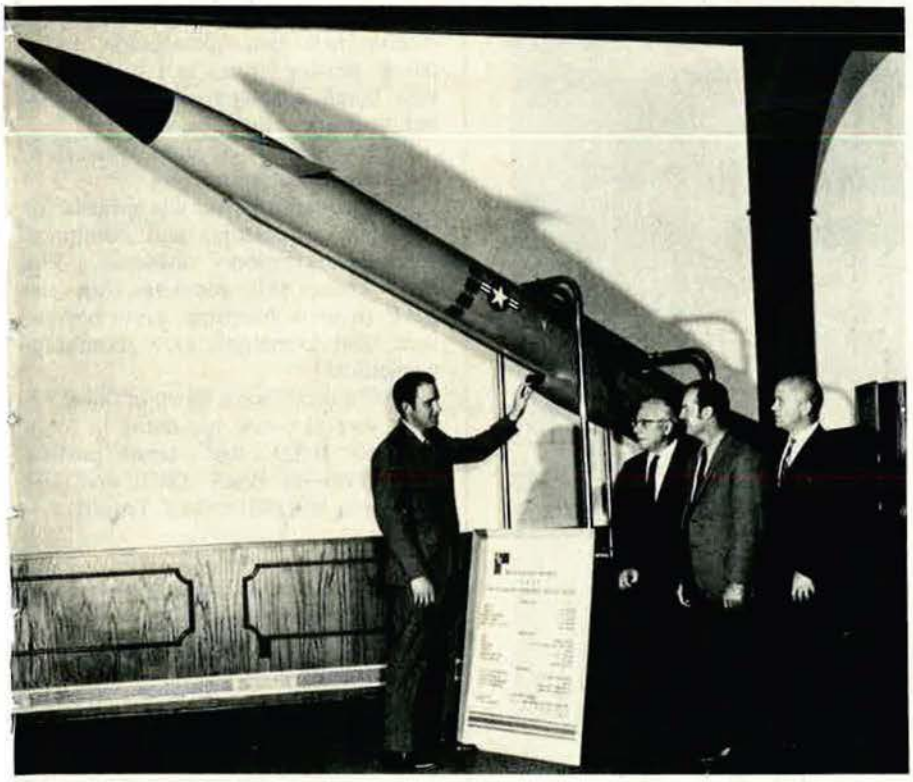
☆

A glimmer of hope currently is illuminating the dark Rolls-Royce/Lockheed situation, brought about by Rolls' recent declaration of bankruptcy. That action put into jeopardy production of the Rolls-developed RB-211 engine meant for Lockheed's L-1011 TriStar liner.

Since then, a series of talks has taken place among officials of both governments and the two companies.

Although many hurdles remain to Rolls' continued development of the RB-211, a "conditional" agreement has been worked out. The terms are being studied by the airlines that have ordered L-1011s and by the banks financing purchases of the aircraft. The main sticking point in the negotiations is the price that Lockheed will pay for future engines and what increase will be passed along to the airline customers.

At best, the first TriStar will not enter service until six months later than the scheduled date this fall; this means increased sales competition from the McDonnell Douglas DC-10,



A new generation of missile targets is being developed by Beech Aircraft Corp. for the services with this high-altitude supersonic target (HAST). Sponsored by the Air Force Systems Command Armament Laboratory, HAST's hybrid rocket engine will utilize solid or liquid propellants and hit Mach 4 and 100,000-foot altitudes.

Aerospace World

set to enter airline service this fall, and the Boeing 747, already in considerable use.

☆

At this writing, Strategic Air Command aircraft and crews are gearing up to participate in the RAF Strike Command's intersquadron bombing and navigation meet to be held in Britain April 17–22. And, for the first time, FB-111s were to participate—but not on a competitive basis.

The SAC units involved: 2d Bomb Wing, Barksdale AFB, La.; 320th Bomb Wing, Mather AFB, Calif.; 379th Bomb Wing, Wurtsmith AFB, Mich.; 11th Air Refueling Squadron, Altus AFB, Okla.; 55th Strategic Reconnaissance Wing, Offutt AFB, Neb.; 410th Bomb Wing, K. I. Sawyer AFB, Mich.; and the 340th Bomb Group, Carswell AFB, Tex. Except for the 55th and 340th, all are B-52 and KC-135 units. The 55th flies the reconnaissance version of the KC-135, and the 340th the FB-111.

SAC crews are to fly two kinds of missions from Marham, England, each averaging four and a half hours.

First is a day bombing mission that includes a high-altitude, radar bomb scoring run, two low-altitude, radar bomb scoring runs, and a low-altitude bomb scoring run on which visual assistance may be used.

The second is a night, precision, celestial-navigation mission.

RAF squadrons will win awards for bombing, navigation, and combined bombing-navigation missions. The SAC crews will compete with the RAF in crew bombing, crew navigation, and combined crew bombing-navigation.

SAC aircraft have flown in the RAF meet several times, beginning in 1958 with six B-52s. SAC crews participated also in 1960, 1967, and last year won the Blue Steel Trophy.

☆

The Boeing Co. was selected as the 1970 recipient of the Robert J. Collier Trophy. Boeing, picked unanimously by a committee of twenty-six aviation industry leaders, was cited for its successful introduction of the 747 airliner into commercial service.

Presentation of the trophy, traditionally by the President of the United States, is scheduled for May 13 at a luncheon in Washington, D.C., hosted

jointly by the National Aeronautic Association and the National Aviation Club.

The committee, two members of which were President George D. Hardy and AFA's Executive Director James Straubel, also paid tribute to United Aircraft Corp.'s Pratt & Whitney Division and Pan American World Airways for their role in development and operation of the world's first advanced-technology jet transport. Pratt & Whitney built the 747's engines; Pan Am financed the venture.

The National Aeronautic Association is the official US representative of the Fédération Aéronautique Internationale, which authenticates worldwide aviation and space records. The trophy is awarded annually "for the greatest achievement in aeronautics and astronautics in America, with respect to improving the performance, efficiency, or safety of air or space vehicles, the value of which has been thoroughly demonstrated by actual use during the preceding year."

☆

As part of the Defense Department's Project Volunteer, USAF personnel planners have identified seven programs believed needed to meet the goal of zero draft by the end of Fiscal Year 1973.

They are: an increase in basic pay for officers and airmen with less than two years' service; increased resources for recruiting; bachelor housing improvements; additional Reserve Officers Training Corps and medical scholarships; special programs to improve military life; a variable housing allowance; and procurement and retention bonuses for officer, enlisted, and Guard/Reserve personnel.

The key to all programs is congressional approval of the $1.5 billion in FY 1972 funds requested by the Secretary of Defense for Project Volunteer programs in all services. Nearly every priority item requires congressional legislation or funding.

Congressional hearings on legislation to provide FY 1972 programs began February 2. Most priority items identified by USAF are included in the OSD proposals. The variable housing allowance is not part of the FY 1972 program. It will be considered later as a separate action in connection with FY 1973 planning.

Programs under consideration by Congress include a basic pay increase for officers and enlisted under two years' service averaging nine percent for officers and thirty-three percent for enlisted (included is a small raise for personnel with more than two years' service to prevent pay inversions); establishment of a basic allowance for quarters for basic airman through sergeant with less than four years' service, eliminating need for the Dependents' Assistance Act; additional ROTC and medical scholarships; reimbursement to recruiters for out-of-pocket expenses; and provision for an enlistment bonus.

Military life programs approved by OSD vary within the various services but generally include improvement of

Sgt. Verne McCune takes it easy while housekeeper Ruth Puckett tidies up. The housekeeping service is available for a small fee at Mather AFB, Calif. It is part of Project Volunteer, initiated at ATC bases to make service life more attractive to airmen.

Today's A-7:
A lot more airplane than anyone bargained for.

Its mission is close support and interdiction. Its accuracy is unprecedented.

The Air Force A-7D and Navy A-7E are equipped with an advanced avionics package which includes a central digital computer, an improved Doppler, inertial platform, forward looking radar, projected map display and an eye-level head-up display.

The A-7's systems are so skillfully integrated that it's an easy aircraft to fly. Programmed navigation aids and ordnance releases give the pilot vital freedom to concentrate on his target and evasive maneuvers.

It can deliver up to 15,000 pounds of mixed ordnance with better than 10-mil accuracy. Destroying hard targets in one-third the number of sorties required with other available systems.

In service, pilots are discovering mission capabilities that weren't even written into the books. So while it's making pilots more versatile and accurate, they are making it a lot more airplane than anyone bargained for.

VOUGHT AERONAUTICS

Paris Air Show: See the Vought A-7 on the flight line, visit the LTV Aerospace Corporation exhibit in hall A, stand 36.

avocational, recreational, service, and community facilities. Among the Air Force improvements are better off-duty education through more courses and counselors; more furnishings in bachelor housing; custodial services in communal areas in bachelor quarters; improved and additional base mobile home parks; and an improved family assistance program.

☆

An equitable solution to the issue of recomputation of pay for retired military personnel appears more promising in the wake of a March 15 White House meeting of military-oriented organizations, including the Air Force Association.

At present, ten different rates of pay apply to retirees of the same grade and service, depending on the date of retirement, although all believed they would enjoy the same benefits when they entered the military.

The policy of recomputing pay for retirees with each pay raise for active-duty personnel was abandoned in June 1958.

It was announced at the White House meeting that President Nixon had restated his concern about the inequities of the present system, and that a special interagency committee had been established to study military retiree benefits, including retired pay; veterans benefits for retirees; Social Security benefits for retirees; survivor benefits; and related matters.

The committee is to consider four principal questions:

1. How should Regular retirement benefits be initially computed and subsequently adjusted?

2. How should disability retirement benefits be coordinated with VA and Old Age Survivor's Insurance (OASI) disability benefits?

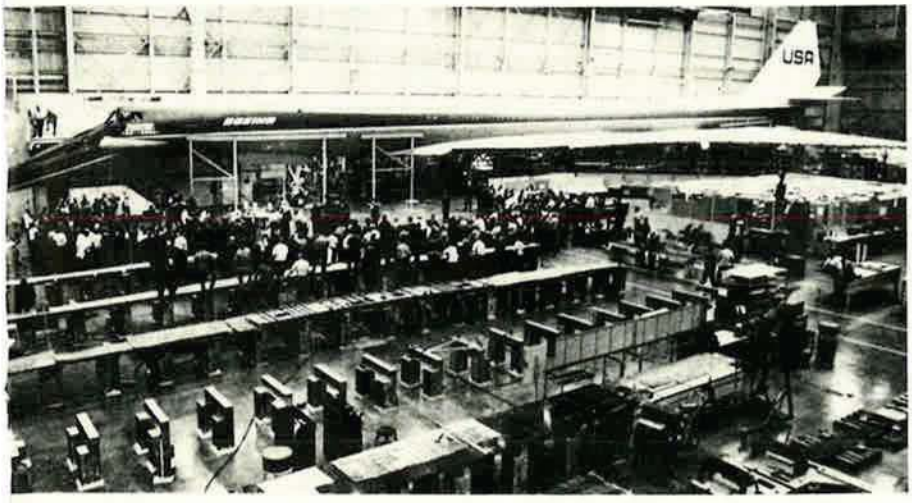
3. How should payments to survivors of active-duty and retired personnel be calculated and coordinated with VA and OASI benefits?

4. What changes in payments to those already retired are needed to meet the test of equity desired by the President?

Roger T. Kelley, Assistant Secretary of Defense for Manpower and Reserve Affairs, is Chairman of the study group. Other committee members are Donald E. Johnson, Administrator of Veterans Affairs; Robert E. Hampton, Chairman of the Civil Service Commission; and James R. Schlesinger, Assistant Director of the Office of Management and Budget.

Representatives at the March 15 meeting were assured that their organization will have the opportunity to make recommendations to the committee as it proceeds with its study. Assistant Executive Director John O. Gray represented AFA at the meeting and is monitoring the study for the Association.

The committee is to report to the President regarding the recomputation matter and related problems by July 1. Other parts of the study related to disability retirement are scheduled for completion by October 1. The reporting dates, if met, should allow time for congressional con-



—Wide World Photos

An unhappy event in the lives of these Boeing SST employees when they were told late in March of the Senate vote to kill funding for the supersonic transport. The 7,000 workers to be laid off will add to the unemployed in the hard-hit industry.

Aerospace World

sideration in advance of the 1972 Presidential campaign.

☆

NEWS NOTES—AIR FORCE Magazine's **Edgar Ulsamer** recently was selected to receive an **Aviation/Space Writers Association (AWA) special citation.** The award is for his article, "The SST Is Vital to the National Interest," published in the February 1970 issue of AIR FORCE. Mr. Ulsamer was recipient of the 1970 James J. Strebig Memorial Award, AWA's top prize for aviation writing. In March he was promoted to Senior Editor on the magazine staff.

North American Rockwell Corp., picked to build the Air Force's new **B-1 bomber,** has awarded the first major subcontract: **Pioneer Parachute Co.,** Manchester, Conn., will develop the B-1's Crew Escape System. Dollar figure was undisclosed.

The Air Force has **reduced by twelve its buy of "F" model F-111s.** The move was made to offset rising costs and chronic trouble with the aircraft's electronic equipment. The number of F-111s either built or still on order now stands at 519.

The aeronautical collection of the late **Col. Richard Gimbel, USAF** (Ret.), spanning 5,000 years of man's interest in flight, has been donated to the Air Force and will be displayed and maintained by the **Air Force Academy Library.** Colonel Gimbel, a member of the merchandising family, retired from the Air Force in 1953. He died in May 1970. The collection contains some 4,000 books. ■

Fiat's G-91 YS, undergoing development for the Swiss Air Force, makes a test flight. The YS has special electronics and a third set of subwing pylons to carry Sidewinder air-to-air missiles.

RAF's new Laser Ranger and Marked Target Seeker, in the nose of this modified Canberra, has flown for the first time. Ferranti Chief Test Pilot Len Houston, left, and Tech Rep John Mabberley discuss the unique target ranging device.

B-17 TAIL-GUNNER READY FOR ACTION

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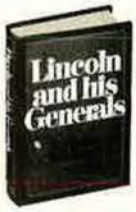

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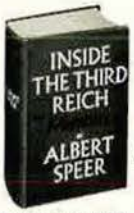

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B/G Charles J. Adams, from Cmdr., 821st Strategic Aerospace Div., SAC, Ellsworth AFB, S.D., to Dep. Dir., Strategic Forces, DCS/R&D, Hq. USAF . . . **Col. (B/G Selectee) Thomas A. Aldrich,** from Vice Cmdr., AWS, Hq. MAC, Scott AFB, Ill., to Cmdr., US Forces, Azores, and Cmdr., 1605th AB Wg., MAC, Lajes Field, Azores, replacing B/G Warren D. Johnson . . . **B/G Lew Allen, Jr.,** from Asst. Dir., to Dir., Special Projects, OSAF, Los Angeles AFS, Calif. . . . **B/G Robert E. Brofft,** from Dep. Asst. DCS/P for Military Personnel, USAFMPC, Randolph AFB, Tex., to Cmdr., Pacific Exchange System, 919 Ala Moana Blvd., Honolulu, Hawaii . . . **L/G Russell E. Dougherty,** from DCS/P&O, Hq. USAF, to Cmdr., 2d AF, Barksdale AFB, La. . . . **M/G (L/G Selectee) George J. Eade,** from Asst. DCS/P&O, to DCS/P&O, Hq. USAF, replacing L/G Russell E. Dougherty.

B/G Alan C. Edmunds, from Cmdr., 810th Strategic Aerospace Div., SAC, Minot AFB, N.D., to Cmdr., 47th Air Div., SAC, Fairchild AFB, Wash. . . . **B/G Frank W. Elliott, Jr.,** from Cmdr., 14th Strategic Aerospace Div., SAC, Beale AFB, Calif., to Cmdr., 307th Strategic Wg., SAC, U-Tapao Airfield, Thailand . . . **L/G Richard H. Ellis,** from Vice CinC, USAFE, Lindsey AS, Germany, to Cmdr., 6th ATAF, Izmir, Turkey, replacing retiring L/G Joseph H. Moore . . . **B/G Robert H. Gaughan,** from Cmdr., 4th Strategic Aerospace Div., SAC, Grand Forks AFB, N.D., to Cmdr., 14th Strategic Aerospace Div., SAC, Beale AFB, Calif., replacing B/G Frank W. Elliott, Jr. . . . **Dr. James P. Gilligan,** from Professor of Forestry, Univ. of Wis., Madison, Wis., to Dep. for Reserve Affairs and Education, OASAF, Manpower and Reserve Affairs, Hq. USAF . . . **Col. (B/G Selectee) Alden G. Glauch,** from Cmdr., 435th Mil. Airlift Support Wg., MAC, Rhein-Main AB, Germany, to Asst. DCS/Ops, Hq. MAC, Scott AFB, Ill.

Col. (B/G Selectee) Colin C. Hamilton, Jr., from Cmdr., 93d Bomb Wg., SAC, Castle AFB, Calif., to Dep. Dir., Ops (NMCC), OJCS, Hq. USAF . . . **B/G Fred A. Heimstra,** from Dir., Plans and Hospitalization, OTSG, Hq. USAF, to Cmdr., USAF Medical Center, ATC, Keesler AFB, Miss. . . . **B/G Warren D. Johnson,** from Cmdr., US Forces, Azores, and Cmdr., 1605th AB Wg., MAC, Lajes Field, Azores, to DCS/P, Hq. SAC, Offutt AFB, Neb. . . . **L/G David C. Jones,** from Cmdr., 2d AF, SAC, Barksdale AFB, La., to Vice CinC, USAFE, Lindsey AS, Germany, replacing L/G Richard H. Ellis . . . **Col. (B/G Selectee) Larry M. Killpack,** from Cmdr., 8th Tac. Ftr. Wg., PACAF, Ubon Airfield, Thailand, to Asst. Compt., Accounting and Finance, and Cmdr., AFAFC, Denver, Colo. . . . **M/G Robert A. Patterson,**

from Cmd. Surgeon, USAFE, Lindsey AS, Germany, to Surgeon, Hq. SAC, Offutt AFB, Neb., replacing B/G John M. Talbot.

B/G George E. Schafer, from Dep. Cmd. Surgeon, Hq. MAC, Scott AFB, Ill., to Cmdr., Aerospace Medical Div., Brooks AFB, Tex., replacing retired Maj. Gen. Charles H. Roadman . . . **B/G Wiltz P. Segura,** from Cmdr., 31st Tac. Ftr. Wg., TAC, Homestead AFB, Fla., to US DCS/LIVE OAK, Casteau, Belgium . . . **B/G Bryan M. Shotts,** from C/S, 15th AF, SAC, March AFB, Calif., to Cmdr., TUSLOG, Ankara, Turkey . . . **Col. (B/G Selectee) Ray B. Sitton,** from Cmdr., 17th Bomb Wing, SAC, Wright-Patterson AFB, Ohio, to Cmdr., 19th Air Div., SAC, Carswell AFB, Tex. . . . **Col. (B/G Selectee) Grant R. Smith,** from Cmdr., 20th Tac. Ftr. Wg., USAFE, RAF Upper Heyford, England, to Chief, AF Section, Joint US/Military Mission for Aid to Turkey, Ankara, Turkey.

B/G John M. Talbot, from Surgeon, Hq. SAC, Offutt AFB, Neb., to Cmd. Surgeon, USAFE, Lindsey AS, Germany, replacing M/G Robert A. Patterson . . . **B/G Kenneth L. Tallman,** from Cmdr., 836th Air Div., TAC, MacDill AFB, Fla., to Dep. Asst. DCS/P for Military Personnel, USAFMPC, Randolph AFB, Tex., replacing B/G Robert E. Brofft . . . **Col. (B/G Selectee) Donald L. Werbeck,** from Exec. to the Cmdr., to DCS/P, Hq. AFSC, Andrews AFB, Md. . . . **B/G John H. Wilkins,** from Cmd. Surgeon, Hq. ADC, Ent AFB, Colo., to Dir., Plans and Hospitalization, OTSG, Hq. USAF, replacing B/G Fred A. Heimstra.

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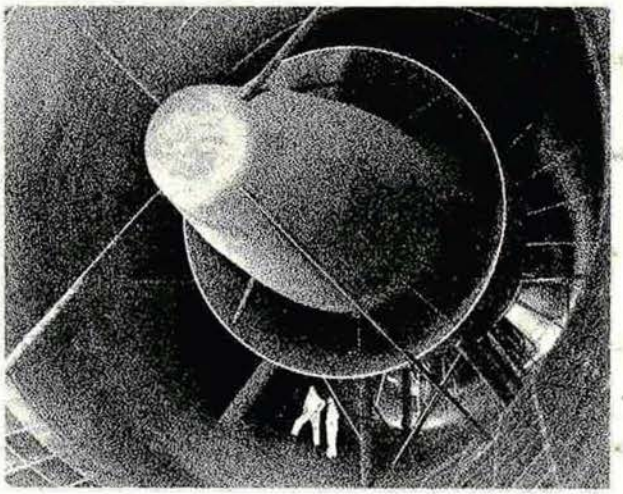
Index to Advertisers

Twenty-first Annual

AIR FORCE ALMANAC

That these are difficult times for the military has become a classic understatement. The military mission, the military ethic, the capacity of the military to manage its own affairs—all are under attack from an expanding variety of quarters. Flaws exist in the military profession, and it would be pointless to deny them. But, by and large, these are reflections of larger flaws in our society, and one can make a good case that, relatively speaking, the military in general still stands a notch or two above the society it serves. The military itself is not monolithic. Parts of it appear more enlightened—better managed—than others; parts have problems not shared by the others. We freely confess to an Air Force-oriented bias as part of our reason for being. So we are proud to present, in this Twenty-first Annual Air Force Almanac, good evidence of fresh breezes blowing through the Air Force managerial windows. The articles by Secretary Seamans and General Ryan are, we believe, the most cogent and pertinent statements from top Air Force leaders that we have been privileged to publish. They provide a solid foundation for the mass of reference material that makes up the bulk of this issue. Above all, they reflect an understanding of the key element which can make or break the Air Force of the '70s—its people. To those people, on board or yet to come along, we dedicate, as always, this Air Force Almanac.

—THE EDITORS



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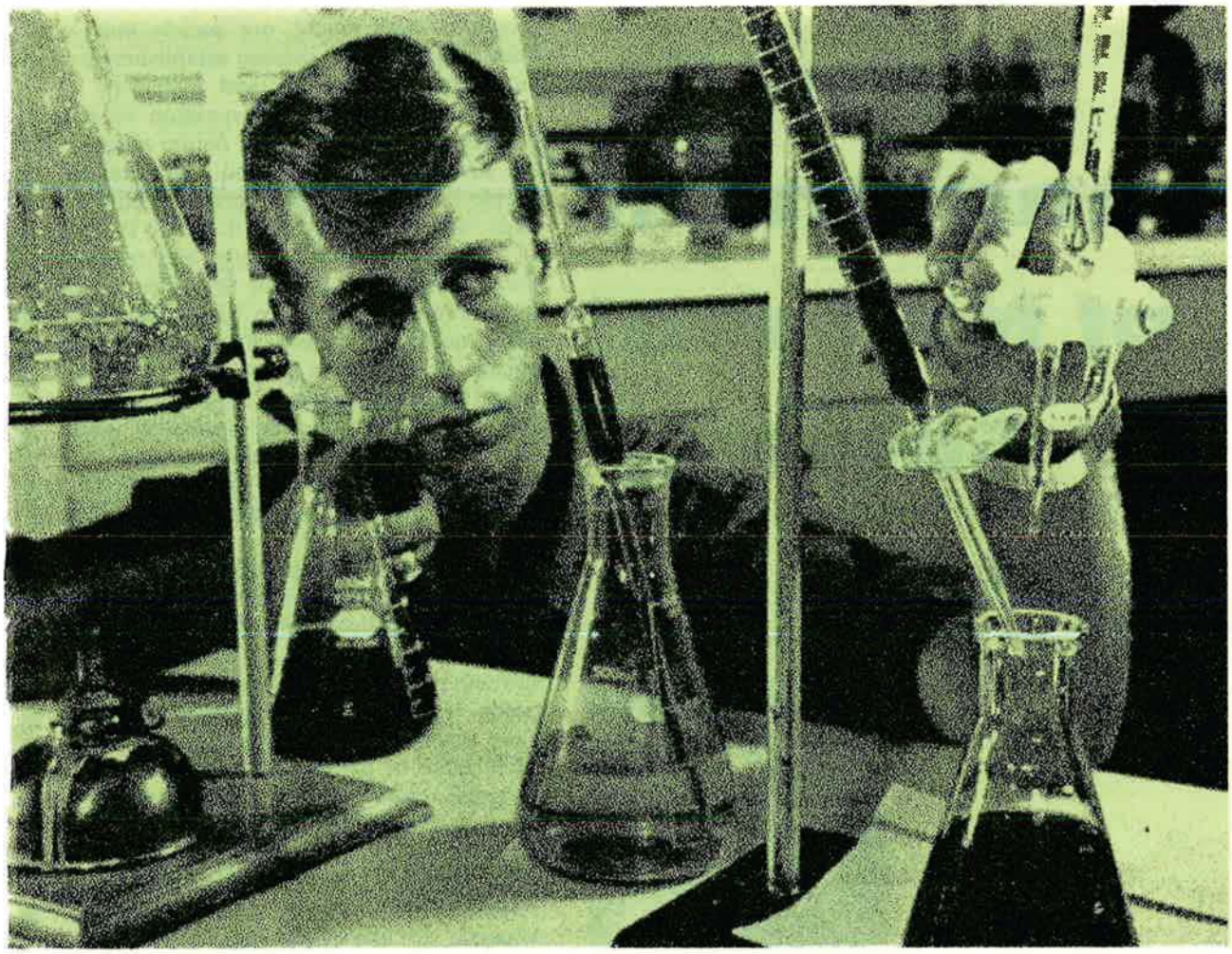


Have the technical, strategic, and policy issues of national security become so complex that the American public, acting through their elected civilian officials, may lose control of national policy? The Secretary of the Air Force says "No." He discusses four broad, but feasible, requirements that will assure continuation of a nearly two-hundred-year-old philosophy that is basic to American democracy . . .

Public Management of National Security

By Robert C. Seamans, Jr.

SECRETARY OF THE AIR FORCE

Dr. Robert C. Seamans, Jr., became the ninth Secretary of the Air Force in February 1969. A Harvard graduate who holds a doctorate in science from MIT, Dr. Seamans has been active in the fields of missiles and aeronautics since 1941. After fifteen years on the faculty of MIT, he joined RCA in 1955, where he spent five years in senior executive positions. From 1960 to 1968, Dr. Seamans served as Associate Administrator and Deputy Administrator of NASA. He is the recipient of many awards and academic honors.

WE ARE passing through a period in which many people are suggesting that the military establishment may be out of control—that something called the military-industrial complex is really determining national policy. This issue is so serious that it behooves each of us to study the problem of civilian control over national security affairs and to decide for ourselves whether or not we can maintain satisfactory control with our present procedures.

There are four broad requirements that I feel are essential for adequate public management of national security. First, the public must be the effective judge of the overall purposes and priorities of national policy. Second, there must be basic public understanding of major weapon system decisions. Third, we must have checks and controls on the implementation of programs. And finally, our society must continue to provide the defense establishment with highly qualified leaders and managers.

On the first point, the question of overall purposes and priorities, the public at large has the diversity of background and interests to decide broad allocations between national defense on the one hand and domestic tasks such as education, health, housing, and transportation on the other. Experts are often too close to their own problems to fully appreciate the other needs of society. Just as the military officer is absorbed in questions of national defense, the educator places his emphasis on education, and the housing specialist tends to focus on housing. The public at large, that is, our entire society working through our political processes, has the necessary broad appreciation of all our needs.

The national Administration can lead and explain; but if it is to be successful, it must respond to public judgments on priorities. The present Administration is in the process of shifting priorities from wartime to peacetime needs. This transition is possible because we have reached the point where our allies can carry more of the defense burden. The Nixon Doctrine does not call for abandoning our allies; it merely states that they should have primary responsibility for supplying the manpower needed for their own security. Vietnamization and withdrawal of American forces from Vietnam are the direct results of this policy. This draw down of our forces in Southeast Asia has enabled us to reduce our overall defense expenditures.

The American public can see changes in priorities reflected in annual budgets. The estimated FY '71 outlay for the Defense Department is $74.5 billion compared to $78.0 billion in FY '68, and inflation has meant that the actual reduction in defense programs has been even more pronounced. Allowing for price and pay increases, the reduction in defense spending amounts to $20 billion in terms of constant (FY '72) dollars.

During the same three-year period, domestic spending, excluding NASA, veterans benefits, and interest on the national debt, has gone up from about $73 billion to $107 billion. Meanwhile, state and local government spending increased from $101 billion to an estimated $139 billion. Although these increases are in terms of today's inflated dollars, they still represent a considerable shift in priorities in accordance with the needs and desires of the public.

Now let's consider the second requirement for successful public management of national security—the understanding of major weapon system decisions. These systems and their purposes are admittedly complex, and the problem of understanding them is often compounded by critics of particular weapons, who throw up smoke screens that confuse the issues.

An example of a very old, but still active, smoke screen is the "overkill" argument, which asserts that we have far more weapons than we actually need. Fortunately, it is exactly the common sense of the average citizen that serves to reveal the error in the overkill argument. Common sense tells us that to prevent an attack a country must have more than a bare minimum of weapons. This is necessary because the attacker attempts to strike in such a way that most of the defender's weapons would be destroyed, unused, or in some way out of position.

Our missiles can be destroyed in their silos by enemy missiles or intercepted in flight by an ABM system; submarines can be eliminated at their bases or at sea; and bombers can be destroyed on their bases or shot down in flight. Certainly, anyone planning an attack against the United States would attempt to negate our weapons in all of these ways. Therefore, if we wish to deter war we must modernize our forces so that an enemy would continue to find it difficult to attack them.

I believe that there is general public understanding and agreement that our goal is to prevent war and that to achieve that goal we must make sure that no one believes he can gain any real advantage by starting a war. We must have forces that provide good insurance against improved enemy attack capabilities.

Strategic bombers, like the B-1 shown in this artist's concept, fit the US philosophy of national security: they are not a surprise-attack threat, but rather a second-strike deterrent system, strengthening peace.

The difficult question is what combination of weapons will give us the necessary insurance in the future. The public pays for this insurance and must judge whether we are paying for more or less than we really need. Each new "insurance policy" or weapon system improvement must be weighed in the light of what it contributes to our basic goal of making sure that no one can gain any advantage by starting a war.

Some combinations of weapons tend to threaten attack, while other combinations help preserve the peace by insuring retaliation. For example, a large enemy missile force with high-yield MIRVs could be used for a surprise attack against missile silos, while a lesser force with smaller warheads—such as the US has—could not be used effectively for that purpose.

We are worried about the growing Soviet

missile force, which now has well over twice as much payload as our own. If they deploy multiple warheads and achieve the accuracy that seems likely in the next five years, they might be able to threaten a surprise attack on our silos.

Our own missile force is a deterrent force designed not for surprise attack, but to insure that our surviving retaliatory weapons could get through the Soviet ABM system. We believe this constitutes credible deterrence.

Similarly, an ABM system that protects cities, such as the Soviet defenses around Moscow, could also strengthen an attack threat to the extent that it has a capability to intercept our surviving retaliatory weapons. Our own Safeguard ABM system will be deployed in a different way—to protect our Minuteman silos against attack and hence insure deterrence.

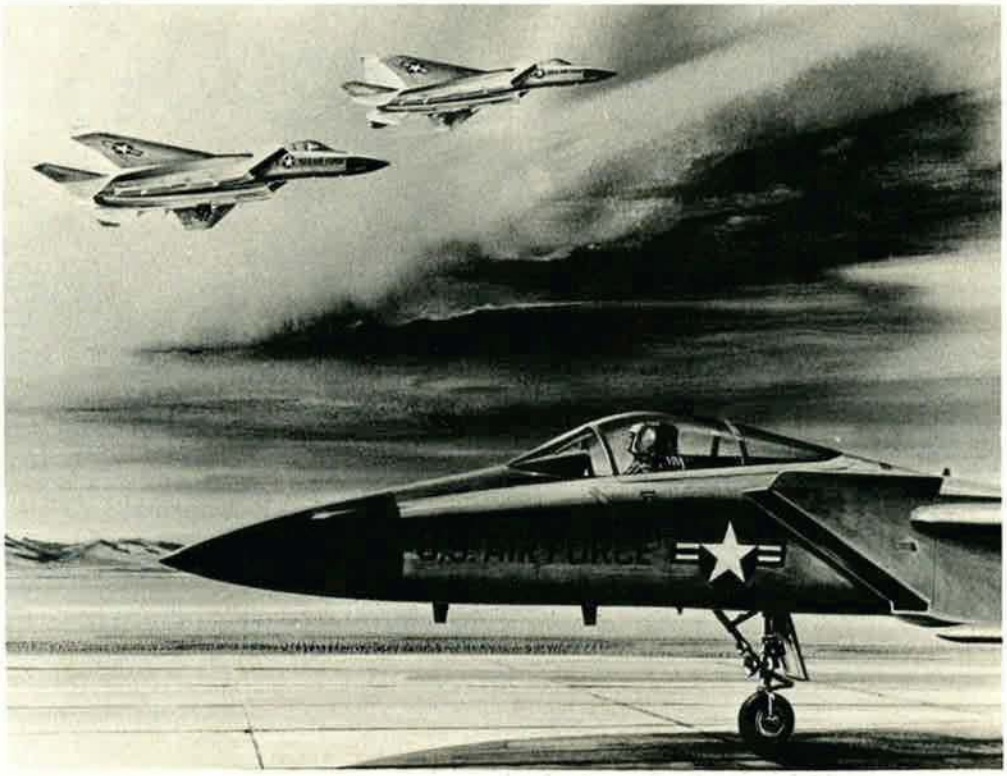
Another disturbing element in Soviet programs is the Fractional Orbital Bombardment System. This weapon sacrifices payload and accuracy to achieve a low trajectory and thus could threaten our bomber bases by avoiding expected missile trajectories.

As Soviet strategic forces have continued to grow, critics of the Defense Department sometimes throw up another sort of smoke screen. They argue that our forces are equally threatening because we have more heavy bombers than the Soviets, bombers that can carry a great deal of payload. But their point is invalid; aircraft do not contribute to a surprise attack threat. They do not have the short flight time of missiles.

Strategic aircraft are useful, rather, for deterrence, and deterrence is the proper goal for any country that wishes to strengthen the peace. Aircraft can launch on very short warning and thus remain safe until we determine whether an attack is actually under way. Aircraft also provide additional flexibility in tactics. A deterrent posture that combines missiles and bombers provides insurance against unexpected developments that might neutralize either missiles or bombers alone.

To summarize these strategic program issues, the growing Soviet missile payload, their Moscow-based ABM, and their Fractional Orbital Bombardment System suggest movement toward a potential surprise-attack capability. Of course, we hope that this is not their intent. Our own smaller-payload missile force, ABM protection of our missile fields, and strategic bomber capability are intended to insure that some portion of our forces will be able to retaliate if we are attacked. These distinctions are not as complex as sometimes suggested; and if force modernization meets with serious opposition, I feel certain the public can and will make the correct judgments.

Turning now to the question of a public check on the administration of weapon programs, it is clear that programs have not always been well managed in the past. We are doing our best to improve that situation. Many of our new procedures should help control costs and make it easier for both Department of Defense managers and the public to judge performance.



New management procedures such as the milestone concept and prototype competition are improving administration of weapon programs. Procurement of the F-15 includes both, with prototype competition applied to the radar contract.

Before new development programs begin, we are trying to get a better statement of requirements. This should help us eliminate expensive frills that are essential to the mission of a weapon system and should prevent costly changes later in the development process. When a new system or subsystem is not too complex, we are having several contractors build prototypes so that there can be actual hardware competitions and a much clearer determination of what we are buying. We used this approach for the F-15 engine and radar contracts. And we plan to have a competitive fly-off between two prototypes of the A-X close-support aircraft. In the case of larger systems, like the B-1 strategic bomber, competitive prototypes would be too expensive, but we are allowing a full year after the first flight for hardware evaluation before making a decision on whether to go ahead with production.

Another important aid to the control of the development projects is the milestone concept. Our contracts now contain important milestones which the contractor must reach before he is authorized to go on with the program. We can use these review points to see just how we are doing and can then adjust or discontinue the program if it is not measuring up to requirements.

I do not want to leave the impression that we have solved our management problems. We are dealing with large-scale programs and rapidly changing technology. But we are attempting to do a better job, and the public can and will judge our progress.

One of the keys to our success or failure will be our ability to decentralize our management structure and find capable managers to accept the responsibility for particular programs.

This leads to my final point: Can our country obtain the high-quality military leaders that are essential if our programs are going to be successful?

Our armed forces will be what the US public wants them to be. We need military men who are both effective in battle and good managers in time of peace. They must have a clear understanding of public policy and be wise in the handling of human problems. If we are going to continue to find military men of this caliber, Americans are going to have to show that they really want them.

We were able to get by between World Wars I and II because we needed only a small cadre of professionals in those days. There was time to mobilize after a war began, although it meant some heavy losses at Pearl Harbor and Bataan. Fortunately, there were dedicated men in uniform who had persevered through the lean years and were prepared to step forward when needed: men like Eisenhower, Marshall, Arnold, and King, to mention a few.

Today, however, we need much larger forces able to develop and operate extremely technical equipment and ready to go into action in a matter of minutes. We have maintained that sort of capability up to now, but there is a real question whether we can continue to do so after Vietnam.

The men we need are some of the best young men in our society, men who could choose other fine, rewarding careers in civilian life. And since they—like their countrymen past and present—find no pleasure in warfare, there must be other compelling reasons for them to spend their lives in the armed forces of their country.

Of course, they have the knowledge that by preparing for defense they are making war less likely, but this will mean something only if the public appreciates the importance of that task.

We have to reassure ourselves that national pride and security are not incompatible with a peaceful international community. On the contrary, they are essential to it. All nations must develop pride and effectiveness in protecting and managing their own realms before they can feel secure in the presence of each other.

In conclusion, then, I believe that public management of national security can and must be effective in spite of rapidly changing technology. In my view, the necessary requirements for public management *can* all be met. First, I believe the public *can* adequately judge broad national goals and priorities. Second, the citizen *can* understand major weapon system decisions with a reasonable amount of study. Third, we should be able to maintain adequate checks and controls on our weapons development programs. And finally, with public awareness of the problem, we can obtain the high-caliber military leaders we need for national security. ■

Comparative Strategic Programs

US	USSR
1,054 ICBMs, mostly small warheads	*1,440 ICBMs, many large warheads*
+	+
BMD of missile silos	*BMD of urban areas*
+	+
500 second-strike long-range bombers	*195 second-strike long-range bombers*
+	+
Small obsolescent air defense system	*Large, modern air defense system*
	+
	Fractional Orbital Bombardment System
Stable second-strike deterrent force	*Growing first-strike capability*

The Chief of Staff does not believe "that a zero-draft environment will place the military community in a position of relying only on the economically or socially disadvantaged youth . . . for its membership." Here is his perceptive analysis of the climate in which the Air Force must compete for talent, and a look at the enlightened philosophy of personnel management that has shaped the new USAF Personnel Plan . . .

Focus on People

By Gen. John D. Ryan, USAF

CHIEF OF STAFF, UNITED STATES AIR FORCE

On August 1, 1969, Gen. John D. Ryan became the seventh Air Force Chief of Staff. General Ryan graduated from the US Military Academy in 1938. During World War II, he commanded a B-17 group in Europe. Most of his postwar duty has been in SAC, which he commanded for two years. He also has served as Commander of the Sixteenth Air Force; Inspector General, USAF; and CinC, PACAF. Prior to assuming his present position, General Ryan was the Air Force Vice Chief of Staff.

MUCH HAS been written and said recently about the challenge posed for senior military leadership in the area of personnel force management—and with good reason. This subject holds more serious implications for the future of the military profession than any other. Why is this so? What makes the **people** problem more acute now than ever **before?** Most importantly, what must we do about it?

Where We Are Today

Next year the Air Force will celebrate its twenty-fifth year as a separate service. We will be able to look back with pride at our accomplishments. The fact that there has been no World War III must be attributed in major degree to the discharge of our responsibilities in the area of strategic deterrence. We have responded with precision to the direction of our national leadership—the massive operations associated with the Berlin and Cuba crises, twice in Korea, in Southeast Asia—to name the more publicized of the contingencies that have occurred during the period.

Today, we have the most experienced and dedicated force of men and women, active and reserve, of any combat force ever before developed. Its character has contributed every bit as much to our posture for strategic deterrence as does hardware on alert pads or in missile launch sites.

Yet now, as we approach our silver anniversary, at a time when we need every ounce of material power without waste, the preservation and further development of this most critical element of our total force could become our "Achilles' heel." While the life cycle involved in hardware acquisition can be more clearly defined and can be compressed with extraordinary effort, the problems of maintaining the quality and vitality of our personnel force are infinitely more complex. Here is one of the most urgent concerns of the 1970s for Air Force management.

Influence of External Constraints

With our personnel force in the best shape it has ever been, why this concern for the future? The answer is that external factors, over which we have little or no control, which more than ever before impact on management success, are shaping our structure and the people who will be its guardians in the future.

Sociological. The man (or woman) entering military service today is more *individual* than before—he has a different value concept than his predecessor—some would say, "only in degree"—but nevertheless, different.

For some, the values traditionally found in patriotism have been influenced by antiwar demonstrations, by civil disobedience, and by hard-core radical elements.

Technical complexity, illustrated by this C-5A, has influenced Air Force personnel requirements more than any other external force. To maintain its operational efficiency, the Air Force must have men and women of constantly greater technical proficiency.

Progress by evolution is no longer satisfactory to many. Many of our youth question authority and are impatient with the seemingly impersonal restrictions placed upon them by tradition, law, and regulation. They want to know the "why" of things and are prepared to engage in forthright confrontation of the "establishment" to get answers. I regard the constructive search for reasons and the constructive urge for reasoned change as the hope of the future.

Criticism of the Military

The fact that the black community and other minority groups are striving forcefully for recognition has created tensions and challenge in all elements of society, including the military segment.

Experimentation with drugs is a new and sinister syndrome, the impact of which is just now beginning to surface.

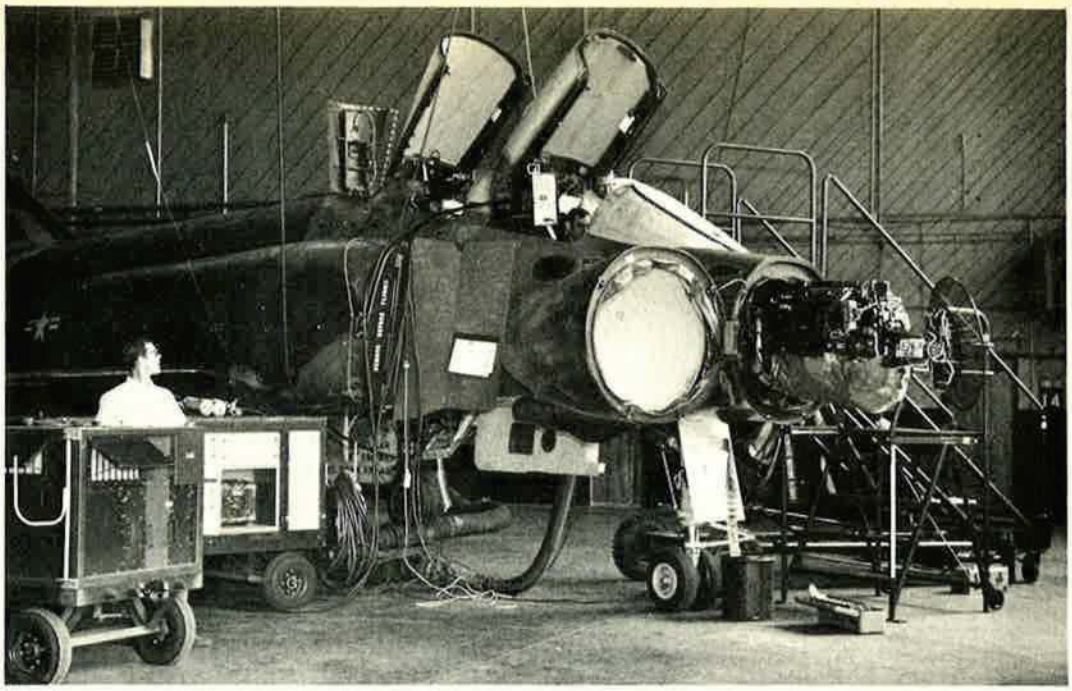
We know that our primary objective is the security of the United States and our allies. The requirement to respond to national leadership in support of that objective can never change nor should it. To maintain our responsiveness, we must improve the military image not by relaxed standards of appearance and [illegible]r by a weakening of discipline. Rather, our dedication to the national purpose must be made better known and understood by the public, and by the youth of America in particular. The things we continue to do for the good of humanity—the Congo airlift, our Civic Actions and Domestic Actions programs, the tremendous training job we do for our people and the national resources it produces—as examples—must be made known. Our social worth must be communicated to those we wish to attract for a military career.

I have no fear that young people will not join us in national service. I believe our young people *want* desperately to serve a good cause, in a productive and imaginative way. What is to be feared is that we will fail to cut through the misapprehensions and negative noise barrier in time and degree sufficient to reveal the true dedication and service values of Air Force life.

People who have chosen the Air Force—or any military service—as a career know that the military occupation is a true profession. Unfortunately, too few people outside of our community know this. The concept of professionalism, clearly articulated, would help attract quality and stimulate eligible members of the civilian populace to seek civilian or military careers in both the active and reserve segments of the force. We need to reveal the ethics of our profession—we need to communicate what we are to the youth of the country.

Finally, we must close the gaps so that the goals of the individual and the goals of the Air Force are compatible and mutually attainable. After all, both revolve around the successful performance of vital, interesting, and challenging work, which in turn is rewarded by experience, proper recognition, pay incentives, and growth. By affording individuals a clear understanding of our objectives and by providing increased opportunity for people to achieve their personal goals, we can overcome the negative influences of today's sociological environment.

Scientific and Technical. Notwithstanding the press of sociological change, developments in science and technology have had deeper



The Air Force personnel structure must achieve a balance between generalists and specialists, Regulars and Reserves, military and civilian people. Skilled technicians like these civilian radar specialists at Hill AFB, Utah, are an essential element of Air Force manpower.

impacts on the military establishment than any other external influence. This is where a true revolution has been in progress for years. Our measure of control in this area, in large part, is necessarily limited by dollar costs and by what the Administration and the Congress view as a *sufficiency* against the threat. For our future personnel force, this means we must recognize that as technology becomes increasingly complex, our people must become more proficient.

As these technological changes occur, the Air Force must maintain its standards of quality; consequently, as skill capabilities increase, salary levels must be made comparable with civilian income. As salary, retirement, and training costs grow, there will be an associated need and demand for more clearly defined qualitative and quantitative controls—controls to enhance productivity, achievement, and reward.

Management Philosophy and Cost. The present Administration is dedicated to a philosophy of management that has returned authority to the individual Service Secretaries in significant degree. The trend toward decentralized management, though long needed, does not afford us the latitude to use funds less precisely. On the contrary, the budget "crunch" has never been more severe. Tough decisions concerning tradeoffs between hardware and manpower requirements are the order of the day.

In 1960, Air Force personnel costs were considerably less than the dollars expended for hardware; today personnel costs are one and one-half times greater than hardware expenditures. At the same time, defense outlays for FY 1972 total only 32.1 percent of the federal budget—the lowest since 1950. This trend toward greater personnel costs dictates that we structure our force with foresight and precision.

Political. Historically, after each major conflict, America's fighting forces have been reduced to essentially a cadre status. The nature of the threat to our national security does not point to the likelihood of such drastic reductions in the future. Nevertheless, today's political environment has dictated a new look at the requirement for the draft. Elimination of the draft and its influence as a motivator for voluntary service will mean an increase in the competition for the nation's manpower resource.

I am not one of those who fears that a zero-draft environment will place the military community in the position of relying only on the economically or socially disadvantaged youth of the country for its membership. Nor do I believe that we need create an air of permissiveness that would adversely affect the discipline required for mission accomplishment. We can attract the caliber of officer, airman, and civilian we need from all social and economic levels—and good discipline can be had without either repressive or laissez-faire leadership.

Impact of External Constraints

It is not enough to merely accept the long-standing proposition that ". . . the military establishment requires a balance between the three roles of heroic leader, military manager, and military technologist. . . ." The problem becomes immensely more complicated when the elements of the force—active-duty officers and airmen, civilians, reserves—are studied separately.

A fundamental area that must be reviewed is the mix of the uniformed military and the

The F-111 is the U.S. Air Force's most advanced combat aircraft, and gives both strategic and tactical commanders a new measure of versatile striking power. It flies high or low, subsonic or supersonic, day or night, in good weather or bad, without escort, to penetrate enemy defenses undetected and hit with just about any weapon in the inventory. The FB-111 strategic bomber, now entering service with the Strategic Air Command, earned top bombing honors in its first entry in SAC's aircraft combat competition. The F-111 deep interdiction fighter-bomber is operational now with the Tactical Air Command, and the first squadron of a 72-aircraft wing has been deployed to Europe in support of NATO forces.

GENERAL DYNAMICS

We built this monster to challenge our engines with hurricane-force crosswinds. And tail winds.

Then we throw ice and sand in them.

General Electric aircraft engines get a tougher going over at our multi-million dollar Peebles, Ohio testing complex than they ever will in service. For example, in this unique facility engines are subjected to crosswinds at all angles from 0° to 180°. It's the only one of its kind in the world.

We go out of our way to make trouble down here...

so that trouble won't happen up there.

AIRCRAFT ENGINE GROUP

GENERAL ELECTRIC

205-06

Only enlightened personnel policies will attract people able to absorb today's training.

The public should know more about USAF's many humanitarian activities.

civilian employees of the Air Force. We must take into account factors such as who can perform best in a specific position, yet, concurrently focus on the need for maintaining a military rotation base to accommodate overseas demands.

Other elements that must be studied continuously, and where qualitative and quantitative judgments must be made, include the desired balance of career/noncareer elements, active/inactive populations, youth/experience, and rated and nonrated personnel. The roles of the Air National Guard and Air Force Reserve forces and the continuing requirement for assuring the readiness and participation of these vital elements are most important considerations.

Finally, there is the problem of maintaining a flexible force, capable of rapidly responding to changing demands. We must consider just how much "generalization" and "specialization" we can afford in terms of cost-effectiveness. As noted earlier, the increasing complexity of weapon systems creates pressures for higher degrees of personnel specialization. Concurrently, the length of time required to develop these critical, hard-to-produce skills steadily increases. This factor of increased specialization could, unless anticipated and wisely monitored, adversely impact on our force structure and on the flexibility for assignment and employment of individual officers, airmen, and civilians.

Where We Are Going

In order to move toward a more viable and mission-oriented personnel force, we have developed a new conceptual approach to total force personnel management. We have entitled it "The USAF Personnel Plan." Its content keys on clearly defined, objective force structures—officers, airmen, civilians, and reserve—against which the impact of internal policies and external influences such as budget and legislation can be measured. The resultant clarity of our objectives—particularly in a zero-draft environment—will help us in obtaining the congressional support we need.

The force envisaged in this plan will be *balanced*. It will be composed of a logical and clearly defined balance of generalists and specialists, of active and reserve officers and airmen, and of civilians who have the skills, knowledge, education, and grades to accomplish the Air Force mission.

Secondly, it will be *flexible* and therefore capable of responding to changing requirements or directed constraints in terms of size, composition, use, and movement.

Third, the plan outlines the details of a force that is *structured* with sufficient grades and skills to identify individuals in terms of responsibility and capability while providing a means for their progression, both in terms of position and pay.

Fourth, the plan embodies the concept of *quality,* with emphasis on a force manned without regard to race, color, or creed—yet trained to levels required for development, conversion, replacement, and expansion, if needed.

Though recognizing all elements of the force, the plan specifically focuses on its career component, which must be *professional* in the true sense of the word. This fifth concept relates to the degree of dedication, discipline, and ethical standards needed in the force.

Finally, the Air Force personnel force of the

Air National Guardsmen and Reservists, like this North Dakota ANG F-101 crew, give the Air Force much of its flexibility.

future must be *motivated* to willingly participate in achievement of the Air Force mission.

These six concepts—balance, flexibility, structure, quality, professionalism, and motivation—will drive our requests for personnel appropriations and legislation in the future. Though not new in themselves, the extent to which they are articulated in "The USAF Personnel Plan" *is* new.

The Challenge

The concepts I have just outlined carry with them a challenge without precedent. They must not be allowed to become mere words in a planning document. Nor can Air Force leadership—whether it be active or reserve, military or civilian—rely solely on personnel managers to translate these concepts into action. The job of managing toward an optimum and viable personnel force reaches to all levels and into every nook and cranny of the Air Force community.

How Do We Answer This Challenge?

Through a direct, personal approach. This notion recognizes that *only* complete honesty and candor in human relations will work. No abstract language, no fine print—just straight answers. However, straight answers demand that these individual interests be vigorously expressed. Communication is, by definition, a reciprocal process. Individuals must take the time and make the effort to state their desires. Commanders and supervisors at all levels must listen and respond with equal intensity. At times, individual desires and requests cannot be honored for one reason or another. I believe the people we need will understand and accept the occasional inability of the institution to meet all their desires *if* the reasons are personally and directly given with honesty and candor.

Within the Air Force we need to instill a proprietary interest in each military and civilian member. I like the attitude of one young officer who was overheard saying that he hoped I would "keep his Air Force straightened out until he got ready to take it over"—*his* Air Force. Probably the only way that we can really expect to ever see this sort of attitude on a large scale is if we can manage to mesh individual and institutional (Air Force) goals. One proved management technique that can and should be implemented is the time-tempered method of ensuring each man knows he has a "piece of the action" and feels responsible for it. Then a whole shift in terminology and attitudes takes place—*my* project, *my* airplane, *my* student—*my* Air Force. Corollary to this new-found proprietorship is responsibility for success *or* failure. I have faith in our young Air Force people, particularly in their ability to accept responsibility for their actions. Moreover, most people are inspired by the prospect of running the show, no matter how small the show is. For commanders and supervisors, this natural eagerness is a precious resource not to be lightly squandered.

Given the degree of effort and dedication the Air Force is capable of mustering to meet the challenge of personnel force management, I have no doubt that the job will be done. We have, after all, only one option—to make it happen! This we can and will do. ■

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Robert C. Seamans, Jr.

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Under Secretary of the Air Force
John L. McLucas

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(As of April 15, 1971)

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Vice Chief of Staff
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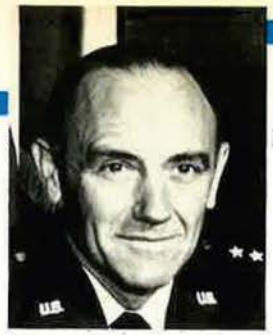

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Commander in Chief

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Gen. William W. Momyer
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Hq. Maxwell AFB, Ala.
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Hq. Denver, Colo.
Brig. Gen. Edwin S. Wittbrodt
Commander

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Air Reserve Personnel Center
Hq. Denver, Colo.
Col. Benjamin S. Catlin, III
Commander

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Air Force Data Systems Design Center
Hq. Washington, D.C.
Col. Jack M. MacGregor
Commander

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Hq. St. Louis, Mo.
Col. Edwin L. Sterling
Commander

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Major Commands and Operating Agencies

Once each year the major commands and separate operating agencies of the United States Air Force are invited to tell their stories of accomplishment to the readers of AIR FORCE Magazine. These reports contribute significantly to the lasting reference value of our Air Force Almanac and we are pleased to present these articles on the following pages.

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A Major Air Command

Strategic Air Command

A QUARTER century ago, at the close of World War II, an ambitious but essential mandate became clear to military planners: The future security and freedom of the United States could be assured only through the development of a force so powerful that potential aggressors could not entertain rational thoughts of world domination.

It was for this mission that the Strategic Air Command was born on March 21, 1946. Today, after twenty-five years of growth and development, it stands out clearly as one of the most powerful forces for peace in man's history—a mixed force of bombers and missiles that comprises more than seventy percent of the free world's nuclear firepower.

Though the men and machines have changed since Gen. George C. Kenney became its first Commander, SAC's original and primary mission has remained the same—to deter all-out nuclear war. If deterrence should fail, then a capability must exist to destroy the enemy's will to continue fighting.

Since August 1968, that capability has been directed by Gen. Bruce K. Holloway, Commander in Chief, who controls the worldwide force from SAC Headquarters at Offutt AFB, Neb. It is from there that combat-ready bombers and intercontinental ballistic missiles from some forty-five locations around the world would be instantly notified to launch against an enemy, once an order to strike had been received from the President—the only man allowed to give such an order.

The nerve center at Headquarters SAC, near Omaha, Neb., is three stories underground. A large control room, communications center, trajectory center, portions of the Joint Strategic Target Planning Staff, intelligence, materiel, and operations activities are surrounded by exterior and ramp walls of concrete and reinforced steel twenty-four inches thick. If necessary, it could be sealed off for weeks to ensure survivability.

Through the most advanced and extensive communications system in existence, SAC's Commander and battle staff have complete control over every aircraft, missile, and combat crew. Employing a worldwide telephone network, global teletype circuits, and a single-sideband radio network, instant "red-phone" contact is possible. As a further precaution, a back-up flying command post with similar capabilities has been in the air since 1961. A general officer and a team of controllers are aboard in the event the underground post were destroyed.

Approximately forty percent of the SAC bomber-tanker force is in constant readiness, poised to respond to the klaxon signaling an "alert." Bomber and tanker crews could be airborne within minutes, and missile launch officers in hardened, dispersed silos stand ready at their consoles. As an additional means of protection, particularly from enemy submarine-launched ballistic missiles, SAC also has dispersed a portion of its alert bombers at other

Gen. Bruce K. Holloway, a 1937 graduate of the US Military Academy, has been Commander in Chief, SAC, since August 1968. During World War II, he led the 23d Fighter Group in China, where he became an ace. After the war, he commanded USAF's first jet fighter group. He has served as Deputy Commander of TAC's Ninth and Twelfth Air Forces; Director of Operational Requirements, Hq. USAF; Deputy Commander in Chief, US Strike Command; and Commander in Chief, USAFE. He was Air Force Vice Chief of Staff before his present assignment. General Holloway is a graduate of the National War College.

The first of SAC's seventy FB-111 strategic bombers entered the inventory in 1970. The Mach 2 FB-111 can carry both nuclear and conventional weapons.

ventory since 1955. Capable of high subsonic speeds, it can fly at altitudes in excess of 50,000 feet and carry a nuclear or conventional payload. With aerial refueling, its range is limited only by the endurance of its six-man crew. Later models can go 10,000 miles unrefueled.

Since 1965 the total bomber force has been reduced by the retirement of older models, from about 750 B-52s and B-58s to a current total of approximately 450 B-52s. The FB-111, which began entering SAC's bomber inventory in 1970, will add seventy aircraft to the bomber force. It is a variable-sweep-wing aircraft capable of Mach 2 speeds. The FB-111 can carry both nuclear and conventional weapons and take off and land in less distance than a B-52. It carries advanced avionics and ejection systems.

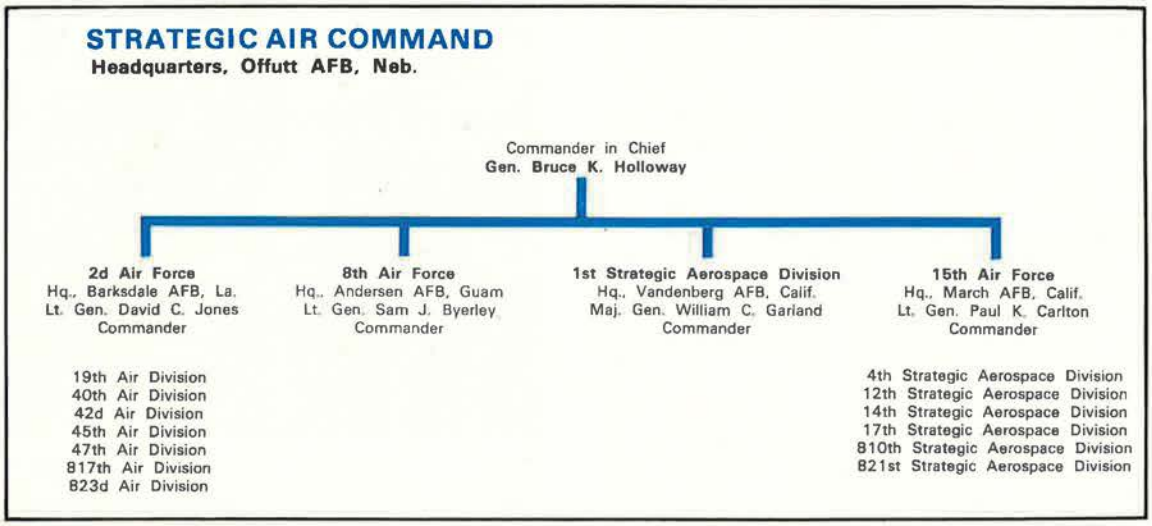
airfields away from their home bases. Heavy bomber units also maintain the capability of mounting an airborne alert when so directed.

The possibility of an accidental launch or attack is eliminated by "positive control" measures. An aircraft, for example, would fly to predetermined points well short of enemy territory and await further coded instructions. Weapons in the aircraft would not be armed until the bomber was ordered to attack, and then coordinated actions by several crew members would be required. If the "go code" from the President were not received, the crew immediately would turn back. Similar multiple safeguards protect against an unauthorized missile launch.

Based on a concept of maximum flexibility, SAC weapons are a blend of manned and unmanned systems. Current United States defense policy affords a variety of options for response to national emergencies, and SAC employs the advantages of mixed bomber and missile forces.

The backbone of the manned system is the eight-engine B-52, which has been in the in-

SAC evaluates its missile-firing techniques at Vandenberg AFB, Calif. A salvo launch, like this one, could be made under actual combat conditions.



A Titan II missile combat crew monitors one of SAC's heavyweight ICBMs. Although liquid fueled, the Titan II can be launched in less than a minute.

Scheduled as a possible follow-on to the B-52 fleet is the B-1, formerly called the Advanced Manned Strategic Aircraft (AMSA). Engineering development contracts released in June of last year and modified in February 1971 authorized the fabrication of three flight-test aircraft, and one ground-test airframe, plus some major structural components. If congressional approval and funding for full-scale production are granted, the B-1 could be flown by SAC crews by the late 1970s.

Four SAC B-52s competed in the Royal Air Force Strike Command Competition last summer and brought home the RAF's Blue Steel Trophy for the best team in combined bombing and navigation. The SAC team compiled 1,531 points—177 more than the second-place team. SAC crews also garnered second-place honors in competition for the Camrose Trophy, awarded for the best single bombing mission, and the Electronics Trophy, for the best single navigation mission.

The refueling mission of the command is carried out by 600 KC-135 Stratotankers. Responsible for refueling all fighters, bombers, and reconnaissance aircraft in the Air Force, the tanker fleet offloads approximately 1.5 billion pounds of jet fuel each year. Since 1965, refueling operations in Southeast Asia have supported the overall air campaign and accounted for many emergency saves. Another valuable role has been airlifting men and equipment to and from the United States.

This fall SAC's bomber and tanker units will again take part in the command's annual Aircraft Combat Competition. Emerging as the "best of the best" at the 1970 competition was the 93d Bomb Wing, Castle AFB, Calif. The entries from this top unit won the coveted Fairchild Trophy, with an overall score of 1,325 points out of a possible 1,500. The 11th Air Refueling Squadron, Altus AFB, Okla., took the Saunders Trophy as the top tanker unit, with a final point total of 438 out of a possible 500. The Mathis Trophy went to the 5th Bomb Wing, Minot AFB, N.D., based on its total points in the bombing navigation competition.

Last fall, SAC's newest bomber, the FB-111, participated in the combat competition for the first time. One FB-111 crew scored first in bombing and took home the Bombing Trophy, while another had a combined bombing and navigation score that earned it second place in competition for the Mathis Trophy. Both FB-111 crews represented the 340th Bomb Group, Carswell AFB, Tex.

Photographic and electronic reconnaissance operations for the command are conducted by the high-flying supersonic SR-71. Delivered to SAC in 1966, this aircraft can travel at three times the speed of sound and photograph 60,000 square miles of surface in one hour of flight.

Indispensible in strategic air warfare, reconnaissance by SAC first detected the Soviet missile buildup in Cuba in 1962.

In carrying out the mission of deterrence, the SAC missile force poses a formidable array of strength. It is comprised of fifty-four Titan IIs and 1,000 Minuteman intercontinental ballistic missiles (ICBMs), which are constantly being updated.

As part of SAC's modernization program, Minuteman II was accepted into the inventory in October 1965. An improvement over Minuteman I, it uses microminiaturization, a new thrust-control system, and other refinements that increase range, accuracy, and flexibility over the earlier model.

An even newer missile, Minuteman III, is

If SAC's underground command post should be destroyed, SAC missiles and bombers can be controlled from the airborne post, Looking Glass.

SAC B-52s, armed with thirty tons of conventional bombs, have been highly effective in Southeast Asia. As a B-52 returns from a bombing mission, a SAC KC-135 tanker prepares to take off on a refueling mission. SAC tankers support both bombers and fighters in the Southeast Asia theater.

also being integrated into the force. SAC assumed responsibility for the first Minuteman IIIs in June 1970. The first tactical squadron, consisting of five manned control centers and fifty unmanned silo launchers, was recently completed at Minot AFB, N.D.

Minuteman III employs an improved third stage for an additional throw-weight capability. This enables the missile to carry more penetration aids to counter an antiballistic missile defense.

Eventually, the force will include 550 Minuteman III missiles capable of carrying Multiple Independently Targeted Reentry Vehicles (MIRV).

The global concept of operations, the flexibility of its bombers and missiles, the tried and tested qualities of command, control, and communications, and its professional personnel have long been central to SAC. Together, they add up to the primary role of command—deterrence—and they are basic to its secondary mission.

This "secondary" task is to meet the demands imposed by nonnuclear war. Under the cover of SAC's nuclear deterrent, bombers and tankers have continued their significant contribution to the Southeast Asia conflict. The B-52's greatest asset has been its tremendous bomb-carrying ability. One Stratofortress can carry thirty tons of 500- and 750-pound bombs. The precision that the crews bring to the operation enables them to attack enemy sanctuaries, to give direct support to ground troops locked in battle, and to interdict the supply areas and lines.

The bombers are only one part of the SAC operations in Southeast Asia. The other role is filled by the KC-135 air refueling jet tankers. The presence of the air refueling tanker has made this the first conflict in which fighter-bomber and fighter-interceptor operations are not limited in range or duration by fuel supply. The Stratotankers also have engaged in emergency refuelings to save men and aircraft, and they play an invaluable role in providing airlift for deployment to and redeployment from Southeast Asia.

Deterrence is still the command's primary mission, but with the success of the bombers and tankers in Southeast Asia, SAC will continue to have an important role in conventional warfare.

In two and a half decades, the command has grown from a beginning aggregate of 36,000 men and 250 war-weary bombers to a force of 161,000 highly trained professionals. In this, its twenty-fifth anniversary year, SAC looks back at a quarter century of hard work and dedication, with the satisfaction of knowing that it has accomplished its mission. SAC readiness and firepower will continue to play a major role as a deterrent force to general war in our nuclear age. ■

The SR-71 is the world's most advanced strategic reconnaissance aircraft. It can fly at more than three times the speed of sound and at altitudes in excess of 80,000 feet. SAC's SR-71s are based at Beale AFB, Calif.

A Major Air Command

US Air Forces in Europe

THE United States Air Forces in Europe (USAFE) has acquired a new profile for the 1970s—lean, but with more punch per pound than ever before in the command's history. This posture is made possible by a large-scale modernization and aircraft-conversion program, which is now nearing completion, and by a high percentage of veteran aircrews who have been combat-tested in Southeast Asia.

Under the command of Gen. Joseph R. Holzapple, USAFE is blending its man and machine components into an effective mission-oriented force. This mission is accomplished within the framework of three military commands. First, USAFE is the Air Force portion of the US military force committed to NATO. This is, in fact, the command's primary mission, and USAFE units represent a major segment of NATO's military airpower. Second, USAFE is the air component of the United States European Command (USEUCOM). In this capacity, it is tasked to conduct, control, and coordinate combat air operations, in accordance with directives from the Commander in Chief, EUCOM, and, in turn, from the Joint Chiefs of Staff. Third, as a major command of the US Air Force, USAFE is responsible to the Chief of Staff, USAF, for carrying out his directives and policies for the European area.

In performing its mission, USAFE supports an area extending from the Arctic Circle to Central Africa and as far east as Pakistan. The command operates twenty-seven primary installations and about 420 lesser ones such as radar sites, storage facilities, and radio-relay stations. Units are located in nine countries, and there is some degree of responsibility in a total of thirty nations. There are 50,000 military and civilian personnel assigned, augmented by about 12,000 local foreign national employees.

In addition to his responsibilities as USAFE Commander, General Holzapple also commands the Fourth Allied Tactical Air Force (4ATAF), the international command to which the great bulk of USAFE's combat-ready units are committed for NATO control.

One major improvement in USAFE's tactical punch during 1970 came with the addition of the F-111 to its inventory. The 20th Tactical Fighter Wing at RAF Upper Heyford, England, received its first F-111 on September 12, 1970, thus becoming the first overseas wing to be permanently equipped with the Air Force's newest tactical fighter. By the end of the year, twenty-six were on hand. With its low-altitude, high-speed penetration capability,

Gen. Joseph R. Holzapple became Commander in Chief, USAFE, in 1969 after serving as Deputy Chief of Staff, Research and Development, Headquarters USAF. The General, a graduate of Bradley University, completed pilot training in 1941. During World War II, he served in Europe and the Pacific as commander of the 319th Bomb Group. Much of his postwar career has been in the field of research and development. He has been Special Assistant to OSD's Director of Research and Engineering, and Director of the Weapon Systems Evaluation Group. He is a graduate of the National War College.

USAFE's 20th Tactical Fighter Wing, RAF Upper Heyford, England, became the first F-111-equipped overseas wing when it received its first two last fall.

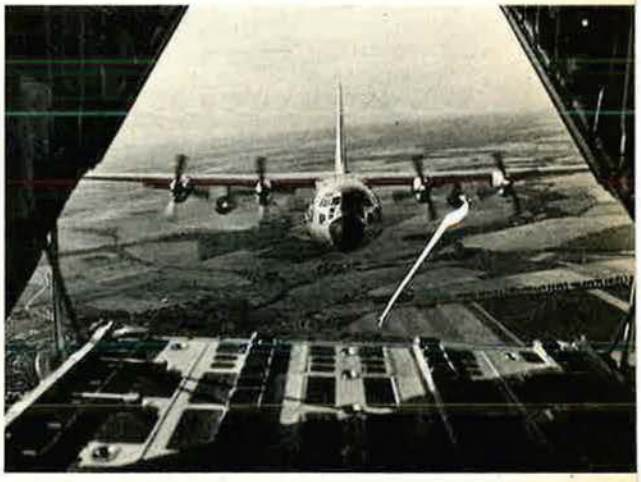
USAFE F-4Es from 32d Tactical Fighter Squadron roar over Holland. The Soesterberg AB unit was first USAFE air defense squadron to convert to the F-4E.

the F-111 will give USAFE an important interdiction capability and make a valuable contribution to NATO's deterrent posture.

Even before the F-111's arrival, USAFE's force modernization was well under way with the conversion to the versatile F/RF-4 Phantoms. The USAFE interceptor force of F-102s has been replaced by the newer and more formidable F-4Es. The reconnaissance mission is now performed exclusively by the RF-4C, replacing the old RF-101 Voodoos. And USAFE's strike attack capability is now built around F-4C, D, and E aircraft. Thus, the 1,600-mph Phantom, with its multimission capability, has become the backbone of the USAFE tactical force. Conversion to the Phantoms also has simplified and streamlined the logistics and maintenance systems of the command.

The tactical airlift force now comprises two C-130 Hercules squadrons. The C-130 units are rotational squadrons from Tactical Air Command, but operate under the control of the USAFE Director of Airlift. In 1970 the USAFE airlift system moved 70,000 passengers and 53,000 tons of cargo.

In addition to forces in the theater, eight and a half squadrons are based in the CONUS, but remain under operational control of USCINCEUR and are fully committed to NATO. The dual-basing concept has been employed by USAFE since the relocation of the 22d TFS from France in 1967 under Project Freloc. The US-based squadrons continue to train in CONUS to meet USAFE and NATO commitment standards. USAFE, in turn, maintains suitable bases in Europe in a constant state of readiness to receive the squadrons at any time. Air Force mobility capability and the commitment of these forces to specific bases enable them to move quickly to Europe and be ready to fight upon arrival.



USAFE's airlift workhorse is the C-130, shown here from the open ramp of a sister aircraft. Two rotational C-130 squadrons from the US help provide USAFE and NATO forces with day-to-day logistical support and aerial delivery of cargo and troops during training exercises.

UNITED STATES AIR FORCES IN EUROPE

Headquarters, Lindsey AS, Wiesbaden, Germany

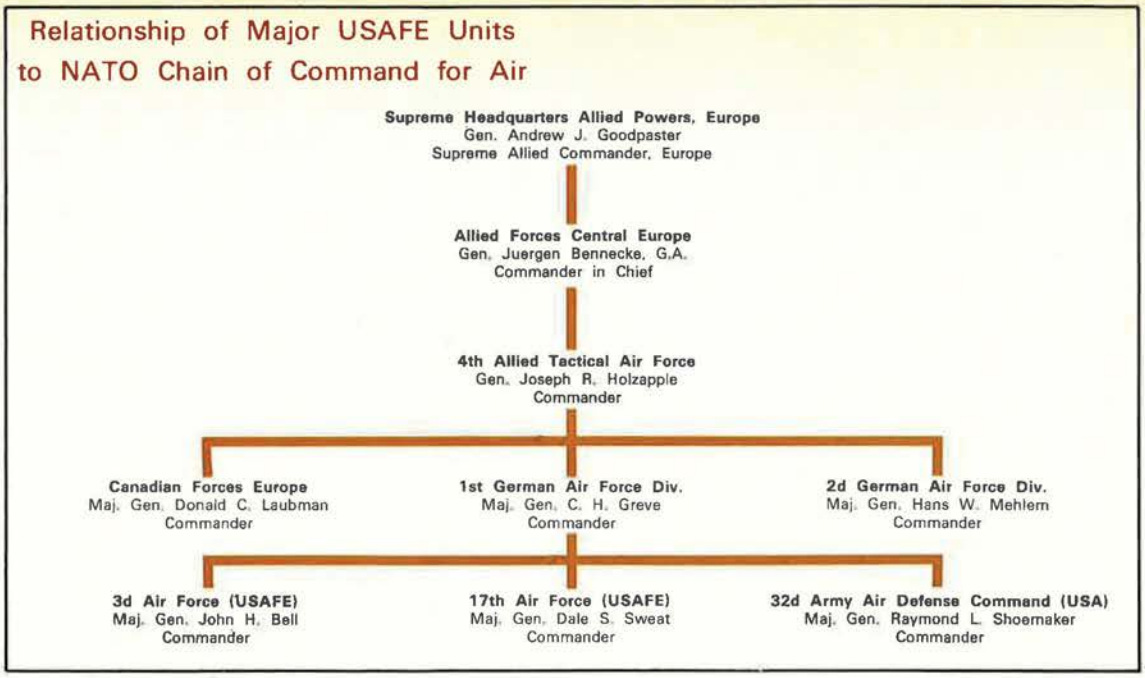
Commander in Chief
Gen. Joseph R. Holzapple

3d Air Force
Hq., South Ruislip, England
Maj. Gen. John H. Bell
Commander

16th Air Force
Hq., Torrejon AB, Spain
Maj. Gen. Edward A. McGough, III
Commander

17th Air Force
Hq., Ramstein AB, Germany
Maj. Gen. Dale S. Sweat
Commander

Relationship of Major USAFE Units to NATO Chain of Command for Air



Dual basing, while not a substitute for on-the-scene forces, serves a definite response purpose in providing an immediately available reinforcement.

To ensure the combat readiness of both dual-based and regular USAFE units and their successful integration into the NATO deterrent force, frequent exercises are conducted throughout the theater. Typical of these in 1970 were Black Sky in Germany, Deep Express in Greece-Turkey, and the dual-basing exercise, Crested Cap II.

Black Sky, or "Schwarzer Himmel," involved USAFE with German Air Force and Army units in a September tactical air exercise. Deep Express 70 was the largest exercise ever held in the Southern Region and involved forces from Greece, Turkey, Belgium, Luxembourg, Italy, England, Germany, and the United States. USAFE provided airlift, communications, tactical air control, logistic support, and a tactical fighter squadron.

Crested Cap II brought four NATO-committed F-4 squadrons of the 49th Tactical Fighter Wing, Holloman AFB, N.M., back to their German dual bases. The aircraft operated from Hahn, Bitburg, Ramstein, and Spangdahlem Air Bases in the second such exercise since the units left Germany in 1968. Approximately 2,400 personnel from Tactical Air

USAFE's biggest airlift punch is provided by the C-5. The giant transport completed its maiden European flight in 1970, now operates regularly in Europe.

Hundreds of steel, trussless-arched shelters are being built throughout USAFE to provide protection against surprise attack on USAFE aircraft.

Command units in the United States flew to Germany, demonstrating the availability and readiness of dual-based units to respond to any mission requirement.

Concurrent with modernization, USAFE is continuing its force-protection program through shelter construction and aircraft dispersal. Called TAB VEE, for Theater Air Base Vulnerability, the construction program is nearing completion in Europe.

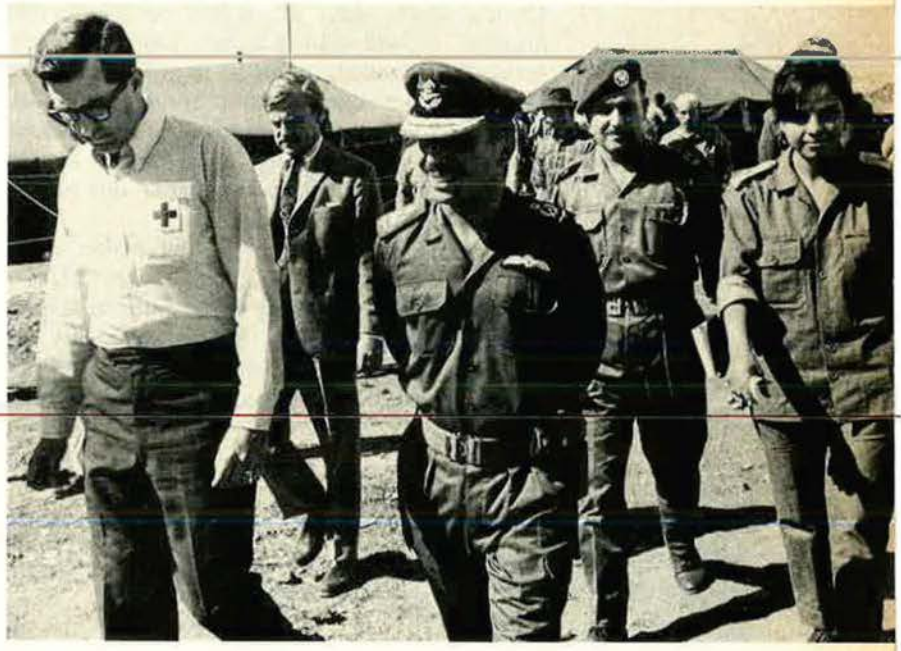
To further protect the command's aircraft through dispersal, USAFE has moved some squadrons to new locations. Zweibrucken AB, formerly a Canadian installation in southwestern Germany, was activated by USAFE, and two Phantom squadrons are being assigned there. Spangdahlem AB, which has operated as a support base since the 49th Tactical Fighter Wing was placed on dual-based status in the United States, has once again become a main operating base. The 23d Tactical Fighter Squadron, formerly located at Bitburg AB, has moved to Spangdahlem, and a squadron of EB-66s also has been located there.

While performing its primary mission, USAFE forces also demonstrated on several occasions the command's value to neighboring civilian communities in a humanitarian role. Typical of these actions were the USAF assistance provided to the earthquake-stricken town of Gediz, Turkey, and to the people victimized by the civil strife in Jordan.

Aid to the Turkish town was in the form of a thirty-seven-man disaster team, plus equipment and supplies dispatched in March 1970 from Cigli Air Base, about 180 miles away. The relief effort, mounted at the request of the Turkish government, sent Air Force civil engineers, medical and communications specialists, and security policemen into the area.

A much larger operation was the medical aid provided to Jordan in September 1970 under the auspices of the International Committee of the Red Cross (ICRC). In response to an urgent request from the government of Jordan, USAFE C-130 aircraft airlifted an Air Force and an Army mobile hospital into that strife-torn country, where they operated a joint American medical facility near Amman, caring for the sick and wounded in an operation dubbed "Fig Hill." Airlift in Fig Hill was a precision, timed flow, which delivered the medical units and necessary support elements, resupplied them daily, and returned them to home stations at the end of the operation. In all, the airlift moved 1,727 tons of cargo without a single aircraft accident or incident.

Equally impressive were the medical feats



Top photo, Jordan's King Hussein tours US mobile hospital flown into his civil-war-torn country by USAFE in September of last year. At left, USAF Col. Albert Howarth, US European Command Director of Relief Operation. Left background, US Ambassador to Jordan, Dean Brown. Picture at left, the best feeling of all for an airman: Sgt. John P. Stroup, who helped run mess facility for Jordanian patients, enjoys a moment with two Jordanian youngsters who had been injured in the Jordanian fighting.

Air traffic control over Berlin is an important responsibility of USAFE. Members of the 1946th Communications Squadron's Berlin Air Traffic Control Center (BARTCC) handle all military and civilian flights in and out of Berlin via three free world air corridors.

performed by the joint hospital at Amman. During thirty days of active operation, the hospital treated 648 patients, many of them seriously wounded, requiring major surgery and post-operative care. Those treated included both Fedayeen and Jordanian Army victims as well as civilians, and they ranged in age from infants born at the hospital to one person reputed to be 115 years old.

In the broadest sense, the Air Force structure in Europe is truly a team effort. MAC's strategic airlift capability is an important part of the USAFE posture and is especially essential in the dual-basing concept. AFCS, which operates a vast communications system, and USAFSS also play important roles. Aerial refueling in the theater is provided by SAC's KC-135s from Torrejon AB, Spain, and by the Air National Guard's KC-97 rotational unit, "Creek Party," at Rhein-Main AB, Germany. And TAC is especially heavily committed in the dual-based tactical fighters and in maintaining C-130 rotational units as part of the in-theater tactical airlift fleet USAFE operates.

In using all of these resources, USAFE is emphasizing the streamlined management that will produce maximum combat readiness—and ensure further improvement in the command's new profile for the 1970s. ■

USAFE gets significant air refueling support from Air National Guard, demonstrated here in German skies. Guard maintains a permanent KC-97 refueling operation based at Rhein-Main AB, Germany.

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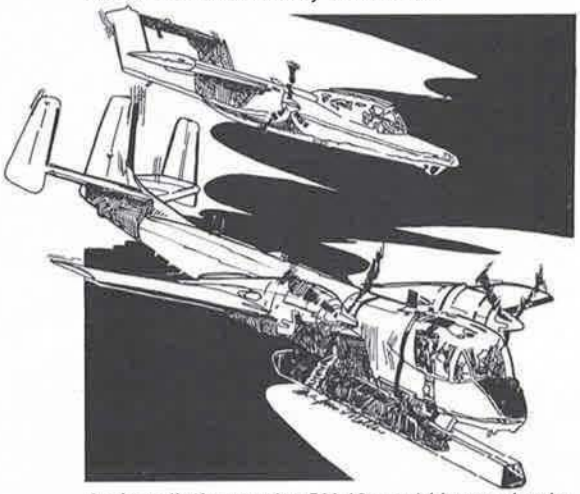

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MOTOROLA

A Major Air Command

Pacific Air Forces

ON THE concrete ramp at Tuy Hoa Air Base in the Republic of Vietnam, a dozen combat-tested fighter pilots climbed into the cockpits of their Supersabres, shook hands with their crew chiefs, and started engines. The early morning sky, turned bright orange from an east rising sun, illuminated hundreds of onlookers standing along the runway and near the steel and concrete revetments.

After taxiing slowly into position, the twelve F-100 Supersabres paused for final engine runup and check. Then, at precisely 0630, the pilots—two at a time—pushed forward their throttles. With a roar, the jet fighters sped down the runway. Minutes later, an airborne formation was joined, and the dozen jets circled Tuy Hoa Air Base for the last time as people below hoisted a final "thumbs-up" salute.

After thousands of combat missions in Southeast Asia, the 31st Tactical Fighter Wing was going home. On October 15, 1970, Col. Gilbert D. Hereth, 31st TFW Commander, and more than 100 Air Force personnel representing all the wing's squadrons stood at attention as the wing colors were sheathed.

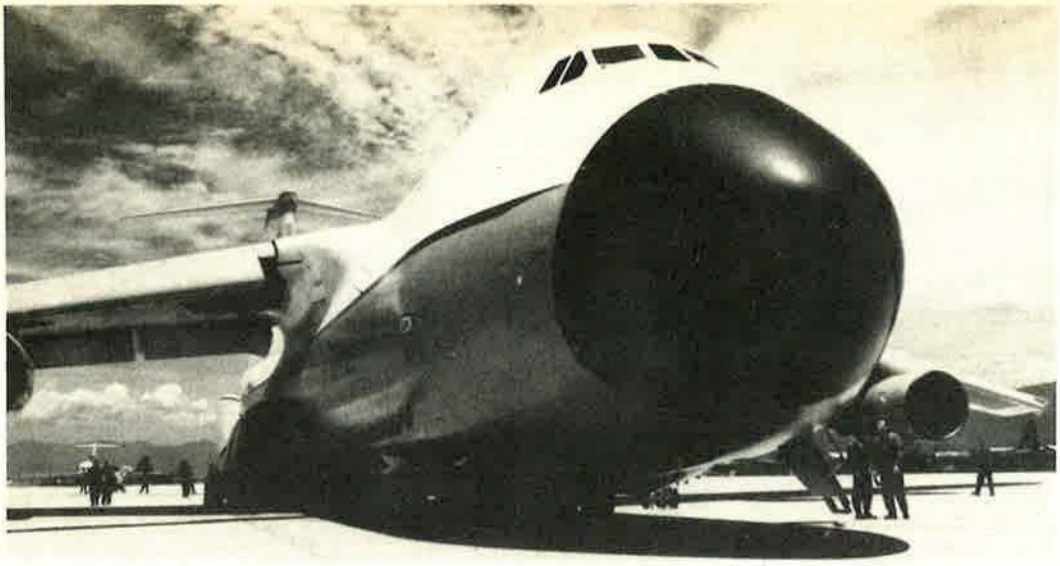
Scenes like this were repeated a number of times during 1970 and early 1971 as Pacific Air Forces (PACAF), the giant air command defending the Pacific, adjusted its posture to changing requirements based upon an improved military situation. When the mission is air superiority over some 85,000,000 square miles—an area approximately equal to one and a half times the earth's land mass—flexibility is an essential requirement. This flexibility was one of PACAF's chief assets as airpower in the Pacific was reshaped as a sharply honed instrument of national defense.

Deployed around the periphery of Communist Asia, Pacific Air Forces units are capable of conducting reconnaissance, airlift, and offensive and defensive operations to counter aggression if deterrence fails. PACAF provides tactical combat units within its area of responsibility . . . anywhere and at any time, upon a moment's notice.

While the focus of public attention continues to be the war in Southeast Asia, PACAF has undergone a carefully directed transition in keeping with the national objectives of the United States. This force realignment, in cooperation with US allies in the Pacific area, allows PACAF to continue providing effective airpower to preserve peace in the Pacific and throughout the free world.

Personnel strength in Pacific Air Forces, the aerial arm of the unified Pacific Command, was reduced from some 158,000 in 1970 to approximately 129,000 military and civilian members in 1971. Several air bases were closed, and others are currently being phased down. Throughout these changes, PACAF has

Gen. Joseph J. Nazzaro was named Commander in Chief, PACAF, in 1968. During World War II, General Nazzaro, a 1936 graduate of the US Military Academy, commanded an Eighth Air Force bomb group. After the war, he served in SAC as a bomb wing and division commander and as commander of SAC's Eighth and Fifteenth Air Forces. He has been an operations planner on the Air Staff, and Director of Personnel Planning at Headquarters USAF. Before assuming his present position, General Nazzaro served as Vice Commander in Chief and Commander in Chief of SAC, from 1964 to 1968.

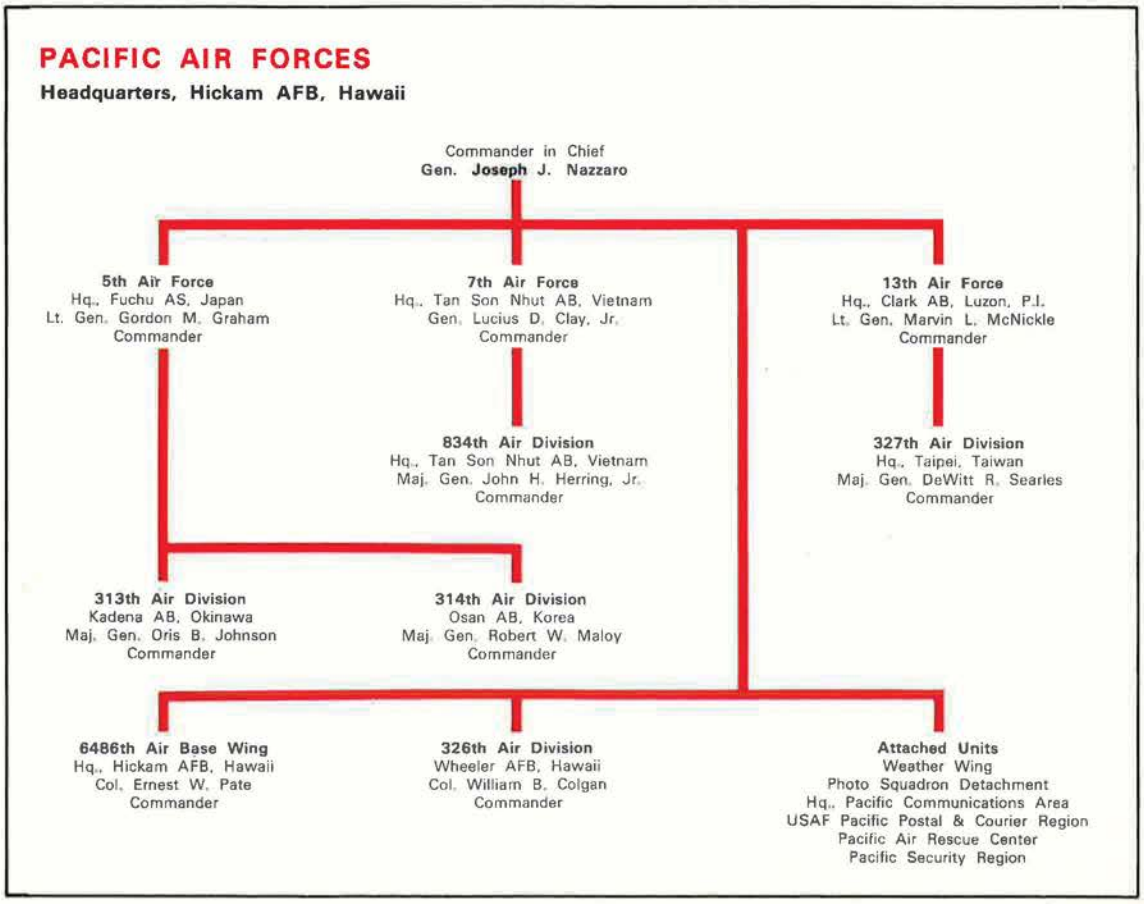


This striking shot of the C-5, taken during the Galaxy's maiden run to Cam Ranh Bay AB, Vietnam, in 1970, won "photo-of-the-month" laurels for Sgt. William Diebold of the 600th Photo Squadron, Pacific Air Forces.

demonstrated organizational ingenuity in meeting manpower and budget cutbacks while maintaining a dynamic defense posture.

The changing face of PACAF may be seen in all parts of the far-flung command. In the Republic of Vietnam, Tuy Hoa, with all its buildings, has been reassigned to the US Army. Nha Trang Air Base has been turned over to the Republic of Vietnam and is now a training headquarters for the Vietnamese Air Force. Binh Thuy also has been officially returned but is still used by the US Air Force to support VNAF operations.

In Thailand, the Air Force phase down has included the return of facilities at Takhli Royal Thai Air Base to the government of Thailand. The first wave of F-105 Thunderchief aircraft redeploying to the United States lifted off the Takhli runway October 19, 1970. The second wave left October 27, and the 355th Tactical



Fighter Wing was officially inactivated December 10, 1970. This ended one of the most colorful and historic chapters of the conflict in Southeast Asia. The 355th TFW was among the most decorated units in Air Force history. It carried the war in the air to North Vietnam, attacking strategic targets and engaging enemy aircraft in the skies over the North.

Meanwhile, in Japan, huge Tachikawa Air Base became a logistical support operations base when flying activities ceased there.

Looking to the south, Okinawa retained its importance, with the addition of another fighter unit to the 18th TFW. Pacific Air Forces' posture of readiness remains unchanged in the Republic of China, Taiwan.

This past year, Korea saw an increase in assigned USAF units. While the US Army is withdrawing some 20,000 troop spaces, Pacific Air Forces will retain major facilities.

Despite these changes, the major unit structure of Pacific Air Forces is unaltered. As in 1970, operations of the three numbered air forces, five air divisions, and one air base wing that make up PACAF are directed from Headquarters PACAF, Hickam AFB, Hawaii, by Gen. Joseph J. Nazzaro and his staff.

Although the number of bases has decreased by four in 1970, PACAF installations still stretch from Hawaii to Thailand. The command's area of responsibility covers roughly forty percent of the earth's surface—an area with a population of more than one billion people living under the flags of twenty-seven nations.

Throughout this area, Pacific Air Forces personnel are deeply involved in the business of maintaining free world defenses. Working hand in hand with the air forces of host nations through the Military Assistance Program, PACAF continually strives to strengthen and support the cause of Pacific peace.

A prime example of this international cooperation is PACAF's Seventh Air Force, headquartered at Tan Son Nhut Air Base, Republic of Vietnam. This numbered air force is charged with a threefold mission—to assist, train, and support the Republic of Vietnam Air Force (VNAF); to support friendly forces; and to conduct combat air operations in Southeast Asia. To accomplish this sizable task, Seventh Air Force has some 33,500 military personnel and nearly 1,000 aircraft.

President Nixon stated in 1969 that ". . . the primary mission of our troops is to enable the South Vietnamese forces to assume the full responsibility for the security of South Vietnam. . . ." In keeping with this objective, the primary efforts of Seventh Air Force are directed toward the improvement and modernization of the Vietnamese Air Force.

The VNAF was born in war and reached maturity under intense armed conflict. In 1951 it consisted of only one liaison squadron as part of the French Air Force and a single base, Nha Trang. Now the VNAF is a full-fledged professional force of 40,000 men, including 1,800 pilots and more than 800 aircraft. Its combat capability has improved significantly.

The US has had an important part in this. As early as 1961, the US Air Force assumed an advisory role to assist the VNAF. By 1962, with USAF advisory assistance, aircraft, and training, the VNAF had grown to an effective combat force, with approximately 4,500 personnel and nearly 100 aircraft.

Today's VNAF boasts five air divisions, ten tactical wings with a total of thirty-four squadrons, an Air Control and Warning Group, a Tactical Air Control Center, an Air Training Center, an Air Logistical Command, and an Air Medical Center. The VNAF goal of fifty squadrons in the next year and a half will bring the total strength to approximately 50,000 men.

From major bases at Tan Son Nhut, Bien Hoa, Binh Thuy, Nha Trang, Da Nang, Soc Trang, and Pleiku, VNAF pilots fly assault, forward air control, reconnaissance, search and rescue, interdiction, close support, paradrop, transport, psychological warfare, flare, target marking, medical evacuation, courier liaison, and training missions.

Training in the United States has been a way of life for the VNAF. Until a few years ago VNAF had no extensive facilities nor enough qualified instructors to train pilots and

SSgt. John Evans, Detachment 2, 601st Photo Flight, took this prize-winning photo of a formation of 355th Tac Fighter Wing F-105s. One of the most decorated wings in Air Force history, the 355th was officially inactivated in December 1970 on its return to the States from Takhli Royal Thai AB, Thailand.

Another photo of the month was taken by Capt. J. W. Franklin, 432d Combat Support Group, Udorn Royal Thai AFB. It shows MSgt. Gene Carr treating a Thai youngster.

More and more the Vietnamese are handling their own defense responsibilities. This Vietnamese airman is helping load ordnance onto an A-1H at Tan Son Nhut AB, Vietnam.

technicians. Even today, despite the rapid growth of the Nha Trang training center, VNAF continues to send some officers and airmen to the United States for training. A knowledge of English is imperative for the VNAF, since many of the technical and training manuals are in English.

Aircraft provided by the United States for VNAF strike missions include Northrop F-5 Freedom Fighters, Cessna A-37 attack aircraft, and McDonnell Douglas A-1 Skyraiders. Other combat and support aircraft include McDonnell Douglas AC-47 Spooky Dragonships, Fairchild Hiller C-119 Packets, and C-47 Skytrains.

Soon to enter the VNAF inventory are the four-engine C-123 Provider transports, powered by both jet and reciprocating engines, and the AC-119 "Shadow" gunships.

The important helicopter role is filled by the turbojet-powered UH-1 Huey gunships and UH-1 transports—called "Slicks." Also in the inventory are Boeing CH-47 Chinook medium-lift transports and a limited number of conventional Sikorsky H-34 Choctaws.

Using these resources of men and equipment, the Vietnamese Air Force has amassed an impressive list of accomplishments and heroic acts in its short history. The gallantry of VNAF crew members has won them many American awards, including the Silver Star, Distinguished Flying Cross, and the Air Medal. These awards were presented for actions in connection with the other two aspects of Seventh Air Force's three-sided mission—supporting friendly forces in Southeast Asia and conducting combat air operations.

Hand in hand with the VNAF, Seventh Air Force continues to fulfill its combat role in Southeast Asia operations. Tactical fighter strikes are flown daily in the Republic of Vietnam. Some are in response to requests from friendly forces; others are preplanned against targets identified through analysis of current intelligence data. Fighter aircraft ranging from vintage A-1 Skyraiders to jet-age F-4 Phantoms can reach any battle scene within minutes.

Control of this tactical air support is exercised through the Tactical Air Control System (TACS), which processes requests for air strikes and controls the aircraft en route to the target and during the strike. The TACS includes both VNAF and US Air Force personnel.

The pinpoint effectiveness of airpower in support of ground forces in Vietnam can be attributed in large measure to the forward air controllers (FACs). Flying Cessna O-1 Bird Dogs, O-2 Super Skymasters, and North American OV-10 Broncos, USAF and VNAF FACs seek out the enemy wherever he is hiding. Once the enemy is located, the FAC requests approval, through a Direct Air Support Center, for tactical air strikes on the target area.

Most of the reconnaissance performed by the USAF in Vietnam is in support of ground forces. Missions include those required to support ground force maneuvers and daily sorties to search for new enemy activity.

Specially charged with this reconnaissance task is the 460th Tactical Reconnaissance Wing. Operating from Tan Son Nhut AB, this unit flies McDonnell RF-4C Phantom IIs, Martin RB-57 Canberras, and Douglas EC-47 Skytrains. Other Seventh Air Force aircraft acquire intelligence information as a secondary role.

Rounding out the USAF/VNAF close-air-support teams are the gunship configured AC-47, AC-119, and AC-130 aircraft. These former transport aircraft, fitted with side-firing Miniguns capable of firing 6,000 rounds a minute, have proved their worth repeatedly in supporting friendly ground forces.

One of the latest of the gunships is the AC-119K, known as the "Stinger." Equipped with two J85 jet engines augmenting the original two piston engines, and with two 20-mm cannon in addition to four Miniguns, it is a potent weapon system. It is armored for crew protection and equipped with gunsight, fire-

control systems, flare launchers, illuminators, and a variety of sensors and electronic equipment.

However, close air support for friendly ground forces by gunships or fighter-bombers is not enough. These forces must have supplies. This job, air transportation of men and materiel throughout Southeast Asia, is statistically staggering. Every several minutes an airlift aircraft takes off or lands somewhere in the Republic of Vietnam. In a year, crews airlift millions of pounds of cargo and many troops and passengers. C-130 Hercules, C-123 Providers, and C-7A Caribous, under the management of the 834th Air Division, Tan Son Nhut AB, are the workhorses performing this giant task. At the same time, resupply from the United States is normally provided by Military Airlift Command's C-141 jet Star-Lifters. The Military Airlift Command also supports PACAF with vital air rescue services.

Close air support, combat air strike, airlift—these and many more missions are performed by the men of Seventh Air Force and those of Thirteenth Air Force based in Thailand. (Thirteenth Air Force units in Thailand provide tactical support for Seventh Air Force operations in Vietnam. Thirteenth Air Force units come under operational control of Seventh Air Force.) SAC B-52 bombers have been essential in destroying enemy forces and limiting the infiltration of men and supplies down the Ho Chi Minh Trail.

But PACAF has other areas of interest just as important as turning back Communist aggression in Southeast Asia. Pacific Air Forces has justly earned the title "Guardians of the Pacific" by serving as a realistic deterrence force throughout all the Pacific.

Fifth Air Force, headquartered in Japan, has an area of responsibility nearly as large as that of the United States. Manned by more than 25,000 military tactical and support personnel, Fifth Air Force directs aircraft flying from bases in Korea, Japan, and Okinawa. Within the very near future, many Fifth Air Force units and aircraft will be located in Korea and Okinawa, as active tactical bases are phased out of Japan.

This PACAF photo of the month, by Sgt. Ralph Saenz, of the 600th Photo Squadron, depicts an Air Force C-130 paradropping materiel during a resupply mission near Ha Thanh Camp, Republic of Vietnam.

Headquartered at Clark Air Base, Republic of the Philippines, Thirteenth Air Force's area of defense and tactical support covers some 25,000,000 square miles. With 32,000 military members, including those serving in Thailand, the "Jungle Air Force" provides logistical and maintenance support to US Air Force units in Southeast Asia.

Air defense is another important aspect of the Pacific Air Forces mission and is the specialty of the 326th Air Division. Also known as the Hawaiian Air Defense Division, this unit, based at Wheeler AFB, Hawaii, is responsible for air defense of the areas east of Guam, Johnston, Christmas, Gilbert, Marshall, Midway, Wake, Palmyra, Kwajalein, and Eniwetok.

Key logistics support for PACAF Headquarters and tenant units in Hawaii is the mission of the 6486th Air Base Wing, Hickam AFB, Hawaii. The wing also maintains an airborne command post system for the Commander in Chief, Pacific.

Airlift for Pacific Air Forces is provided by the Directorate of Airlift (DOL), organized in 1969 to succeed the 315th Air Division, previously based in Japan. DOL, located at Hq. PACAF, is the agency responsible for the unified Pacific Command's tactical airlift capability. It contains all the key elements of a system that responds to the needs of Army, Navy, Marine, and Air Force units in the Pacific Command.

For Pacific Air Forces units to carry out this variety of missions, from combat support to air defense to airlift, a lot of flying hours—safe flying hours—are involved.

In 1970 PACAF achieved the best aircraft accident record in the command's history. During this time there were but 4.2 accidents per 100,000 flying hours. Considering the fact that PACAF is operating in actual combat with more aircraft than any other major command, and in climates ranging from frigid Korea to the steamy tropics of Southeast Asia, the accomplishment is staggering.

The professionalism, discipline, and proficiency this safety record demonstrates are typical of the way Pacific Air Forces goes about its mission. With such allies as Japan, Republic of Korea, Republic of China, Republic of the Philippines, Republic of Vietnam, Thailand, and many others across the Pacific, PACAF will continue to carry out its vital air-superiority mission. The men and women of Pacific Air Forces stand proudly and efficiently as "Guardians of the Pacific." ■

A Major Air Command

The Military Airlift Command

A NEW ERA in military airlift operations dawned in 1970 with the introduction of the C-5 Galaxy, the world's largest aircraft, into the Military Airlift Command's global operational airlift force.

MAC will have unequaled airlift capability upon completion of the transition from propeller aircraft to the C-5 and C-141 all-jet airlift force. The C-141 StarLifter, teamed with the C-5, gives the command the ability to deploy fighting forces and combat equipment, including armored and heavy tracked vehicles, to any point in the world within hours.

MAC exists primarily to carry out its wartime mission, and fundamental to that mission is the requirement to maintain in a constant state of readiness a military airlift system that is responsive and capable of all tasks assigned by the Joint Chiefs of Staff through the Chief of Staff, USAF.

This command is responsible for several major missions which serve the Air Force and the Department of Defense: aerial delivery of combat forces and equipment, logistical resupply of deployed forces, airdrop of troops and battle equipment, aeromedical evacuation; aerial search, rescue, and recovery of downed airmen and space hardware; weather sampling, forecasting, and dissemination; documentary photography and audiovisual service; and aerial electronic surveying and photomapping. Also, the command acts as the executive agent to contract commercial airlift for the Department of Defense.

MAC headquarters at Scott AFB, Ill., directs approximately 90,000 military and civilian personnel in more than forty countries. Most of the command's people are involved in the strategic airlift mission. This mission is carried out by two numbered air forces (the Twenty-first Air Force, McGuire AFB, N.J., and the Twenty-second Air Force, Travis AFB, Calif.). Major units of the Twenty-first AF include: the 435th Military Airlift Support Wing (MASWg), Rhein-Main AB, Germany; the 436th Military Airlift Wing (MAWg), Dover AFB, Del.; the 437th MAWg, Charleston AFB, S.C.; and the 438th MAWg, McGuire AFB, N.J. The four units of the Twenty-second AF include: the 60th MAWg, Travis AFB, Calif.; 61st MASWg, Hickam AFB, Hawaii; 62d MAWg, McChord AFB, Wash.; and the 63d MAWg, Norton AFB, Calif.

MAC also maintains several specialized technical services and specific mission units:

- **The Aerospace Audio-Visual Service**

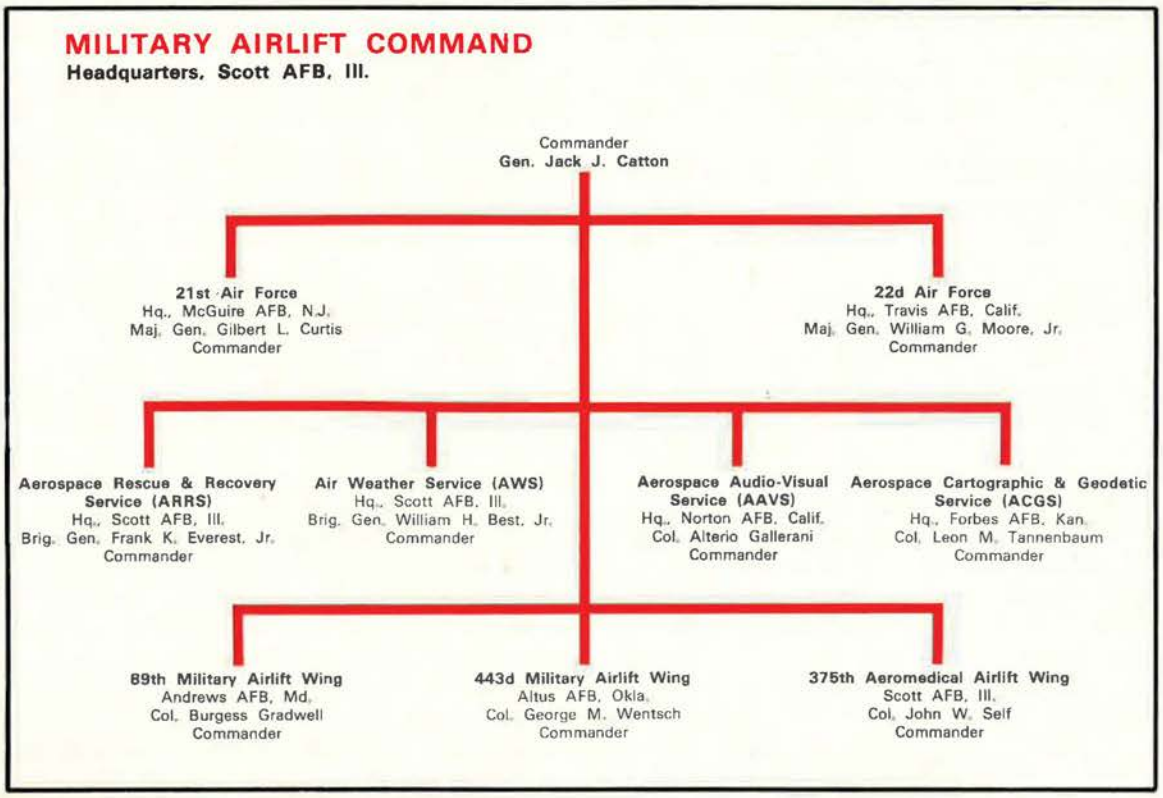
Gen. Jack J. Catton, MAC's Commander since August 1969, served as a B-29 pilot in the Pacific during World War II. For nearly twenty years after the war, he was assigned to SAC as a squadron, wing, and division commander and in staff positions. From 1964 to 1968, General Catton held the posts of Director of Operational Requirements, Director of Aerospace Programs, and Deputy Chief of Staff, Programs and Resources, at Headquarters USAF. Prior to his present assignment, he was commander of SAC's Fifteenth Air Force at March AFB, Calif.

Penetrating hurricanes is one of the jobs done by Military Airlift Command's Air Weather Service WC-130 Hercules aircraft. The aircraft are used for storm recon over the Pacific and Atlantic.

(AAVS), Norton AFB, Calif., is the Air Force's single manager of photographic and video products and services. These services are available not only to the Air Force, but also to the Department of Defense, the Atomic Energy Commission, and other government elements.

• **Air Weather Service** (AWS), Scott AFB, Ill., operates a worldwide network of weather facilities to support Air Force and Army units at all levels. AWS operates more than fifty specially configured weather aircraft and also provides combat weather support.

• **The Aerospace Rescue and Recovery Service** (ARRS), Scott AFB, Ill., trains and equips forces to conduct peacetime and wartime search, rescue, and recovery missions, ARRS' global mission ranges from combat recoveries in Southeast Asia to the retrieval of vehicles and personnel returning from space.



The HH-53, dubbed the Super Jolly Green Giant, is MAC's Aerospace Rescue and Recovery Service heavy-lift chopper, used in Vietnam. Able to be refueled in flight, the big craft achieved the first helicopter transpacific crossing in 1970.

• **Aerospace Cartographic and Geodetic Service** (ACGS), Forbes AFB, Kan., is assigned the task of gathering geodetic data for the cartographic needs of the Air Force and Army. In addition, ACGS conducts ground surveys and gravity-measuring activities at missile sites, radar installations, and satellite-tracking stations.

Additionally, three independent airlift wings perform specialized airlift missions for the command:

• **89th Military Airlift Wing, Special Missions,** Andrews AFB, Md., carries out one of the greatest responsibilities of any element of the US government—the air transportation of top government officials, including the President, Vice President, cabinet members, and foreign dignitaries.

• **375th Aeromedical Airlift Wing,** Scott AFB, Ill., airlifts injured servicemen and their dependents from all branches of service within the continental US, and the North Atlantic and Caribbean areas. In Fiscal Year 1970, this domestic "air-evac" system transported more than 67,000 patients to some 530 hospitals and specialized care centers in the United States.

• **443d Military Airlift Wing,** Altus AFB, Okla., is a special wing that trains MAC flight crews and ground personnel. Nicknamed "The University of MAC," this training wing provides simulator and flight training in the C-141 StarLifter and the C-5 Galaxy.

MAC also receives outstanding support from its Reserve Forces (Air Force Reserve and Air National Guard). Those combined forces have about 42,000 people and more than 300 aircraft of various types. The Reserve Forces are trained according to MAC standards and are available to augment MAC when mobilized.

MAC's unique ability to carry out the strategic airlift mission is demonstrated annually during such exercises as Reforger/Crested Cap. Reforger II in 1970 involved the airlift of more than 11,000 men of the 1st Infantry Division, the "Big Red One," from the US to Germany in 144 C-141 missions and a dozen C-133 missions, within a seven-day period. The entire airlift, including the same number of missions to return the men and equipment to the US following maneuvers, required approximately 9,000 flying hours by MAC aircraft.

Also in the European area, MAC provided airlift for the deployment and redeployment of troops and equipment during Exercise Deep Furrow, and an airdrop of airborne assault forces during exercises. Augmentation airlift was also provided by MAC for theater forces during exercises Car Crew III and Dawn Patrol. MAC combat aircrews airlifted 1,200 paratroopers of the US Army in Europe and 180 tons of support equipment to a drop zone in northeastern Italy, in support of the Dawn Patrol exercise.

In the Pacific area, MAC furnished airlift for the Leprechaun Laughter series of exercises, in the Hawaiian Islands, and in Freedom Vault, staged in South Korea.

MAC is also proud of its rapid response to humanitarian requirements the world over. During FY 1970, MAC flew 35,750 blankets to the flood victims of Honduras and Morocco, provided eighteen disaster-relief missions to the Gulf Coast of the United States after the onslaught of Hurricane Camille, and airlifted patients from the US Naval Hospital at Corpus Christi, Tex., damaged by Hurricane Celia.

Tornado victims of Lubbock, Tex., received aid within fifteen hours after the request reached MAC. MAC's airlift of supplies, helicopters, and rescue crews alleviated suffering among the people of Peru's coastal communities, which had been leveled by an earth-

quake. MAC aircraft also rushed helicopters from the US to Pakistan in late 1970 when that area was devastated by a massive tidal wave.

Another MAC activity, special assignment airlift, plays an important defense role by its support of the SAC missile-emplacement network. In 1970, a Minuteman IIIC was airlifted for the first time. By the end of the year, a total of forty-four missiles of various types had been airlifted. The great majority of these were Minuteman III.

The domestic aeromedical airlift system is now an all-jet aircraft operation conducted with twelve C-9 Nightingales, the first aircraft with an interior designed specifically to accommodate patients. In Fiscal Year 1970, more than 140,583 patients were airlifted worldwide. This figure includes 78,181 patients, of whom 30,174 were battle casualties airlifted within the Pacific or from the Pacific to the US in medically configured C-141 StarLifters.

The first C-5 Galaxy was delivered to Charleston AFB, S.C., on June 6, 1970. The world's largest jet transport aircraft, the C-5, together with the C-141 StarLifter, will give defense a degree of mobility never before possible. The C-5/C-141 force can airlift entire airmobile, infantry, mechanized, and armored divisions to any point in the world.

Other C-5 squadrons are located at Travis AFB, Calif., and Dover AFB, Del., effective in mid-1971.

When the planned C-5 force is fully operational, US military airlift will have five times the capability it had in 1961.

Channel airlift for FY 1970 totaled 2,890,514 passengers and 658,643 tons of cargo, decreases of one percent and 9.2 percent, respectively, from the previous year. Channel movement in support of Southeast Asia also decreased from FY 1969, with a total movement of 1,860,841 passengers and 439,957 tons of cargo.

During Fiscal Year 1970, approximately ninety-one percent of channel passenger traffic and sixteen percent of channel cargo traffic was transported by commercial carriers under contract to MAC.

Looking ahead, new air passenger and freight terminals and additions to existing terminals have been included in military construction programs. Mechanized baggage conveyers will be a part of these facilities. Adaptability to wide-bodied passenger aircraft is a design consideration.

Design work is proceeding on new passenger facilities for Rhein-Main, Germany; Mildenhall, England; Incirlik, Turkey; and Hickam AFB, Hawaii. New freight facilities are under design for Mildenhall, England; Yokota AB, Japan; and Dover AFB, Del.; while the freight terminal at Travis AFB, Calif., is now under construction. An addition to the existing facility is under way at Charleston AFB, S.C., and a new cargo port is planned for Ramstein AB, Germany. Additions to existing passenger terminals are being designed for McGuire AFB, Charleston AFB, and Travis AFB in the United States, and for Yokota AB, Japan, and Torrejon AB, Spain.

The year 1970 was one of major reorganization and reduction of overseas forces. The addition of sophisticated weapon systems to the MAC inventory has increased the complexity of support requirements and the demand for skilled personnel.

In the words of Gen. Jack J. Catton, MAC Commander, "We are justifiably proud of the accomplishments of this year and accept the challenge to do more and better with less. We accept this challenge as a goal that will be reached through the combined efforts of the dedicated, professional individuals of MAC."■

Military Airlift Command's team of the 1970s: The C-5 Galaxy, world's largest airplane, and the C-141 StarLifter, both built by Lockheed.

Principal passenger: the President. Air Force One is flown by MAC's 89th Military Airlift Wing out of Andrews AFB, Md.

Christened the Nightingale after the famed British founder of military nursing, MAC's new C-9 aeromedical transport airlifts sick and injured military people between hospitals in the US.

A Major Air Command

Air Force Systems Command

During 1971 military needs continue to pace the nation's science and technology programs, and the Air Force Systems Command (AFSC), which celebrated its tenth anniversary April 1, 1971, continues to play a major role in responding to these needs.

AFSC is responsible for developing and providing modern aerospace systems, weapons, and equipment ranging from microcircuits to missiles and bombers . . . from advanced fiber-composite materials to air-superiority fighters . . . from computers to command and control networks to space foods and space satellites.

Gen. George S. Brown, who became Commander of AFSC in September 1970, declared, "The mold in which the Air Force of the future will be cast is built upon the research and development we are carrying out today.

"We can get nowhere without a sound technology base as our entry to the future," he continued. "Technology and the funding to underwrite it will determine whether we can increase our knowledge sufficiently to meet the challenges this world imposes upon it."

AFSC acquired at its birth not only responsibility for the military space development mission, but for the complete acquisition program for all Air Force systems, from development, test, and production through installation and checkout.

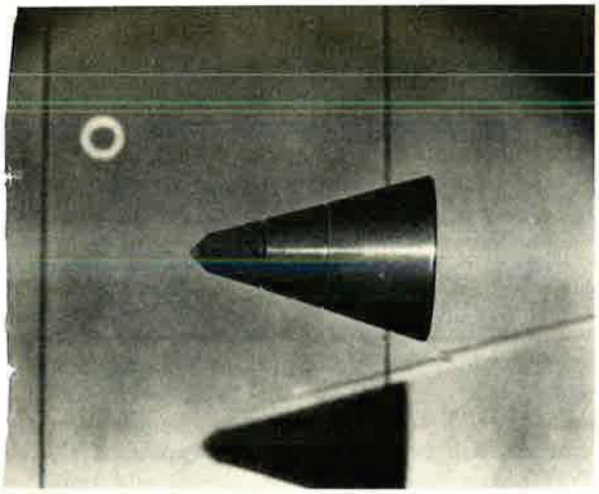
Systems Command also meets the major space responsibilities of the Department of Defense (DoD). These include research, development, test, and engineering of satellites, boosters, space probes, and associated systems needed to support specific National Aeronautics and Space Administration (NASA) projects and programs arising under basic agreements between DoD and NASA.

From headquarters at Andrews AFB, Md., General Brown directs the operations of a number of divisions, development and test centers, ranges, and laboratories. Command personnel strength numbers approximately 9,700 officers, 17,600 airmen, and 29,700 civilians.

In coordinating the military and civilian scientific and industrial efforts of the US toward the development and procurement of aerospace weapon systems, the command directed the expenditure of more than twenty-eight percent of the Air Force budget in Fiscal Year 1971. The budget to support the command's programs and installations totals $6 billion. The command administers contracts having a total face value of about $42 billion.

AFSC emphasizes the goals of less risk-taking in the acquisition and production of major systems as defined by the President, the Con-

Gen. George S. Brown became Commander of AFSC in 1970. A 1937 graduate of the US Military Academy, he won the Distinguished Service Cross as a pilot in the low-level Ploesti raid of August 1, 1943. He was Executive to the Chief of Staff, USAF, from 1957 to 1959. During the next four years, he held the post of Military Assistant, first to the Deputy Secretary of Defense, then to the Secretary of Defense. From 1966 to 1968, he was Assistant to the Chairman, Joint Chiefs of Staff. Prior to his present assignment, General Brown was Commander of the Seventh AF in Vietnam.



A twenty billionth of a second laser beam burst "freezes" ballistic model, traveling at thousands of miles an hour in the ballistic range at Arnold Engineering Development Center, Tullahoma, Tenn.

gress, and the Secretary of Defense. This means the feasibility of certain subsystems must be reviewed at the command level before they reach the demonstration stage.

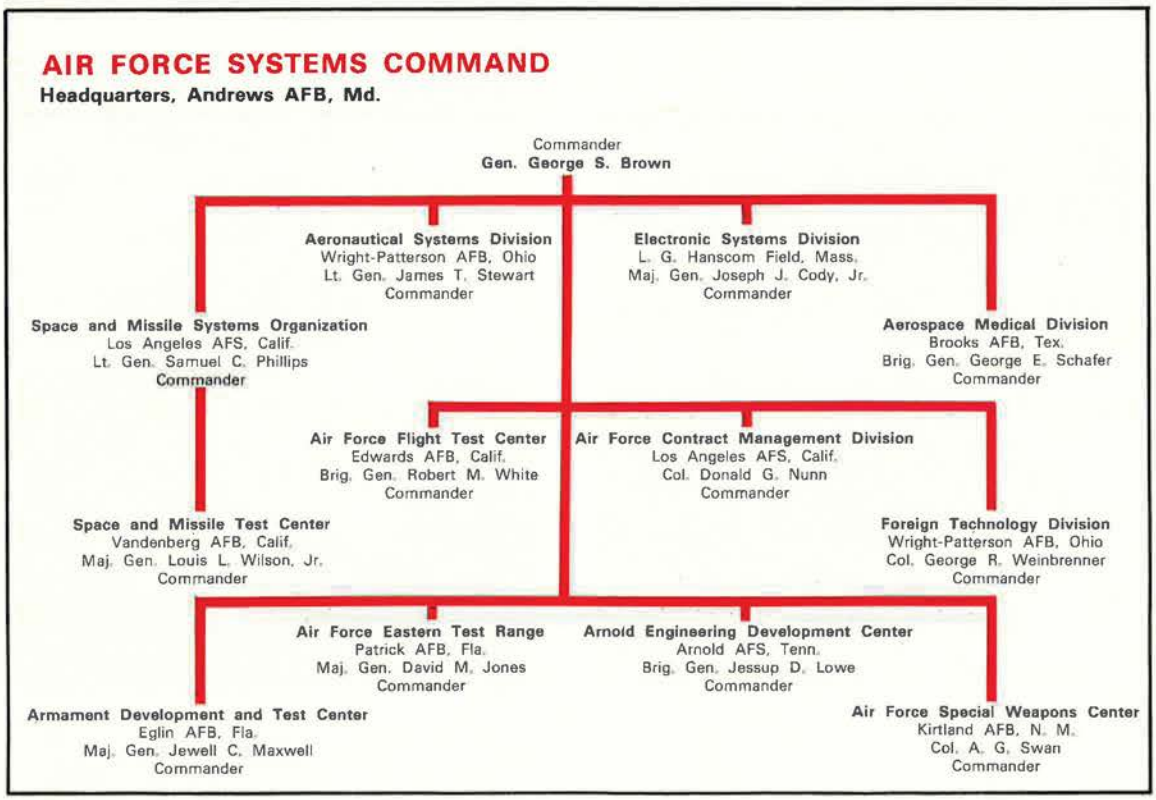
The AFSC program-management area has been realigned to accomplish certain functional responsibilities. The Program Element Monitor (PEM) functions, responsibilities, and personnel previously assigned at the Air Staff for certain systems programs have been transferred to command headquarters at Andrews AFB, under General Brown's direct management control. An AFSC Executive Review Board was established on March 15, 1971, to revise AFSC acquisition directives in order to implement Deputy Secretary of Defense Packard's acquisition policy.

In July 1970 the Air Force Office of Aerospace Research (OAR), the primary basic-research organization of the Air Force, was merged into the Air Force Systems Command. Thus, AFSC is now responsible for all Air Force R&D from the time an idea is conceived in the mind of an Air Force or contract scientist, until a "new generation" piece of hardware or scientific improvement is handed over to the using operational command.

Aeronautical Systems

B-1—On June 5, 1970, Secretary of the Air Force Robert C. Seamans, Jr., announced the contractors for the new B-1 advanced strategic bomber. North American Rockwell Corp. and the General Electric Co. were selected to develop the airframe and propulsion systems, respectively. This action did not authorize production. It authorized the contractors to proceed with the engineering and design effort, including the fabrication of flight-test aircraft. It also authorized General Electric to engineer, design, develop, and fabricate preliminary flight-rated test engines for the B-1 program.

Secretary Seamans also announced, on February 11, 1971, that improved internal management procedures being implemented should reduce the cost of the research and development phase of the new B-1 strategic bomber. He said a closer Air Force-contractor relationship in



the daily progress of the aircraft's development cycle should enable the government to reduce its dollar commitment during this phase of the B-1 program and to reach a production decision more efficiently. All development and test efforts that the Program Manager now determines are not necessary to support a logical production decision have been either deleted or deferred. Items to be deferred include production tooling, training equipment design, and aerospace ground-equipment design and test.

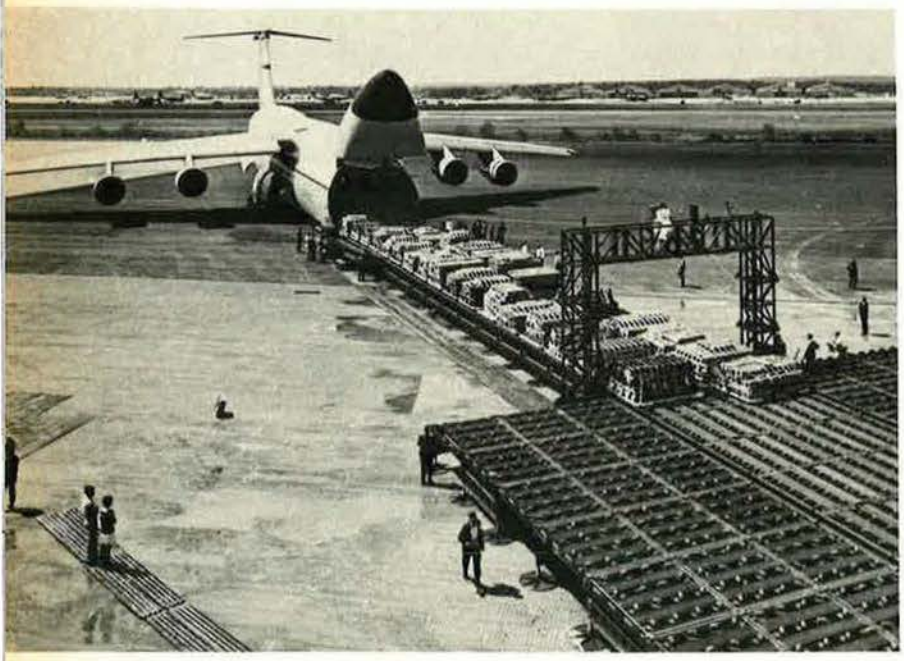
F-15—The F-15 air-superiority fighter is a single-place, twin-engine jet fighter designed to gain and maintain air superiority, with substantial air-to-ground capability as well. Significant announcements concerning F-15 development include the selection of Pratt & Whitney Aircraft, United Aircraft Corp., Palm Beach, Fla., on February 27, 1970, to develop and produce engines for the Air Force F-15 and Navy F-14B fighter aircraft. First buy of engines will be used to support initial test aircraft for both Navy and Air Force. Hughes Aircraft Co., Culver City, Calif., was selected on September 30, 1970, to develop and produce an attack radar system for the F-15. The attack radar system will permit long-range acquisition of targets.

Parallel contracts were issued to General Electric Co. and the Philco-Ford Corp. for the Phase III development of the GAU-7/A 25-mm aircraft gun system for the F-15. These contracts will provide the Air Force two test guns and 10,000 rounds of test ammunition from each contractor for use in system evaluation to be performed at the Armament Development and Test Center (ADTC), Eglin AFB, Fla., during August–November 1971.

A-X—Secretary Seamans announced on December 18, 1970, that the Fairchild Hiller Corp., Republic Aviation Division, and Northrop Corp., Norair Division, had been selected to participate in the competitive prototype development phase of the A-X specialized close-air-support aircraft. The A-X will be developed in accordance with the "fly-before-buy" concept in an effort to reduce overall program costs through step-by-step progression and hardware flight demonstration. Engine contractors will be selected by the two A-X airframe contractors. Both companies will build two prototype aircraft in the competitive development phase of about twenty-six months. The A-X (for attack-aircraft, experimental) is being developed to provide close air support to ground combat troops.

C-5—In August 1970, a C-5 Galaxy, the Air Force's gigantic cargo transport, set a new flight endurance record of twenty hours and twenty-nine minutes. The flight was made without refueling and entirely over the continental limits of the US. At the end of 1970, a total of thirty aircraft had been delivered either for test, training, or operational use. Of these, sixteen are flying regular military cargo missions to overseas bases. Total flying hours as of February 28, 1971, for all C-5 aircraft was more than 12,000 hours.

SRAM—The Air Force awarded Boeing Co. a $183.6 million definitive contract for production of the Short-Range Attack Missile (SRAM) in January 1971. It is scheduled to arm the



AFSC's Aeronautical Systems Division tests an air-transportable dock that can be lifted by a C-5 to remote areas. Dock capacity of some 700,000 pounds can transfer and store the cargo of three C-5s.

"Big Shakey" swallows a computer-equipped van, part of Electronic Systems Division's new Tactical Data Automation Development Program. The van is used to simulate operations for potential users.

Program directors E. E. Cossette and 2d Lt. J. M. Corbitt check experimental digital data detection system at AFSC's Rome Air Development Center.

Col. J. A. Trask tests new lightweight radio for forward air controllers. Called AN/PRC-66, the fifteen-pounder will replace the heavier unit, on the table.

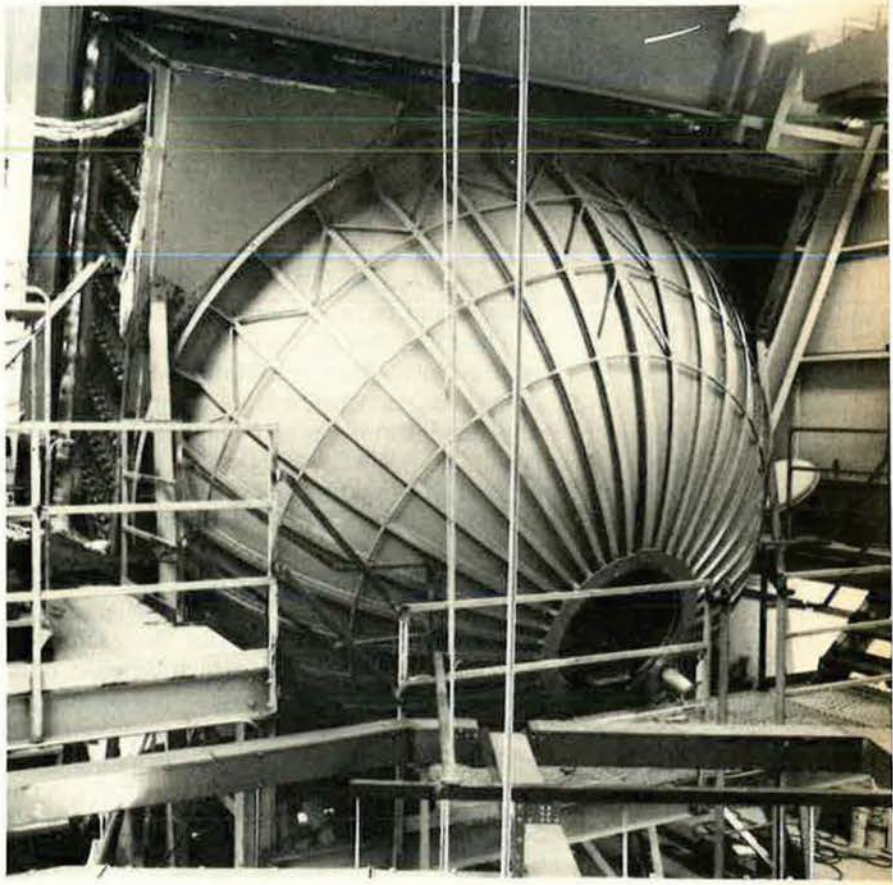
B-52 and FB-111A bombers. The SRAM is to be fired from strategic bombers at ground targets. It will carry a nuclear warhead and will provide a standoff capability for penetration of sophisticated enemy defense systems.

Maverick—The first Air Force Maverick missile in the Category II test series was successfully launched from an F-4D aircraft in February 1971 over the White Sands Missile Range. Maverick is an air-to-ground weapon designed to destroy tanks, armored vehicles, field fortifications, and other tactical targets. The pilot places cross hairs over the target, which appears on a television screen in his cockpit, to launch the Maverick.

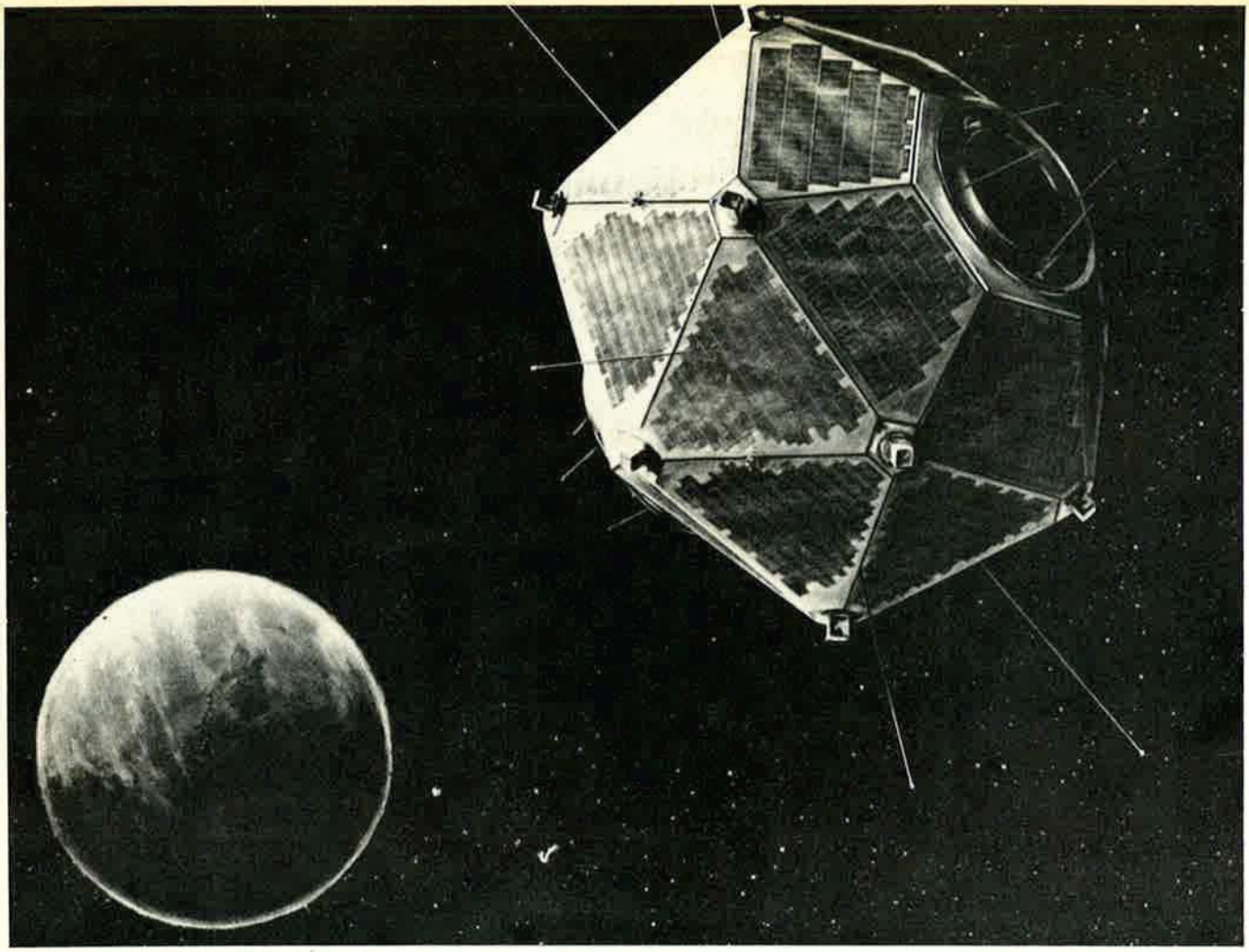
F-5E—(formerly the International Fighter). The Air Force selected Northrop's improved version of the F-5 Freedom Fighter over three other competitors as the International Fighter aircraft. The decision was bolstered by the fact that all four of the countries that are expected to be prime recipients of the aircraft already have versions of the basic F-5 in their inventories. This will reduce crew-training costs as well as costs associated with establishing a completely new logistics pipeline.

Command and Control

AWACS—The Air Force selected the Boeing Co., Seattle, Wash., as the prime contractor to begin development of the Airborne Warning and Control System (AWACS). AWACS is be-



This is the reflector assembly for a scale version of an advanced long-range radar that is built under contracts administered by AFSC's Rome Air Development Center.



Artist's conception of how Vela nuclear-detection satellites appear in orbit 70,000 miles out. DoD's Vela satellite program is managed by AFSC's Space and Missile Systems Organization in Los Angeles.

ing developed to fulfill two defense needs: air defense and tactical command and control.

The E-3A AWACS will be the first US plane with a "look-down" capability—radar capable of scanning downward from a high-flying plane to detect incoming enemy bombers flying at low level. The AWACS will be able to direct long-range fighter-interceptors in defense against any attacking aircraft. The E-3A aircraft is a modified Boeing 707.

Lightweight Radio—Forward air controllers will soon be using new ultra-lightweight radios. Weighing only fifteen pounds, the radios will replace the older models, which weighed up to sixty-five pounds. The radios' compactness is due to the use of micromodular techniques that permit thirty-minute field maintenance. They can be used for both ground-to-ground and ground-to-air communications.

Compass Link—A new photo-relay system has been turned over to the Air Force Communications Service for operational use. For more than a year, the system, called "Compass Link," has been relaying high-quality aerial-reconnaissance photographs from Southeast Asia to the Pentagon.

Space and Missiles

Operational control of the first Skynet Communications Satellite was turned over to the United Kingdom on January 30. This satellite, the first of two built by Philco-Ford Corp. under a contract managed by AFSC's Space and Missile Systems Organization (SAMSO), was launched into orbit aboard a Thor-Delta booster, from the Air Force Eastern Test Range, Patrick AFB, Fla., November 14, 1969.

The first of two communications satellites for NATO, built by Philco-Ford Corp. under a contract managed by SAMSO, was successfully launched from the Air Force Eastern Test Range on a Thor-Delta booster on March 20, 1970. It was extensively tested, positioned at its final location off the west coast of Africa about five weeks later, and turned over to the Supreme Headquarters, Allied Powers, Europe, for operational use on May 19, 1970.

The last two scheduled Vela nuclear-detection satellites were launched April 8, 1970, from Cape Kennedy, Fla., on a Titan IIIC booster. Although the satellite-development program has ended, project officers are still reviewing telemetry from Vela and assisting in development of advanced technology for future satellites.

Minuteman III—AFSC turned over the first flight of Minuteman IIIs to the Strategic Air Command (SAC) on June 19, 1970. This event was one of the highlights of the ten-year Minuteman program which began in 1961. The Minuteman III can strike at more than 15,000 mph, is less than sixty feet long, and can deliver multiple, independently targeted warheads (MIRVs).

Laboratories

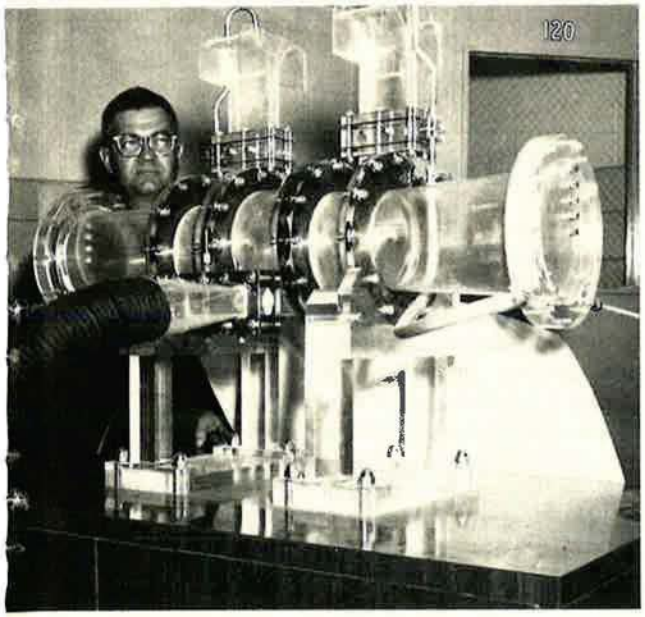
The AFSC laboratories play an important part in finding practical applications for the research and development in which the command is engaged. For example, the Advanced Research Electromagnetic Simulator (ARES) has been constructed by the AFSC's Weapons Laboratory (AFWL) for the Defense Atomic Support Agency (DASA) at Kirtland AFB, N.M. The AFWL-managed facility simulates effects that could be present from detonation of nuclear devices.

An unusual flow-visualization technique, which uses a laser as a light source, is now helping engineers obtain a cross-sectional view of the entire flow field around scale-model aircraft in wind tunnels at AFSC's Arnold Engineering Development Center (AEDC) at Arnold AFS, Tenn. The new technique has been applied in recent tests seeking the optimum configuration for a "hypersonic cruise vehicle," a theoretical aircraft that will fly twice as fast as today's fastest jet-powered research aircraft.

The Air Force Materials Laboratory (AFML) at Wright-Patterson AFB, Ohio, has developed a paint which, when spread over aircraft parts or other material, then exposed to heat or light, changes color to signal the relative porosity of that part. The development of this photochromic dye results in the newest, cheapest, and easiest method of testing for flaws in aircraft parts without destroying them.

Air Force doctors at Wilford Hall USAF Medical Center, Lackland AFB, Tex., invented a new device that saved fifty infants from death by suffocation over a six-month clinical period. Designed from various standard hospital components, including a respirator, at a cost of only $1,000, the device gives physicians precise control over the pressure composition and volume of air, oxygen, and mists administered to help newborns breathe.

General Brown has said, "Research and development is, in fact, the long arm of the US power lever; relatively small amounts wisely applied today lead to the very large and substantive improvements of tomorrow. . . . We must, at all costs, continue to spend the necessary amounts for an aggressive and searching research and development program—as well as the larger amounts for the required weapon systems to which they contribute the superiority our nation absolutely requires in these difficult and dangerous times. This is the price of national security and survival, without which all the other very worthy goals we hear so much about today would be academic." ■



Maj. C. V. Eggerts, AF Weapons Laboratory, Kirtland AFB, N.M., checks dust separator that could have important antipollution applications.

An artist's sketch of the single-seat, F-15 air-superiority fighter to be built for USAF by McDonnell Douglas.

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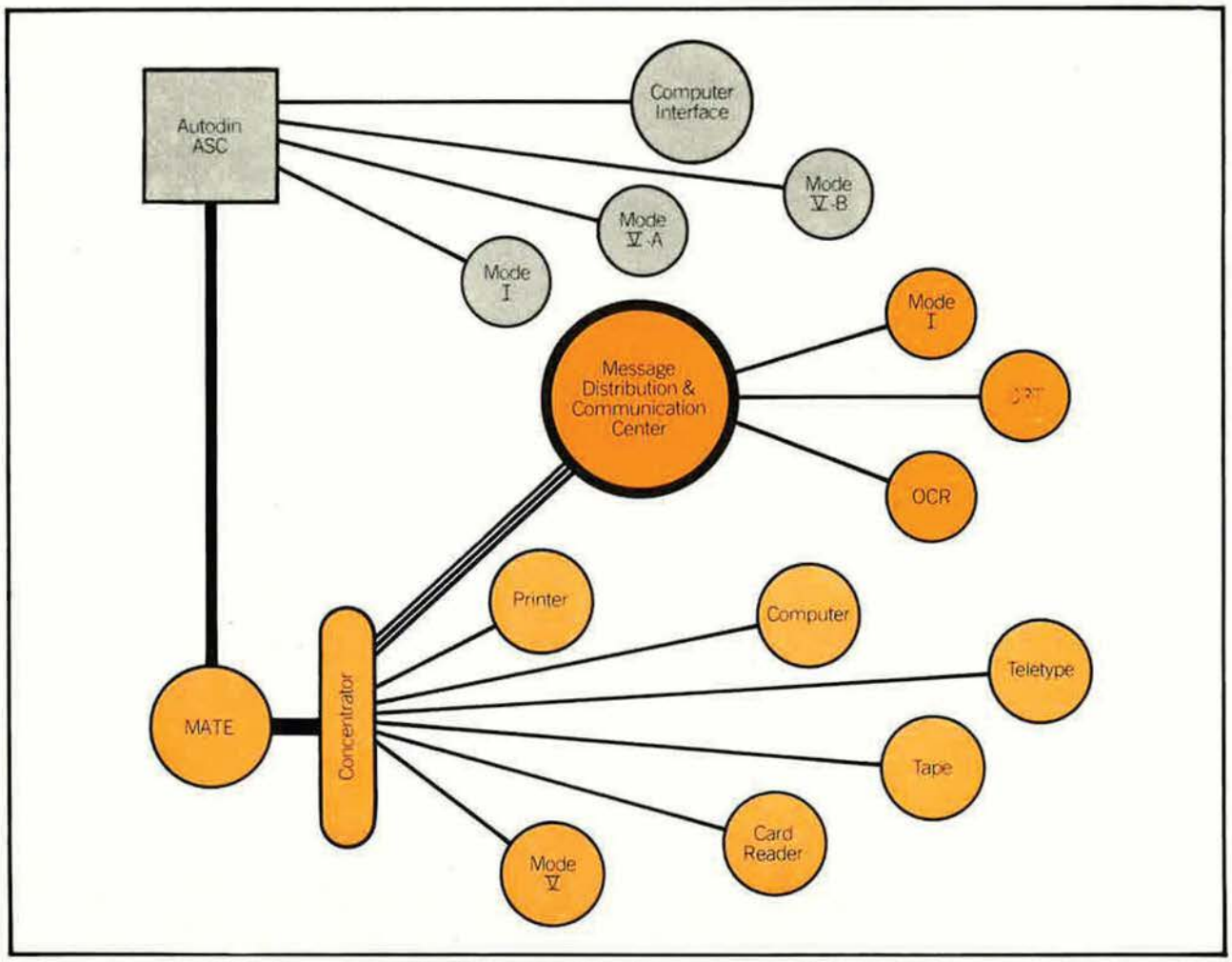

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A Major Air Command

Air Force Logistics Command

AFTER A year that brought both high honors and increased pressure from changing priorities, Air Force Logistics Command (AFLC) continues to meet the logistics challenges of an Air Force in transition by doing more with less.

AFLC Commander Gen. Jack G. Merrell recently set the tone when he said, "The primary purpose of the Air Force Logistics Command is to support the combat and operational forces of the Air Force."

Formal recognition was highlighted when the first two Air Force Organizational Excellence Awards, authorized by the Secretary of the Air Force, were awarded to AFLC units for their support of Southeast Asia operations

The Directorate of Maintenance at Oklahoma City Air Materiel Area received its award for accomplishing a major modification to the vertical stabilizers of the entire Air Force KC-135 fleet in the remarkable time of thirty-eight days.

The award to the Headquarters of the Sacramento Air Materiel Area recognized its development and management of specialized logistics teams in support of Southeast Asia. Known as Rapid Area Maintenance and Rapid Area Distribution Support teams, these civilian and military specialists provide logistics support in Southeast Asia in minimum reaction time when maintenance and distribution problems are beyond the capabilities of local forces.

The Air Force also looked to AFLC to set the pace in an area of increasing importance to the nation—ecology. No newcomer to the field, AFLC established two environmental health laboratories between 1954 and 1956 to work on pollution problems. The Environmental Health Laboratory at McClellan AFB, Calif., is primarily concerned with air pollution, while the laboratory at Kelly AFB, Tex., concentrates on water-pollution problems.

Another facility, the Radiological Health Laboratory at Wright-Patterson AFB, Ohio, protects the health of Air Force personnel who work near radioactive material by monitoring radiation exposure. The AFLC ecology effort also extends to a test program on electric vehicles for Air Force use. This increased emphasis on the protection of the environment will provide a cleaner and a safer work situation for Air Force bases and their surrounding communities.

Behind the highlights, AFLC fulfilled its basic mission—keeping Air Force weapon and support systems at a high level of readiness. This was done in consonance with the changing priorities of the Nixon Doctrine and the manpower reductions specified by the Department of Defense. Even with a reduced budget, the awesome scope of AFLC's mission required approximately one-fourth of all the money appropriated to the Air Force by Congress.

These funds included:

- $1.7 billion for procurement of aircraft and missile parts, munitions, vehicles, and equipment.
- $2.5 billion for repairing aircraft and

Gen. Jack G. Merrell became Commander of the Air Force Logistics Command in 1968. He graduated from the US Military Academy in 1939 and served in Europe during World War II as commander of the 389th Bomb Group, Eighth Air Force. After the war, he held command and staff positions in military airlift organizations, and served as a planner at Air Force Headquarters. In 1962, General Merrell was named Director of the Budget, Headquarters USAF. In 1964, he became Comptroller of the Air Force. Prior to his present assignment, he was Vice Commander in Chief, USAFE.

missiles, and distributing more than a million tons of supplies.

- $420.9 million for modification and modernization of Air Force weapons and equipment.

In addition to these appropriated funds, $2.9 billion in revolving funds were used to buy and sell aviation fuel and other supplies and services.

Because of its vital mission in support of the national defense structure, AFLC must maintain effective liaison with Hq. USAF, other Air Force commands, and the Reserve Forces. It also supports some sixty-one foreign countries with a wide range of multimillion-dollar projects under the International Logistics (IL) program. AFLC's IL support includes such aircraft as the F-5, F-4, and F-104, and contributes to the worldwide mutual defense of the United States and its allies.

The constant grind of decisions and actions that makes up Air Force logistics is directed by AFLC Headquarters at Wright-Patterson AFB, Ohio.

The actual work of logistics for the Air Force is performed at the Air Materiel Areas (AMAs) located at San Antonio, Tex.; Oklahoma City, Okla.; Sacramento, Calif.; Warner Robins, Ga.; and Ogden, Utah. The Air Materiel Areas are assigned logistics support responsibilities for specific weapon/support systems and commodities. Support for the new international fighter, the F-5E, for example, has been assigned to San Antonio Air Materiel Area, while the F-15 advanced fighter support will be managed by Warner Robins Air Materiel Area.

AFLC's organization reflects its view of the major functions of logistics: Materiel Management, Procurement, Maintenance, and Distribution.

Materiel Management

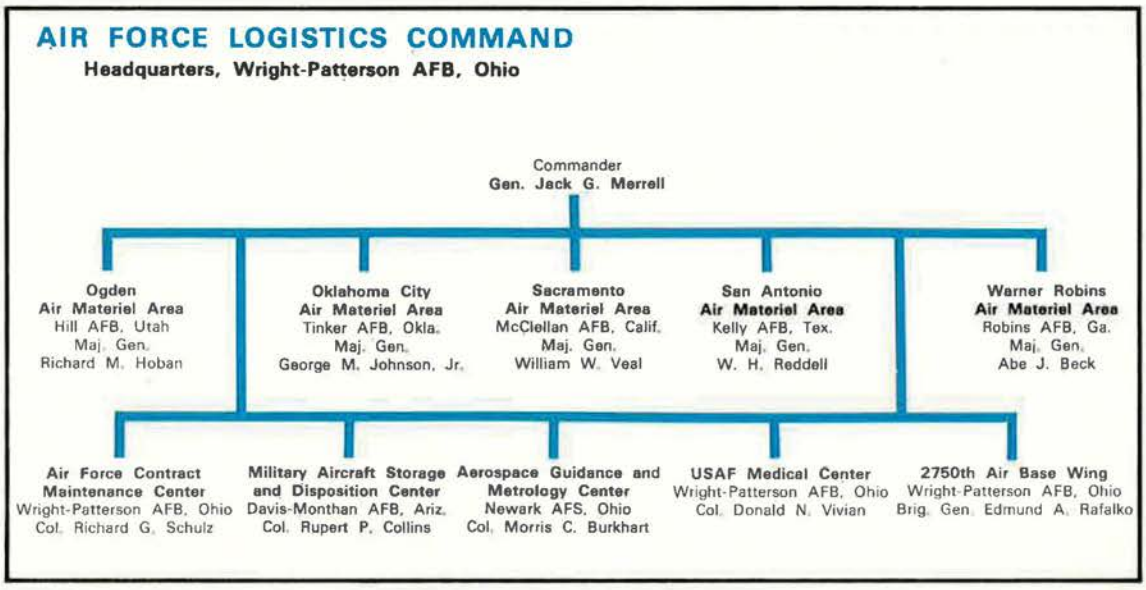
Known as the heart of the logistics process, Materiel Management is charged with supervising worldwide logistics support. This vast and complex responsibility involves determining the materiel buying program and the maintenance operating budget. It also encompasses surveillance of maintenance procedures, monitoring equipment and resources in operations, testing engineering techniques, and storing USAF engineering data.

An extremely important part of this support responsibility is technical engineering. When a system's support is assigned to AFLC, the command accepts the responsibility for the system's continued operation. AFLC technical engineers develop tests to provide early warning of developing problems in a system and determine if materiel deficiencies exist. The command then engineers corrective modification.

Procurement

Most of the AFLC procurement funds are appropriated for the purchase of spare parts for aircraft and engines, and services for maintenance, modification, and repairs beyond the capability of operational units. The rest of the procurement dollars go for such items as missile parts, modifications, radar equipment, munitions, aerospace ground equipment, chemicals and fuels, nuclear ordnance devices, and communications equipment. In FY '71, AFLC expects to procure supply and services at a cost of more than $2 billion.

An important part of procurement contract-



AFLC's San Antonio Air Materiel Area at Kelly AFB, Tex., is logistics support manager for the C-5 and its TF39 engine, here undergoing close scrutiny.

ing involves working closely with the Small Business Administration to ensure that a portion of AFLC contracts are awarded to small or minority-owned businesses, and to hard-core unemployment areas. AFLC exceeded its small business participation goal in FY '70 and expects to repeat this accomplishment in FY '71.

Maintenance

The best illustration of the "river of work" that flows through AFLC depots is found in depot maintenance statistics. AFLC depot maintenance is the largest single element of AFLC, encompassing 30,500,000 square feet of building and ramp area and 47,000 employees, some 1,200 of whom are military. Its annual budget is more than $780 million, with an additional $568 million for contract maintenance. During FY '70 the five Air Materiel Areas repaired, overhauled, and modified 1,620 aircraft and 3,900 aircraft engines.

Maintenance by contract is an integral part of the AFLC maintenance program, and Air Force policy sees maintenance contractors as extensions of AFLC resources. Contractors repaired 603,000 units in FY '70.

In meeting its maintenance responsibility, AFLC emphasizes management and modernization. In February 1971, the entire AFLC Maintenance activity reorganized. Functional divisions, such as Production Control, Industrial Engineering, and Quality Control were replaced by product divisions, such as Aircraft, Engines, Accessories, Electronics, and Industrial Laboratories. The new, product-oriented structure will improve management, increase productivity, and give more maintenance per dollar.

In the area of modernization, AFLC's five-year Depot Plant Modernization Program is a major Air Force objective. The program will update AFLC's World War I and II vintage industrial facilities and equipment, and is expected to improve AFLC's overall capability without increasing manpower requirements.

Distribution

Approximately 18,000 Distribution employees identify, package, store, and ship the 937,000 items for Air Force customers worldwide and 1,200,000 items for depot maintenance, assigned activities, and tenant organizations. This amounts to approximately 946,000 tons of materiel in storage.

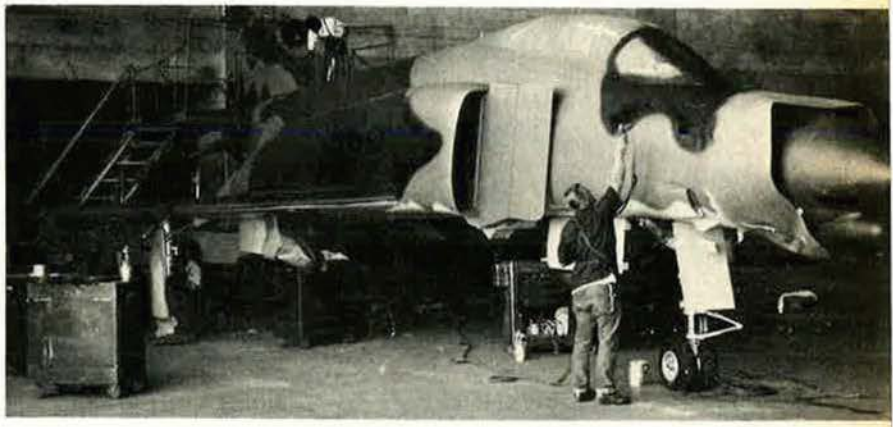
A major task is keeping inventory items, especially high-value ones, at minimum levels for the most economic and effective use of resources. Economy dictates the use of surface transportation to move routine and bulky cargo.

For the materiel that must be moved quickly, Distribution oversees the operation of the Logistics Airlift (LOGAIR) System, a contract airlift network that crisscrosses the continental US, and also arranges for movement on military or commercial cargo aircraft. During FY '70, LOGAIR moved more than 170,000 tons of materiel approximately 18,000,000 miles at a contract cost of about $31 million.

Distribution also tackles packaging problems for the Air Force and DoD through its Air Force Packaging Evaluation Agency at Wright-Patterson AFB. Through the "Fast Pack II" program, more than 1,000 types of containers have been eliminated, with an estimated annual savings to the Air Force of $4 million.

Specialized Activities

• The Aerospace Guidance and Metrology Center at Newark Air Force Station, Ohio, has three functions: Repair and modification



Personnel of the Ogden Air Materiel Area, Hill AFB, Utah, camouflage an F-4 Phantom as the final touch in the aircraft's overhaul and modification.

AFLC, the Air Force's largest user of automatic data-processing equipment, is making a quantum jump in logistics support, with the Advanced Logistics System.

of inertial-guidance systems for Air Force and DoD aircraft and missiles; engineering support to AFLC and other DoD agencies for inertial-guidance systems and associated equipment; and management of the Air Force calibration program, which includes checking all Air Force measurement devices.

- The Military Aircraft Storage and Disposition Center (MASDC) at Davis-Monthan AFB, Ariz., manages all excess aircraft and missiles in the DoD. It processes and maintains aircraft in storage, reclaims aircraft and components for inventory replenishment, processes aircraft for disposal, and provides some aircraft and aircraft parts for foreign military sales. Approximately 3,500 aircraft and 188 missiles valued at more than $5.1 billion are stored at MASDC.
- The Air Force Contract Maintenance Center (AFCMC) at Wright-Patterson AFB, Ohio, through its sixteen detachments, administers approximately $1 billion in active contracts with industry. These contracts cover such areas as modification and overhaul of fighter and cargo aircraft, maintenance on special-mission aircraft, and modification and overhaul of aircraft engines and components. Overseas, AFCMC administers contract IRAN (Inspection and Repair As Necessary) programs on aircraft, and repair programs on crash- and battle-damaged aircraft.

Meeting the Future

Through such programs as Integrated Logistics Support (ILS) and the Advanced Logistics System (ALS), the command is taking steps to meet the future logistics needs of the Air Force.

Under ILS, AFLC recognizes that weapon system costs go beyond the acquisition price; maintenance costs continue until the last unit is retired. ILS also recognizes that a weapon system may not be practical if it will be too difficult or costly to support.

To meet this challenge, AFLC begins to work with the System Project Office of the Air Force Systems Command when a weapon is just a gleam in the designer's eye. This "design for support" arrangement enables logistics and life-cycle cost aspects to be fully considered in the many important trade-off decisions made during the concept, design, and development stages of a new system. The overall objective of the ILS is a balance of a system's performance, its support, and its costs.

Through the advanced analytical techniques made possible by the Advanced Logistics System, AFLC expects more efficient use of resources and more responsive support of the Air Force and the national defense.

Third-generation computers used in the ALS will perform a series of different functions simultaneously and almost instantaneously. The ALS will initially replace approximately 107 of AFLC's present 420 separate data systems. Additional data systems will be replaced in follow-on increments. A total of eighty-nine existing second-generation computers will be replaced by six advanced or third-generation computers at AFLC Headquarters, and the Air Materiel Areas. Present schedules call for ALS to be in operation by 1975.

This year, in reengineering the current logistics systems to meet the future, the ALS reached a milestone with the completion of the detailed system specification. Approximately 1,300 people were involved in this very complex task.

The system will permit improved management, greater economy, and better use of resources through easier access to logistics information. Most important, ALS will enable AFLC to do an even better job of giving responsive support to Air Force units at the lowest possible cost. As in the past, AFLC's goal can be expressed in one phrase: to do more with less. ■

Reentry systems are prepared for tests. San Antonio Air Materiel Area's Directorate of Special Weapons manages logistics for USAF's nuclear weapons.

A Major Air Command

The Tactical Air Command

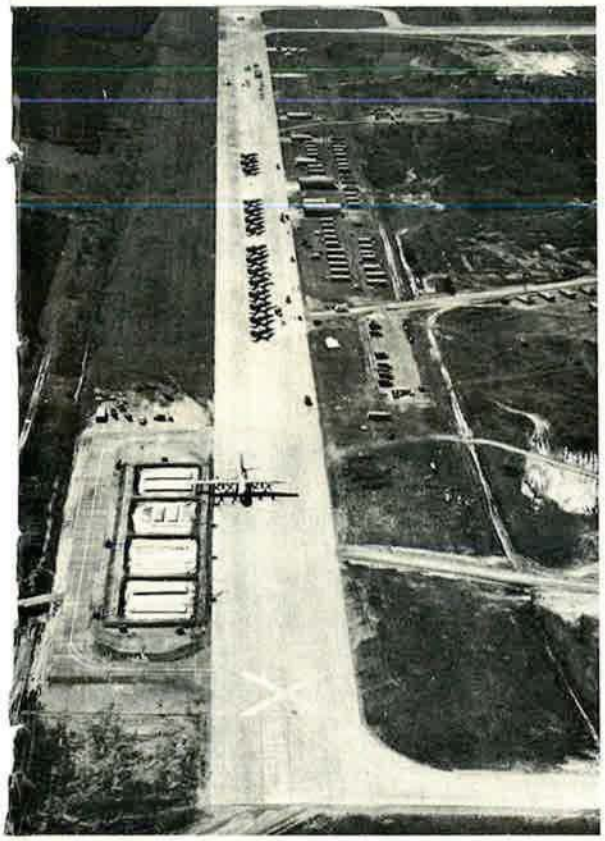
TACTICAL Air Command's growth over the past twenty-five years "has been a reflection of the increasing significance of tactical airpower," Gen. William W. Momyer, TAC Commander, said in a recent statement noting the command's silver anniversary in March of this year.

"We have no way of knowing what lies ahead," he continued, "but we do know that if peace prevails, TAC will have achieved its primary goal; if not, TAC's response will be immediate and professional."

In testimony to its multiple-response capability, TAC logged more than 850,000 flying hours last year in meeting a variety of operational, training, and support requirements. Command airlift, for example, accounted for nearly 150,000 hours while ranging the globe and delivering more than 273,000 personnel and 130,000 tons of cargo in worldwide operations.

As the nation's number-one source of combat-ready tactical airpower, TAC has shouldered most of the burden of supplying aircrews and maintenance personnel for Southeast Asia (SEA). With the phased withdrawal of US ground forces from Vietnam, TAC has placed a continuing priority on this mission.

TAC's aircrew training for Fiscal Year '71 is expected to produce 7,200 combat-ready fighter, reconnaissance, airlift, and special operations crew members. This will put the command crew training total at more than 47,000 since the mid-1960s. SEA maintenance training for a similar period is projected at nearly



TAC's 336th Tactical Fighter Squadron, from Seymour Johnson AFB, N.C.—TAC's first "bare-base" unit—quickly converted austere North Field, S.C.

In 1968, Gen. William W. Momyer was named Commander of Tactical Air Command after serving for two years in Vietnam as Deputy Commander for Air Operations, Military Assistance Command, and as Commander of the Seventh AF. He entered the service in 1938, becoming a fighter ace in World War II. Following duty on the Air War College faculty, he commanded a fighter group in the Korean War, and later all USAF units in Korea. He has held key positions in the Air Staff and at TAC Headquarters, and served as Commander of the Air Training Command before his assignment in Southeast Asia.

After five years of combat operations in Southeast Asia, the 355th Tactical Fighter Wing came back home to McConnell AFB, Kan., and this was the welcome one TAC man got from his wife and youngster on the glad day he returned to the States.

Current programs call for Harvest Bare squadrons at George AFB, Calif.; Myrtle Beach AFB, S.C.; and MacDill AFB, Fla.

Many TAC airmen will remember 1970 as the year that their F-100 and F-105 units returned from extended duty in Southeast Asia (SEA). The 355th Tactical Fighter Wing (TFW) returned from Takhli Royal Thai Air Base, Thailand, to McConnell AFB, Kan., where the unit was absorbed by the host 23d TFW until disposition to the Air National Guard.

The "bridge busting" 355th accumulated more than 101,000 sorties, and delivered nearly 203,000 tons of ordnance against 12,675 targets, while logging 264,000 flying hours in SEA. The wing's "Thuds" also downed nineteen MIGs, destroyed eight on the ground, and damaged nine others. During four years in SEA, the 355th TFW earned three Presidential Unit Citations and two Air Force Outstanding Unit awards.

The 31st TFW, after more than five years in

50,000 people, with the FY '71 input to account for about 6,500 of that figure.

One of the command's most notable accomplishments last year was equipping a squadron of jet fighters with a prepackaged, air-transportable air base. The project was a follow-up to Coronet Bare in October 1969, TAC's first demonstration of new mobility equipment designed for quick-reaction global operations independent of established air bases.

The 336th Tactical Fighter Squadron, TAC's first "bare-base" unit, deployed from its home at Seymour Johnson AFB, N.C., to North Field, S.C., early in November of last year. The austere site provided only the minimum requirements of a runway, taxiway, parking areas, and a source of fresh water.

TAC C-130s and Military Airlift Command C-141s combined for 278 sorties to deliver the initial Heavy Bare task force and 4,200 tons of equipment and facilities. Nearly 400 expandable structures were set up as housing and work areas for more than 1,600 men who comprise the special unit. During the week's simulated combat sorties, TAC C-130s supplied the squadron's twenty-four F-4E Phantom jets with 375,000 gallons of POL.

Before developing its bare-base capability, now known as Harvest Bare, TAC mobility was limited to those sites possessing operational air bases. Now, the 336th TFS can deploy to any of more than 1,400 worldwide locations, carrying with it everything required to be combat-ready within hours of arrival. And the squadron does not leave behind expensive facilities and equipment when it returns. When the job is done, the 336th repacks the "instant air base" and brings it home for further use.

TAC responded to disaster needs of earthquake-stricken Peru in 1970. This rugged C-130 had no trouble landing on this dirt strip carved from a mountainside.

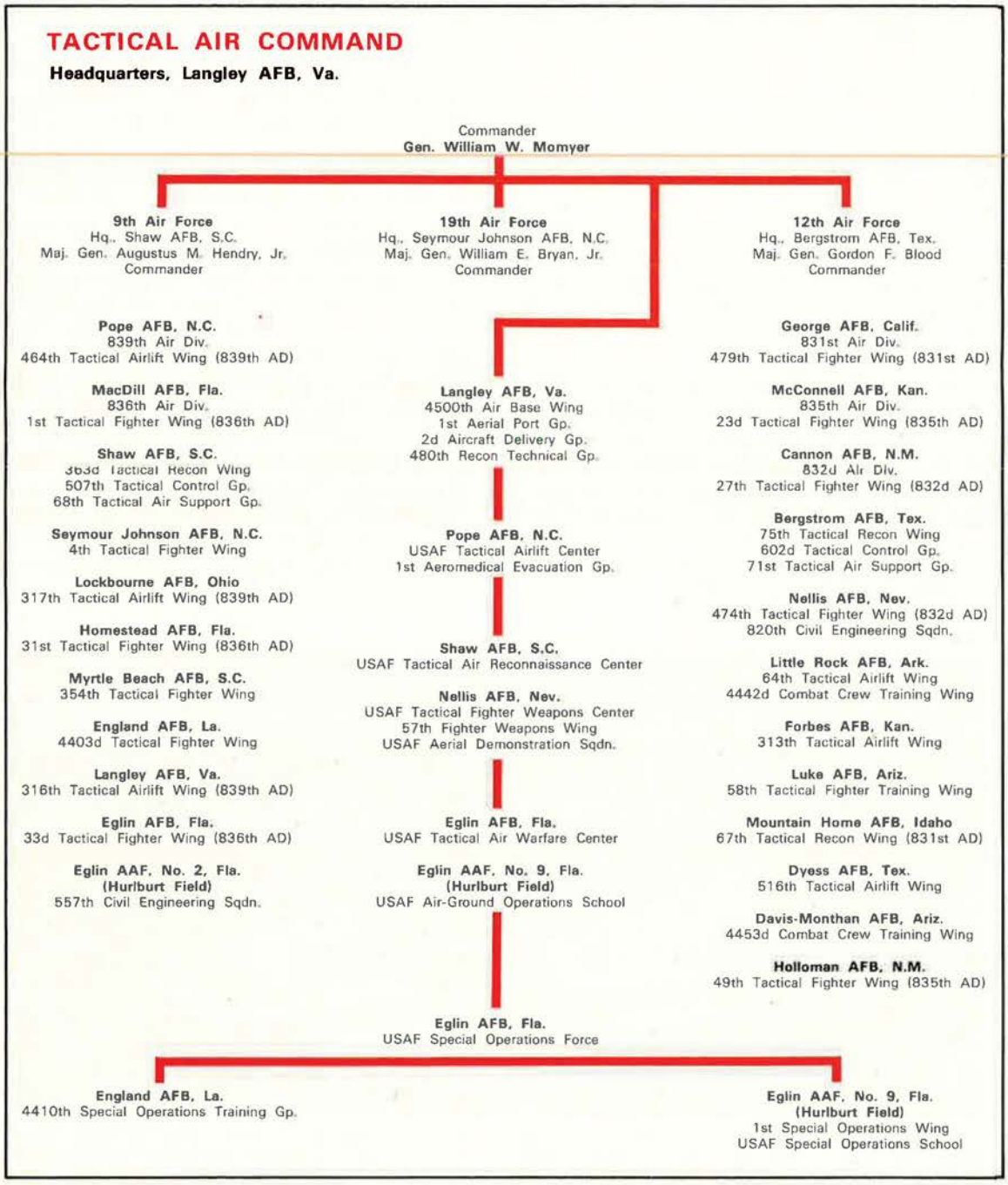
A scene of desolation in Peru. Some 50,000 were killed in the quake. TAC delivered tons of food and medical supplies to the stricken country.

SEA, returned to Homestead AFB, Fla., and was equipped with F-4 Phantom jets. Three squadrons of F-100 Supersabres that had been assigned to the unit in SEA were transferred to the new 4403d TFW at England AFB, La. The 31st played key air-support roles during the Tet offensive and at Khe Sanh in 1968, as well as at Dak To and Duc Lap.

Throughout the year, TAC continued its support of worldwide "mercy missions," using the veteran C-130 Hercules to supply most of the relief muscle. TAC airlifters from Lockbourne AFB, Ohio, on rotation to the Canal Zone, last year responded immediately when Peru was hit by the most devastating earthquake in its history.

The May 31 disaster left more than 50,000 dead and thousands more homeless. Much of the mountainous country was cut off from the rest of the world except by air. Destruction was so complete that even the mighty Hercules aircraft were unable to land in some areas and had to make their deliveries by airdrop.

The bulk of the early relief efforts centered around an unimproved airstrip at the village of Anta in the Huaylas Valley. Two combat controllers from Lockbourne's 1st Aerial Port Squadron deployed to the area with their field gear and set up an initial drop zone. These men, the first North Americans ever seen by the natives, overcame a tremendous language barrier and directed the villagers in improving the local airfield so the "Herkies" could land supplies and evacuate casualties.



TAC's newest fighter, the A-7D Corsair II, can deliver ordnance almost equal to its own empty weight. This one is carrying twenty-four 550-pound bombs.

The six C-130 crews ended their month-long relief effort after flying 167 mercy missions, which delivered more than 658 tons of food and medical supplies. They also airlifted some 1,600 passengers to and from the stricken areas. As a token of Peru's appreciation, the Lockbourne crews received a plaque bearing the shield of the Peruvian Air Force, an honor bestowed only once before upon a foreign military organization.

Shortly before Thanksgiving last year, TAC C-130s from four units painted over their military markings to fly humanitarian missions into war-torn Jordan under the insignia of the International Red Cross. They delivered more than 2,000 tons of supplies and equipment, and transported more than 1,700 people in the relief effort. The overall airlift required 485 sorties and left behind some $450,000 worth of medical equipment donated by the Agency for International Development.

When a record-setting blizzard hit south-central Kansas with snowdrifts ten to twelve feet high last winter, TAC C-130s from Forbes AFB, Kan., responded with Operation Haylift. Air Force Reservists from Ellington AFB, Tex., and Clinton County AFB, Ohio, joined the Forbes airlifters in delivering more than 13,000 bales of hay to approximately 80,000 stranded cattle. A spokesman for the Kansas Humane Society commented that airlift was the only way the livestock could have been reached, and credited the 80,000 pounds of hay with saving innumerable cattle from starvation.

Last year, TAC both improved and demonstrated command response in a number of ways in addition to humanitarian airlift. In September, TAC became the first major air command to complete conversion to the Air Force's Phase II computer, the first such system to be authorized servicewide. The computer, a Burroughs 3500, is a "real-time" system with a storage capacity up to 500,000,000 characters, and the ability to handle ten tasks concurrently.

Also in September, four TAC squadrons of NATO-committed F-4 Phantoms deployed from their Stateside locations to their respective German bases. They simulated combat sorties in Crested Cap II, an annual month-long exercise in which "dual-based" fighters support US-NATO agreements without incurring the expense of maintaining large numbers of personnel overseas on a year-round basis.

The Crested Cap squadrons were part of a record number of 359 aircraft TAC deployed to and from European and Pacific bases during a forty-day period in September–October. The moves included operations named Coronet Swift, Peace Reef, Coronet Condor, and

After building up an impressive record in Vietnam as the backbone of tactical airpower, TAC's F-105 Thunderchiefs—the "Thuds"—are gradually being brought home and phased into the Air National Guard as part of the current modernization program for USAF's Air Reserve Forces.

Husky sled dogs provided a ride on runners across the snow-covered flight line at Eielson AFB, Alaska, when crewmen of TAC's 23d Tactical Fighter Wing arrived in their Thunderchiefs for a winter exercise. They were getting what the Alaskan Air Command calls the "great-land" greeting.

Coronet Badger. TAC brought back two F-4 squadrons from Korea, delivered a squadron of F-4Es to Australia, ferried B-57G Canberra aircraft to SEA, and returned ninety-six F-100s to the States. These nearly concurrent deployments were in addition to some 2,500 worldwide aircraft deliveries made by the 2d Aircraft Delivery Group last year.

TAC added another "first" to its credits in December. A-7D Corsair aircraft began arriving at Myrtle Beach AFB, S.C., to equip the first operational A-7 squadron in the Air Force. The A-7D Corsair II is a one-seat, single-engine, subsonic aircraft designed for close air support of ground forces. That same month, TAC completed delivery of twenty-four F-111 aircraft to Upper Heyford, England, equipping the first NATO squadron with the variable-sweep-wing strike aircraft.

Modernization of TAC's Air National Guard and Air Force Reserve forces received continued emphasis throughout the year. Realignments included increasing numbers of C-130s and F-100s going to the Air Reserve Forces, as well as several unit conversions to the U-3, O-2, A-37, and F-105 aircraft. The RF-101 Voodoo, longtime workhorse of tactical reconnaissance, was phased out of the TAC inventory into the Guard. Announcements during the year indicate ANG units will also receive RF-4C reconnaissance aircraft.

While supplying replacements for US Air Forces Europe and Pacific Air Forces, TAC also furnished most of the Air Force training for foreign students. The international classes included groups from Australia, Germany, Israel, Spain, and the Republic of Vietnam. Aircraft involved were the F-4 Phantom, the RF-4, the C-123, and special operations aircraft such as TAC's various gunships.

Additional command highlights for the past twelve months were:

• The A-37B established another nonstop deployment capability for TAC by refueling in flight during an operational ferrying mission.

• The Cheney Award for valor went to Sgt. Isidro Arroyo, Jr., of the 522d Tactical Fighter Squadron, Cannon AFB, N.M.

• The 49th TFW at Holloman AFB, N.M., received the Mackay Trophy for "the most meritorious flight of 1969," a redeployment of seventy-two F-4s from Spangdahlem AB, Germany, to Holloman.

• Forbes AFB, Kan., was named the US winner of the Air Force Redistribution and Marketing Effectiveness Award for 1969.

• The 4531st Supply Squadron, Homestead, AFB, Fla., received the Air Force Zero Defects Award for 1969.

• The National Safety Council presented TAC, for the third consecutive year, an Award of Honor for ground-safety performance.

• TAC's Resources Conservation (RECON) Program for FY '70 achieved an unprecedented savings of $37 million, surpassing all other major commands on a percentage basis, in meeting monetary goals assigned by the Air Force.

• Holloman AFB, N.M., was transferred from Air Force Systems Command to TAC. The 49th TFW became the host organization for the base.

• An intracommand transfer moved England AFB, La., from the USAF Special Operations Force, and placed it under the jurisdiction of TAC's Ninth Air Force. The 4410th Combat Crew Training Wing became the 4410th Special Operations Training Group. The newly organized 4403d TFW took on the host mission and was equipped with F-100s that had returned from SEA.

• The first major-sized electric vehicles to be tested by the Air Force were delivered to Langley AFB, Va. They were an eleven-passenger bus and a panel van with a 2,200-pound capacity. ■

A Major Air Command

The Air University

SIX MONTHS after the close of World War II, the Army Air Forces introduced a new concept in professional military education: the establishment of a single organization, charged with the responsibility for all Air Force professional military education. That organization, Air University, celebrates its twenty-fifth anniversary this year.

The late Gen. Muir S. Fairchild, a pioneer in military education, served as Air University's first Commander. His thinking and planning formed the framework . . . the guiding policies . . . of today's dynamic and forward-looking educational organization.

In August of 1970, Lt. Gen. Alvan C. Gillem II became Air University's twelfth Commander.

Air University's main campus and headquarters are located at historic Maxwell Air Force Base, near Montgomery, Ala. Here students and faculty, free of other operational duties, can devote their efforts primarily to academic pursuits.

Lt. Gen. Alvan C. Gillem II came to his present assignment in August 1970 from command of SAC's Eighth Air Force. General Gillem graduated from the US Military Academy in 1940 and commanded a fighter squadron in Europe during World War II. After the war, he led fighter wings in TAC, and was a bomb wing and division commander in SAC. He has been Deputy Commandant and Commandant of the Air Command and Staff College, and from 1966 to 1968 was Deputy Chief of Staff, Operations, at Hq. SAC. He is a graduate of the Air War College, and was a member of the cadre that established SAC.

Located on the Academic Circle at Maxwell are the three professional military education (PME) schools—the Air War College, Air Command and Staff College, and Squadron Officer School. These schools prepare officers for the progressively more responsible positions normally associated with duties of staff officers and commanders. More than 70,000 officers have graduated from these institutions during the past quarter century.

In the center of the Academic Circle is the Fairchild Library, providing exceptional research facilities for faculty and students.

In addition to the three PME schools, the Air University Institute for Professional Development is also situated on the Academic Circle. It provides instruction through short courses in various specialties such as judge advocate, staff officer, military comptroller, personnel management, and electronic warfare.

Elsewhere on Maxwell is Project Corona Harvest, an evaluation of the effectiveness of airpower in Southeast Asia since 1954. Although the project's steering committee is headed by the USAF Vice Chief of Staff, the AU Commander is responsible for the overall conduct of the study. Corona Harvest is but one of the agencies composing the Aerospace Studies Institute (ASI). Its Arctic, Desert, and Tropic Information Center recently produced a manual and movie on survival in the inland waterways of Southeast Asia. Another Division publishes the scholarly *Air University Review*, the official journal of the Air Force. ASI also includes the Historical Research Division, the USAF Archives, the Concepts Division, the Documentary Research Division, and the Communications-Electronics Doctrinal Project Office.

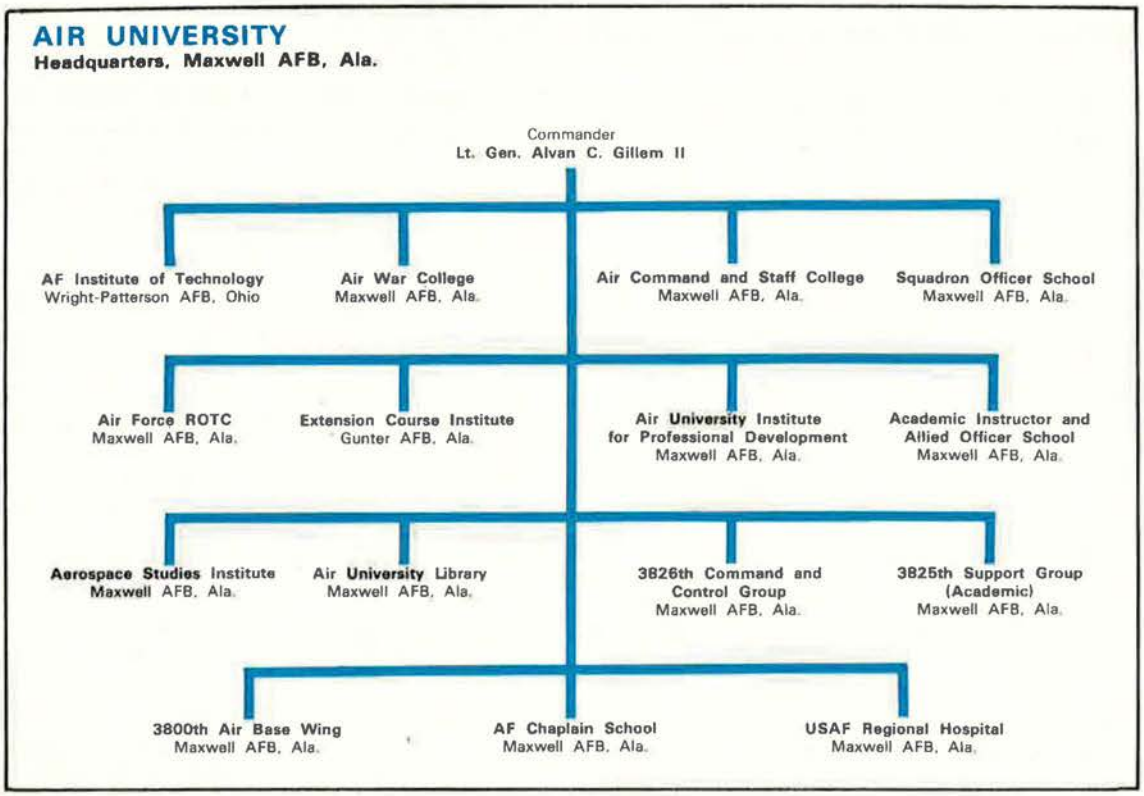
Due to current and projected budgetary and manpower constraints, the Aerospace Studies Institute will be inactivated by the end of June

1971 and the functions discontinued, transferred, or regrouped. As a result of this decision, the USAF Communication-Electronics Doctrinal Project office will be transferred to Air Training Command (ATC) and moved to the Keesler Technical Training Center, Miss. The Arctic, Desert, Tropic Information Center will be assigned to the 3636th Combat Crew Training Wing (ATC), Fairchild Air Force Base, Wash., but will remain at Maxwell AFB as an Operating Location. The Project Corona Harvest function will remain at Air University and report directly to the Commander. Disposition of other functions is currently being developed.

Maxwell houses the headquarters of Air University's Air Force ROTC, a dual-education system that offers aerospace education in high schools and an Air Force-commissioning program at colleges and universities throughout the country. Air Force scholarships are available for qualified cadets in the collegiate portions of the program.

The Command's Academic Instructor and Allied Officer School is also located at Maxwell. Its Academic Instructor Course prepares officers and airmen for instructor positions throughout the Air Force, while its Allied Officer Familiarization Course prepares allied officers to attend Squadron Officer School and Air Command and Staff College. Distinguished foreign graduates include allied air force commanders, military school commandants, ambassadors, attachés, and South Vietnamese Vice

Left, Gen. Muir S. Fairchild, first AU Commander. Right, Academic Circle with (clockwise from top) ACSC offices; Air War College and Aerospace Studies Institute; Air Command and Staff College; Squadron Officer School; Warfare Systems School; 3826th C and C Group.



More than a million books, maps, and documents are available to students at the Air University.

Airman applies what he learned about aircraft maintenance through AU correspondence course.

President Nguyen Cao Ky. Vice President and Mrs. Ky included a stop at Maxwell AFB on their recent visit to this country.

The latest addition to Air University's schools is the Air Force Chaplain School, which has provided instruction to more than one-fourth of the clergy in the Air Force. The Chaplain School conducts courses for both new and experienced chaplains.

Air University also directs the operation of one of the world's largest correspondence programs through its Extension Course Institute (ECI), located at nearby Gunter Air Force Base. ECI administers the Weighted Airman Promotion System (WAPS) and has, to date, shipped nearly 200 tons of WAPS material to Air Force units throughout the world. Recent ceremonies honoring the three millionth ECI graduate were held at Maxwell.

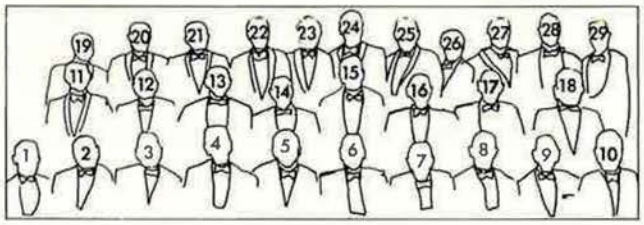
Air University's Air Force Institute of Technology, located on the command's "North Campus" at Wright-Patterson Air Force Base, Dayton, Ohio, provides education and training in scientific, technological, managerial, logistical, medical, and other specialized fields. Resident courses are conducted at the Wright-Patterson campus as well as "on site" extension courses at US and allied installations throughout the world. It also supervises education programs for Air Force people at civilian colleges and universities, industrial plants, medical centers, and at six Minuteman ICBM missile sites.

Shortly after Air University's establishment, Gen. Carl A. Spaatz, then Commanding General of the Army Air Forces, asked a group of leading civilian educators to review AU's educational plans and programs. A similar board now visits Air University annually, submitting its findings to the Air Force Chief of Staff. Through this cooperation by distinguished civilian educators and executives, Air University seeks to stay abreast of rapidly changing educational methodology and techniques. Beginning a three-year appointment to the board this year is the Hon. Winton M. Blount, the Postmaster General.

Air University serves Air Force personnel—officers, airmen, and civilians—and allied friends to assure that this nation maintains its leadership during a continuing crucial period of history. Together with the operational commands, Air University contributes to the defense of the free world by preparing its alumni to better serve the USAF and the nation. ■

The latest communications technology is used for instructional purposes at the Air University. These faculty members are reviewing script with the studio director before delivering their lectures over AU's closed-circuit television system.

Many former AU commanders and commanders of schools at Maxwell AFB gathered for the Air University Twenty-fifth Anniversary Dining-in this spring. From left, front row, Lt. Gen. Ralph P. Swofford, Jr. (1); Lt. Gen. Earl W. Barnes (2); Lt. Gen. David M. Schlatter (3); Gen. Laurence S. Kuter (4); the Hon. Richard J. Borda, Ass't Sec'y of the AF (Manpower and Reserve Affairs) (5); Lt. Gen. Alvan C. Gillem II, present AU Commander (6); Gen. George C. Kenney (7); Gen. Dean C. Strother (8); Lt. Gen. Walter E. Todd (9); and Lt. Gen. Troup Miller, Jr. (10). Second row: Maj. Gen. Matthew K. Diechelmann (11); Maj. Gen. Delmar T. Spivey (12); Maj. Gen. Lester F. Miller (13); Maj. Gen. Jerry D. Page (14); Lt. Gen. Robert A. Breitweiser (15); Maj. Gen. Jack N. Donohew (16); Maj. Gen. John H. Buckner (17); and Maj. Gen. Lloyd P. Hopwood (18). Back row: Col. Oswald W. Lunde (19); Brig. Gen. George C. Loving, Jr. (20); Col. Harold P. Sparks (21); Col. Paul T. Hanley (22); Maj. Gen. Robert Taylor III (23); Maj. Gen. Harry J. Sands, Jr. (24); Brig. Gen. Robert J. Goewey (25); Brig. Gen. William C. Fullilove (26); Brig. Gen. Roger E. Phelan (27); Col. Benoid E. Glawe (28); and Brig. Gen. Jonas L. Blank (29).



A Major Air Command

Air Training Command

"PREPARE the Man" has been for years the legendary motto of Air Training Command (ATC). But the legend is being reshaped by the changing face of the 1970s, and the motto is taking on new meaning throughout the command.

Spearheading the spirit of change within ATC is Lt. Gen. George B. Simler. Shortly after assuming command in September 1970, he inaugurated a program designed to make an Air Force career more attractive to young people. It focuses on perpetuating the Air Force's traditional objective of maintaining a properly trained force that is youthful and aggressive enough to carry out the mission and tasks assigned.

In pursuit of the command's "Accent on Youth," a "Project Volunteer Workshop" was convened, comprised of young airmen and junior officers from throughout ATC who brainstormed current attitudes toward Air Force service.

Many of the recommendations springing from the week-long workshop sessions were either implemented immediately by the Commander, or forwarded to USAF Headquarters for further consideration.

Some things never change. Above, a training instructor at USAF Basic Military Training Center, Lackland AFB, Tex., inspects his charges.

In its efforts to emphasize the values of Air Force training and education to young people individually, and to point out the sociological value for the nation collectively, Air Training Command has put renewed priorities on academic and occupational recognition of ATC courses. Studies reveal that more than 500 courses meet the criteria for credit recommendations of the American Council on Education's Accreditation of Service Experience. In addition to those courses eligible for college credit, there are a score of professional and trade organizations that recognize or certify ATC courses.

A dramatic example is the medical school

Prior to his present assignment, Lt. Gen. George B. Simler was Vice Commander in Chief, USAFE. Prior to that, he served as Director of Operations at Headquarters USAF and at Seventh AF in Vietnam. During World War II, General Simler flew two combat tours in Europe. After the war, he was the first Professor of Air Science at the University of Maryland, where he also earned a degree in Military Science. He is a graduate of the National War College, a former Director of Athletics at the Air Force Academy, and has held a variety of command and staff assignments here and overseas.

Looking almost like an astronaut, a student pilot practices emergency flight procedures in a T-38 simulator. Pilot training is one of the principal missions of the Air Training Command, along with a range of other missions, including the operation of Air Force technical training schools.

at Sheppard AFB, Tex. The new Physician's Assistant Training Program there is recognized by the American Medical Association and Midwestern University. Graduates can be licensed in several states, and will make a real contribution to the national need for medical services.

During a time when the military budget is under widespread criticism, Air Training Command has been conducting its training in hundreds of specialties that are valued not only in the Air Force, but also in the civilian job market.

ATC technical training programs cost approximately $415 million in FY 1970. Since less than twenty percent of first-term airmen remain in service, more than $300 million of that tax-dollar training investment is returned each year to the civilian economy in the form of disciplined, skilled personnel.

The retention issue is of deep concern to the command. Although ATC surpasses the Air Force average, current efforts to enhance career interest and improve the total service environment are aimed at raising retention to significantly higher levels in the future.

Closely akin to retention is another major responsibility of Air Training Command—the recruitment of high-caliber airmen and officer candidates. Complex sociological factors in today's recruiting climate complicate military procurement.

Headquarters Recruiting Service is planning organizational realignments at all levels, and its recruiting programs are being redesigned and modified to reach and motivate an increasingly sophisticated audience.

ATC's concern for people extends beyond the training and recruitment areas, to the destinies of all service members imprisoned or missing in action in Southeast Asia.

AIR TRAINING COMMAND

Headquarters, Randolph AFB, Tex.

Commander
Lt. Gen. George B. Simler

Technical Training Centers	Military Training	Undergraduate Pilot Training	*Flying Training Wings	Navigator Training	Separate Operating Agencies
Chanute AFB, Ill. Keesler AFB, Miss. Lowry AFB, Colo. Sheppard AFB, Tex.	Lackland AFB, Tex.	Craig AFB, Ala. Moody AFB, Ga. Webb AFB, Tex. Laredo AFB, Tex. Williams AFB, Ariz. Reese AFB, Tex. Vance AFB, Okla. Laughlin AFB, Tex. Columbus AFB, Miss.	Randolph AFB, Tex. Sheppard AFB, Tex.	Mather AFB, Calif.	Goodfellow AFB, Tex. (Hospital) Fairchild AFB, Wash. (Survival Training Hq.) Hq., Recruiting Service (Randolph AFB, Tex.) Peterson Field, Colo. (Academy 1st Classman Pilot Indoctrination)

* Randolph conducts T-37 and T-38 instructor Pilot Training (PIT). Sheppard conducts German Air Force Pilot Training.

Air Training Command teaches everything from dental technician work to office procedures. But in a world increasingly geared to space-age technology, electronics is one of the most important courses of all. These young airmen are learning—in a "hands-on" manner—the intricacies of a piece of electronic equipment.

General Simler proclaimed the week of November 8–14, 1970, as "POW/MIA Week in ATC," spurring vigorous base-community activities in support of the POW/MIA campaign, at sixteen bases located in eleven states. Following "missing-man" flyovers of ATC aircraft at the Texas-Texas A&M and the Oklahoma State-Kansas State football games, arrangements were made for half-time ceremonies at one bowl game and flyovers at four nationally televised holiday bowl games. The POW/MIA campaign will remain a continuing high-priority command involvement for as long as the issue is unresolved.

ATC has trained nearly 9,000,000 men and women since it became a major air command in 1947. The command will observe its twenty-eighth anniversary as the school system for the nation's Air Force on July 7, 1971.

The command's population during recent years has averaged 140,000. Its assets exceed $2.5 billion.

With headquarters at Randolph AFB, Tex., ATC has four broad missions—personnel recruiting, military training, technical training, and flying training, which includes survival training.

ATC offers nearly 4,000 courses at sixteen command bases, and through its more than 100 field training detachments throughout the free world. In addition, ATC training squadrons function on the bases of other commands.

During the current fiscal year, the command will graduate more than 600,000 students from courses of its military, technical, and flying training systems.

Of that number, more than 110,000 airmen and officers will enter basic military training. About 475,000 students will enter technical training courses, and approximately 21,000 will enter the various flying training courses.

In terms of technical facilities, ATC has a military training center and four technical training centers. The Medical Service School continues its program at one of the centers.

Northrop T-38 Talons have been used since March 1961 to train undergraduate pilots in the operation of supersonic aircraft as part of ATC's UPT program.

In its flying training mission, ATC has eleven undergraduate pilot training (UPT) wings, a navigator training wing, and a survival training school with responsibilities for tropical, jungle, water, and Arctic survival training. The command also manages five specialized pilot training squadrons.

ATC's spirit of innovation spurred the command to introduce dramatic new concepts in the UPT and navigator training program.

The number of flying hours required for UPT completion has been reduced from 240 to 208.5, and the program from fifty-three weeks to forty-eight weeks in duration. Now fully implemented, this revision will result in a saving of about $7 million the first year, with subsequent annual savings estimated at $19 million.

A significant departure from past techniques

It looks like fun but it's also a lot of work. Student pilots learn the use of the parachute by being rope-towed aloft by a truck and then floating back to earth.

The idea here is to get lean and into shape. An important phase of the physical-fitness program at Officer Training School, Lackland AFB, Tex., is running.

in the undergraduate pilot training was the opening, in February 1971, of a pilot training learning center (information-retrieval system) at Williams AFB, Ariz.

Developed by the flying training division of the Air Force Human Resources Laboratory at Williams, the system provides multimedia training support for instruction in the Cessna T-37 and Northrop T-38 phases of the UPT program.

Under the new system, a student is able to use his nonflying time more effectively by seeing and hearing the procedures outlined in his manuals.

The learning center features individual learning carrels. Some of the carrels provide audio presentations on cockpit procedures, others are equipped with sound-slide capabilities, and the rest are video-tape carrels. All of the sound-slide presentations will be in color as well as half of the video-tape programs. The audio presentations and the video-tape programs have a touchtone dial access so that a student may simply dial any program he wishes to review.

Programs include such topics as formation procedures, traffic patterns, air traffic control separation procedures, and instrument instruction.

These experimental programs are but part of the story. A special mission analysis group has been established at ATC Headquarters to evaluate current contractual studies focused on the pilot training program of the future, looking ahead to the systems and skills required to provide USAF pilots during 1975–1990.

A program to reduce the cost and improve the quality of ATC navigator training is now in the final procurement stage. A system of new aircraft and simulators promises to reduce training time and expedite navigator production. This action supports the Air Force policy of placing navigators in the back and right seats of tactical fighters and reconnaissance aircraft.

The Vietnamization Program made substantial progress during the past year under the auspices of the Military Assistance Program Training (MAPT). Thousands of Vietnamese Air Force (VNAF) airmen and officers have been trained either at ATC's Stateside technical training schools, UPT bases, or by mobile training teams and field training detachments on the job in Vietnam.

Indicative of the success of the program is the level of self-sufficiency now attained by the VNAF. Seventeen basic courses have been established in Vietnam under the VNAF Improvement and Modernization Program, and more will follow soon. These courses are now taught by more than 240 ATC-trained Vietnamese instructors.

ATC has managed the continental US MAP training since 1950. More than 65,000 students have been graduated since that time, with other thousands trained by students-turned-instructor after returning to their homelands. Between 4,000 and 5,000 students from fifty to sixty nations are involved in ATC training programs annually.

Around the world, through its field training detachments, ATC continues to meet major command requirements for highly skilled personnel with increasing sophistication in its managerial techniques and training technology. Air Training Command prepares the man and helps keep him prepared throughout his service experience. ■

Styles change, and for the better. Women in the Air Force receive their basic training at Lackland AFB, Tex. These three WAFs standing in the entry of a modern barracks are modeling their new Air Force uniforms.

A Major Air Command

Aerospace Defense Command

AEROSPACE Defense Command (ADC), the only US Air Force command with an operational space defense mission, continues to discharge its primary responsibility of guarding the United States against a possible aerospace attack—a responsibility it has had for the past twenty-five years.

Commander of ADC, Lt. Gen. Thomas K. McGehee, is responsible to the Chief of Staff, United States Air Force, for organizing, training, and administering aerospace forces in support of the joint US-Canadian North American Air Defense Command (NORAD). General McGehee is engaged continuously in the job of ensuring that the Commander in Chief of NORAD will have at his disposal highly trained manpower and the best equipment available to carry out the vital job of aerospace defense.

As ADC enters its silver anniversary year, it continues to provide the backbone of the NORAD forces in being to counter the aerospace defense threat to the North American continent. These forces are engaged in the classic task of detection, identification, interception, and—if ever necessary—destruction of enemy forces attacking the United States and Canada.

The Aerospace Defense Command has more than 44,000 Air Force men and women, a substantial part of the entire NORAD force, spread throughout the free world. More than 400 aircraft are committed to defend against the bomber threat.

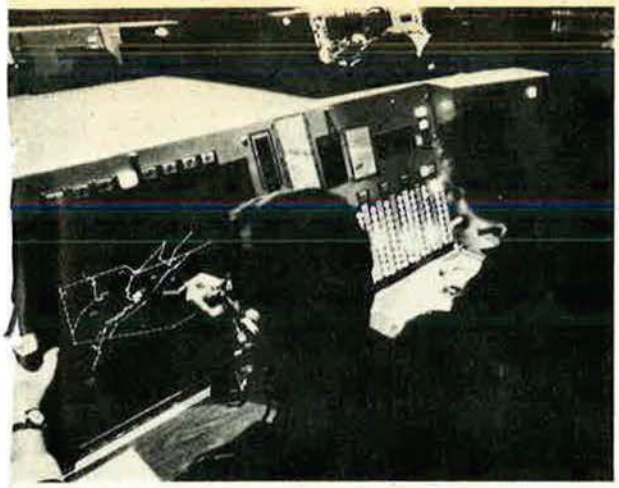
The foremost threat to the United States today is posed by the increasing strategic military power of the Soviet Union. In addition, there is, of course, the growing military strength of Communist China. The Soviet threat includes intercontinental ballistic missiles (ICBM), sea-launched ballistic missiles (SLBM), orbiting vehicles, and a growing fleet of long-range bombers.

During the past year, ADC frequently intercepted Soviet bombers over international waters off the coasts of Alaska and the northeastern borders of North America. Constantly testing our air defense responses in the North Atlantic area, the flights of Soviet Bear bombers were intercepted at high altitudes by ADC's 57th Fighter-Interceptor Squadron. The 57th is under the operational control of CINCLANT for defense of Iceland.

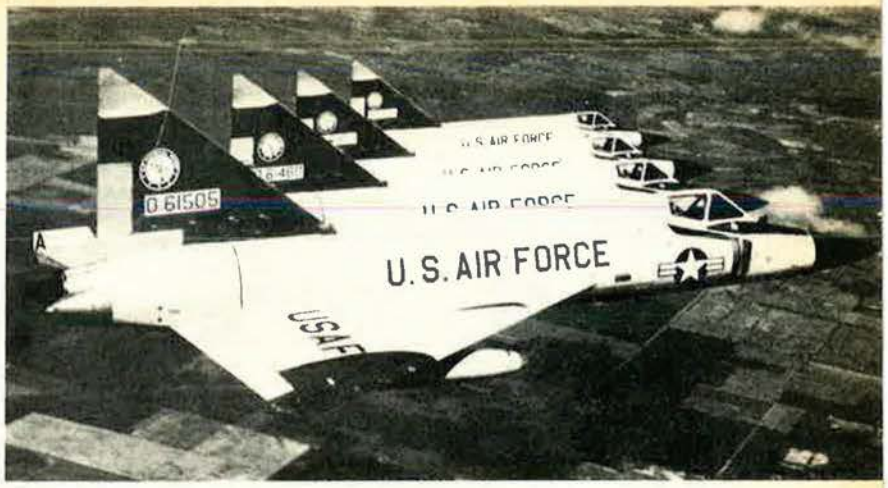
Flying the supersonic F-102 Delta Dagger, the 57th, known as the Black Knights, won the Hughes Trophy for its outstanding mission accomplishment.

In praising the Black Knights, General McGehee said, "Flying in some of the world's

Prior to assuming command of Aerospace Defense Command in 1970, Gen. Thomas K. McGehee was Commander, Fifth AF, and Commander, US Forces, Japan. During World War II, he served in Europe as a B-17 group commander and as Assistant Operations Officer, Eighth AF. From 1958 to 1968 he held increasingly important command and staff positions in the Aerospace Defense Command, and was Assistant Deputy Chief of Staff for Programs and Resources at Headquarters USAF. He is a graduate of the Armed Forces Staff College and the Air War College.



This compact, sophisticated Backup Interceptor Control (BUIC) system is among the devices supplied by ADC for the joint US-Canadian NORAD mission.



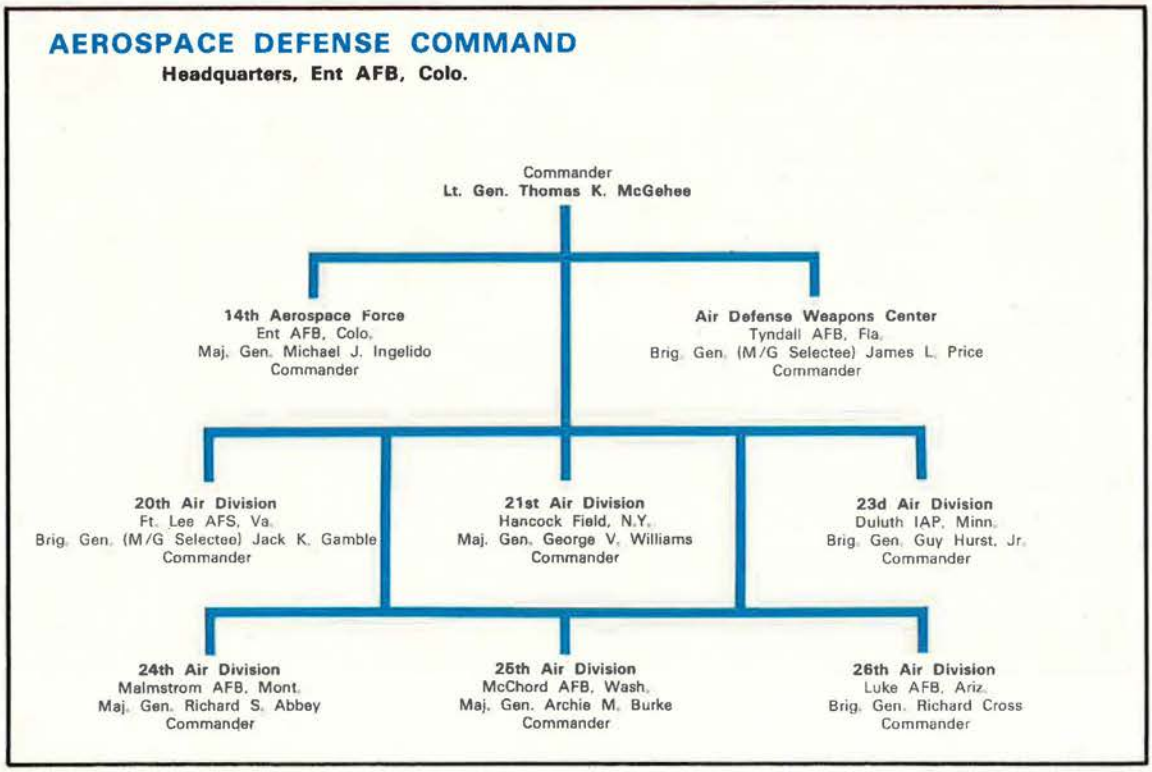
Air National Guard provides about half of US interceptor forces under NORAD. These F-102s belong to the 148th Fighter Group, Minnesota Air Guard.

worst weather, the 57th FIS demonstrated truly outstanding airmanship and dedication to duty by intercepting and identifying a large number of Soviet aircraft."

Fighter-interceptor crews get their marksmanship training at the Air Defense Weapons Center, Tyndall AFB, Fla. Once a year ADC and Air National Guard fighter-interceptor squadrons go to the Center for firing evaluation. From all corners of the United States, crews converge there to test the effectiveness and capability of our nation's aerospace defense forces. But the Weapons Center is more than a firing range. It also conducts systems testing and evaluation, develops tactics, conducts combat crew training, and furnishes expertise in a number of other operational activities dealing with aerospace defense.

The nation's air defenses are constantly checked, rechecked, and scored for operational efficiency through "no-notice," realistic test "attacks" waged by ADC's Defense System Evaluation Squadrons (DSES), sometimes known as the "friendly enemy."

This unique force consists of specially equipped B-57 Canberra twin-jet bombers packed with electronic gear designed to penetrate air defense systems. Using the latest electronic countermeasures, chaff, and crisscross flight patterns, the B-57 squadrons do their ut-



ADC F-102s based at Keflavik, Iceland, fly formation with a Soviet Bear bomber intercepted near the approaches to northeastern US and Canada.

Competition sharpens air defense skills. These ADC judges are inspecting a tool kit of a weapons-loading team vying in the 1970 William Tell Weapons Meet.

most to penetrate the nation's defense system. DSES missions are launched on a no-notice basis from several staging bases.

Some of the ADC fighter-interceptor units, which were tested by DSES crews, made national news headlines in 1970 when they competed for the famed William Tell award. After a five-year intermission, ADC conducted the weapons meet at Tyndall AFB, Fla., October 26–31. In the week-long competition, air defense aircraft from the US and Canada intercepted high-flying jet drones, low-flying targets, and electronic countermeasures aircraft in a realistic test of this continent's ability to defend itself from a bomber attack. Montana, North Dakota, and Minnesota units of ADC and the Air National Guard emerged champions of the William Tell 1970 air defense weapons competition.

Just as fighter-interceptor crews guard against

This B-57, assigned to the Aerospace Defense Command, is making a low-level flight in the vicinity of an ADC long-range radar site. The B-57s, with electronic countermeasures equipment, periodically probe ADC defenses.

the manned bomber threat, seven ADC radars have been modified to provide a sea-launched ballistic missile (SLBM) warning system. This system is being tested by ADC and will assist in reducing the threat of the rapidly growing Soviet capability to launch missiles against the US from peripheral waters.

The missile threat comes not only from the sea, but also from space. In space, ADC's sensors around the world detected many new Soviet launches, as well as the first Red Chinese satellite, the famous singing orbiter launched April 24, 1970. The pace of the Soviet space program is evidenced by the fact that, in one sixty-day period, the Soviet Union launched twenty-two spacecraft.

Keeping track of this vital catalog of man-made satellites in orbit are ADC airmen at the Space Defense Center (SDC) inside Cheyenne Mountain near Colorado Springs, Colo. ADC operates the Center for NORAD as a command post for its global satellite-tracking network. The primary contributor to that network is the Air Force Spacetrack System operated by the Fourteenth Aerospace Force, ADC's space arm. At present, Spacetrack operates telescopic Baker-Nunn cameras as well as conventional detection and tracking radars.

ADC's satellite reports show that the US and the Soviet Union are the main contributors to space activity. But, in 1970, new Russian payloads more than doubled those of the US. Between January 1, 1970, and December 31, 1970, the US put thirty-five payloads into orbit and the Soviets eighty-eight. The Soviet Union has expanded its research and development expenditures in space during the past few years by an average of more than ten percent annually.

Perhaps the most significant development for ADC in 1970 was the letting of a $170 million contract to the Boeing Co. as prime contractor for the future Airborne Warning and Control System (AWACS). The new command, control, and surveillance system is being developed for air defense and tactical operations. Using modified Boeing 707s, this airborne radar station will be able to detect and track enemy aircraft and direct defensive weapons against them. Discussing AWACS, General McGehee says, "It is imperative that we have a survivable means of finding the enemy as far from the continent as possible."

A quartet of supersonic ADC F-106s hone their skills in the air intercept business, practicing their mission against a spectacular mountain backdrop.

A modernized air defense system for use against the Soviet manned bomber threat has been under study for several years. Adoption of this system would give ADC a greatly improved defensive capability. The system would include AWACS and an over-the-horizon (OTH) radar network to vastly increase detection range and warning time.

Despite recent reductions in resources, ADC continues to provide round-the-clock air defense operations and surveillance in support of NORAD's mission of defense of the North American continent.

The need for aerospace defenses has not diminished. ADC's story, from its beginning twenty-five years ago, has been one of dedicated people determined, if necessary, to meet and defeat any aerospace threat to our nation. Vigilance and excellence will continue to be the watchwords of the professionals in the Aerospace Defense Command. ■

Thule, where the average temperature is twenty below much of the time and there's forty inches of snow a year, is a Ballistic Missile Early Warning site.

A Major Air Command

Alaskan Air Command

THE Alaskan Air Command (AAC), one of the oldest of the United States Air Force's major air commands, stands ready on America's last frontier, providing "Top Cover for America."

Under the command of Maj. Gen. Joseph A. Cunningham, the Alaskan Air Command's overall mission includes the conduct, control, and coordination of offensive air operations according to the tasks assigned by the Commander in Chief, Alaska (CINCAL).

An equally important task is to provide combat-ready air defense weapon systems, aircraft control and warning elements, and air defense forces within Alaska for employment under the operational control of the Commander, Alaskan NORAD Region.

As a component of the unified Alaskan Command, the AAC Commander is the senior adviser to CINCAL on the appropriate employment of aerospace power. He plans for, conducts, controls, and coordinates tactical air operations employing AAC or augmentation aerospace forces made available to CINCAL.

As a major air command, AAC exercises control over all assigned Air Force units, activities, and installations within CINCAL's area of responsibility. In carrying out this responsibility, the command provides tactical airlift support within Alaska as required or directed by Headquarters, US Air Force.

AAC provides airlift support between Sondestrom Air Base, Greenland, and the Icecap Sites DYE 2 and DYE 3. Support of other major air command units as well as other military services and governmental agencies throughout the Alaskan area is another major AAC effort.

AAC also provides search and rescue and aeromedical evacuation on the Alaskan mainland. Disaster relief is supplied during domestic emergencies.

Literally topping the air defense routes of the world, AAC's location is the primary factor contributing to its ever-increasing importance. The command straddles the northern bomber routes between the Soviet Union and the industrial heart of the continental United States and has direct air defense responsibility over Alaska's oil-rich north slope. It also links the polar air routes between Europe and the Far East and, more significantly, lies directly on the great circle air route between the eastern United States and Southeast Asia. With the increased mobility of forces made possible by huge jet transports, Alaska occupies a strategically unique vantage point for protection of the free world.

The command has two main bases—Elmendorf AFB, near Anchorage, and Eielson AFB,

Maj. Gen. Joseph A. Cunningham, a graduate of West Virginia University, took command of the Alaskan Air Command in 1969. He won his wings in 1939, and during World War II served as a bomb group commander and operations officer of 12th Fighter Command in North Africa. After the war, he held a number of operational assignments, including those of Vice Commander and Commander of the Aerospace Rescue and Recovery Service. Just prior to his present post, he was Deputy Director for Civil Disturbance Planning and Operations in the Pentagon. He is a National War College graduate.

Midwinter in Alaska is no fun but an excellent time for Arctic training. Above, Air Force ground controllers observe F-105s during tactical exercise.

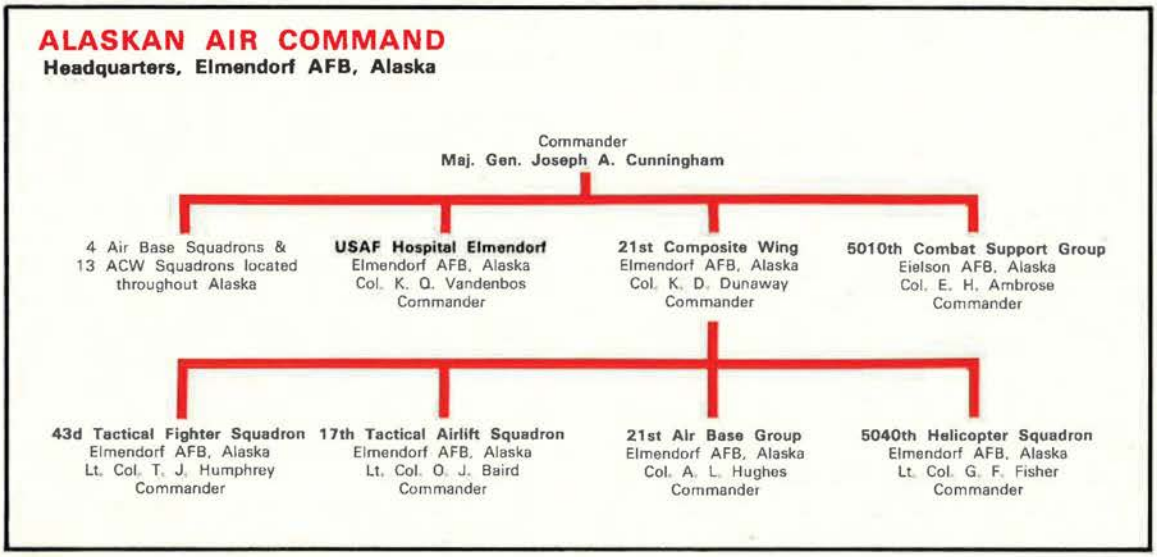
near Fairbanks. Two forward operating bases, at King Salmon and Galena, provide vital extensions for command and control of interceptor weapon resources.

The multiple mission of the Alaskan Air Command is further typified by its thirteen remote installations. They are designed to enhance both the air defense and the tactical air operations roles levied on the command. Five of these installations serve as NORAD Surveillance Stations, providing for the earliest possible detection of manned bomber penetration of US airspace from the Chukotski Peninsula.

Inland, five NORAD Ground Control Intercept Stations and three NORAD Control Centers serve as weapon-control facilities to expedite the intercept of any air-breathing intruders. All these units stand ready to act as combat-reporting posts in support of tactical operations.

During 1970, the Alaskan Air Command celebrated its twenty-fifth anniversary and saw several major improvements to its mission capability, with the addition of the F-4E Phantom, and the HH-3E helicopter to its aircraft inventory. Military Airlift Command HC-130s also came to Elmendorf to provide vastly increased search and rescue capability to the command.

Piloting AAC's Phantoms are members of the 43d Tactical Fighter Squadron (TFS), transferred in early summer from MacDill AFB, Fla. This unit gives AAC an increased air-superiority capability and also provides the unified Alaskan Command with its own



AAC F-4Es provide intercept capability for Alaskan NORAD Region and tac air support for US Army, Alaska.

Never-ending battle with elements. This was Ace Band Polar Cap—the first mass paradrop onto the ice cap.

tactical strike capability. The F-4s replace the F-102 Delta Daggers of the deactivated 317th Fighter-Interceptor Squadron. F-106 Delta Darts, which served on a rotational basis from Aerospace Defense Command units in the "lower forty-eight," have also departed the Alaskan scene since arrival of the 43d TFS.

HH-3Es replaced the 5040th Helicopter Squadron's H-21 Workhorse during the spring of 1970. The larger and more powerful HH-3E enhances the squadron's primary mission of providing logistical support to AAC remote stations, while the aircraft's more sophisticated navigational system is an important aid to the squadron's additional task of conducting search and rescue (SAR) missions.

Primary responsibility for search and rescue is given to the 71st Aerospace Rescue and Recovery Squadron, based at Elmendorf. Although the 71st is a unit of the Military Airlift Command's 29th Aerospace Rescue and Recovery Wing, headquartered at Richards-Gebaur AFB, Mo., it is under the operational control of AAC for SAR activities in Alaska. The squadron was reactivated during March 1970, and flies the specially configured HC-130 Hercules. These aircraft have advanced electronic gear, special survival equipment and flare-delivery systems, and the capability to provide aerial refueling for the HH-3.

Both the 43d and the 5040th Squadrons are elements of AAC's 21st Composite Wing. Also assigned to the wing are T-33s and EB-57s for intercept training, and C-123s, C-124s, C-118s, and C-130s for airlift.

The 17th Tactical Airlift Squadron carries the biggest share of AAC's airlift mission. In addition to its primary mission of tactical troop airlift and tactical resupply for Army units, the squadron has the unique task of supporting Arctic operations in Greenland.

Using ski-equipped C-130 Hercules aircraft, the 17th provides the only physical link between the DEW stations on the Greenland icecap and the outside world. Other Alaska-based C-130s of the 17th are used for supplying remote stations within Alaska, most of which have only gravel strips for runways.

Also assigned to the 17th are two C-124 Globemasters, used primarily for transporting oversized cargo to and from remote stations.

Annual resupply of petroleum and nonperishable bulk supplies to AAC's stations is accomplished during the short Alaskan summer by commercial ocean and river barges.

AAC participates in a perpetual series of joint exercises, entitled "Punch Card," to provide Arctic training for Air Force and Air National Guard units from bases in "the lower forty-eight." Punch Card exercises are conducted in the frigid Alaskan interior near Eielson AFB and include air-to-air and air-to-ground training with live bombing and strafing at a nearby practice range. Other joint exercises, simulating enemy ground attack, are conducted with the US Army, Alaska.

Support of the Military Airlift Command's Operation Combat Pacer—the ferrying of men and equipment to and from Southeast Asia—continues to lead the list of AAC support achievements. During 1970, more than 6,500 C-141s involved in Combat Pacer transited Elmendorf AFB. This included nearly 500 aeromedical-evacuation flights carrying Vietnam casualties to Stateside hospitals. Since the program's inception in November 1965, more than 35,000 Combat Pacer flights have passed through Elmendorf.

Search and rescue is a major humanitarian mission of AAC. Each month, many Air Force, Civil Air Patrol, and civilian sorties are flown under the guidance of AAC's Rescue Coordination Center (RCC) at Elmendorf. During 1970, fifty-nine lives were saved through the combined efforts of military and civilian pilots in Alaska, where the airplane leads all other means of transportation. Recently the RCC was awarded the Air Force Outstanding Unit Award in recognition of its contribution to search and rescue in Alaska.

After twenty-five years of service on America's last frontier, AAC continues to blanket the 586,400 square miles of Alaskan terrain, providing "Top Cover for America." ■

A Major Air Command

Headquarters Command USAF

ONE OF the most diversified major commands of the Air Force is Headquarters Command, USAF, which provides operational support to Hq. USAF, the Joint Chiefs of Staff (JCS), the Office of the Secretary of Defense (OSD), and other governmental agencies.

The responsibilities of HQ COMD USAF—"HEDCOM" as it is often called—extend from its central headquarters at Bolling AFB, Washington, D.C., to more than 800 locations throughout the world.

The scope of this support ranges from supervising the Air Force flying program in the Washington, D.C., area to the manning of units established by JCS in such diverse locations as Saudi Arabia and Taiwan. It also includes support for units of international defense alliances, unified commands, and other government agencies.

HQ COMD USAF is the parent command to approximately 37,000 personnel, representing the greatest variety of duties and specialties found in the Air Force. Approximately 28,000 of these men and women are assigned to Air Force field extensions and special activities units located throughout the world, and are under the administrative control and personnel management of HQ COMD USAF. Nearly one-third of HEDCOM's people are in overseas locations.

The command's special activities units perform special duties with unified commands and other agencies outside the Air Force. For instance, the Air Force astronauts, scientists, engineers, and controllers on duty with the National Aeronautics and Space Administration (NASA) are assigned to the 1st USAF Special Activities Squadron.

Other organizations that are supported by HEDCOM's special activities units include Supreme Headquarters Allied Powers Europe (SHAPE), North Atlantic Treaty Organization (NATO), the North American Air Defense Command (NORAD), the Alaskan Command (ALCOM), US Strike Command (STRICOM), Pacific Command (PACOM), Federal Aviation Administration (FAA), Defense Supply Agency (DSA), Defense Intelligence Agency (DIA), Defense Atomic Support Agency (DASA), and the Military Assistance Advisory Groups (MAAGs).

Personnel assigned to the command's field extensions are under the direct operational control of the Air Staff. These units include the 1005th Special Investigations Group, Washington, D.C.; 1002d Inspector General Group, Norton AFB, Calif.; 1105th Military Personnel Group, Randolph AFB, Tex.; 1030th Auditor General Group, Norton AFB, Calif.; USAF Postal and Courier Service; 1070th Medical Service Group; and the 1127th Field Activities Group.

Approximately 9,000 personnel are assigned to units under the complete command of HQ COMD USAF. These operational and support units include the 1st Composite Wing and Malcolm Grow USAF Medical Center at Andrews AFB, Md.; 1100th Air Base Wing,

Maj. Gen. Nils O. Ohman, who was born in Sweden, graduated from the US Military Academy in 1937, and served as a bomber pilot and group commander during World War II. After the war, he returned to his alma mater as a mathematics instructor before serving for ten years as a SAC wing and division commander. From 1961 to 1964, General Ohman held a key post in the Weapons Systems Evaluation Group. From 1964 to 1968, prior to his present assignment, he was Deputy Chief of Staff for Technical Training, and Vice Commander of the Air Training Command.

1100th Support Group, and the USAF Band, at Bolling AFB; and Headquarters Civil Air Patrol-USAF (Hq. CAP-USAF), Maxwell AFB, Ala.

The **1st Composite Wing,** an important flying unit of the command, is host at Andrews AFB, Md. Located eleven miles southeast of the District of Columbia in the Maryland countryside, Andrews has activities that reach around the world. However, the most vital link is with Washington, since the wing provides executive airlift to all echelons of government. These flights frequently are directed by the White House or the Secretary of Defense. The 1st Airborne Command Control Squadron provides the Joint Chiefs of Staff a national airborne command post consisting of three EC-135s. The 1st Helicopter Squadron provides quick-response airlift and an emergency-evacuation capability in the Washington area. Yearly, more than 12,000 distinguished visitors arrive at Andrews AFB—gateway to the nation's capital.

The 1st Composite Wing supports more than twenty Air Force, Navy, and Marine organizations at Andrews AFB. The largest of these units is Hq. Air Force Systems Command. Other tenants include the 89th Military Airlift Wing, which maintains *Air Force One,* the aircraft of the President of the United States, and twenty-six other VIP aircraft for airlifting high-ranking military and civilian dignitaries; the 113th Tactical Fighter Wing, District of Columbia Air National Guard; the 459th Military Airlift Wing; and Naval and Marine Reserve units.

The **Malcolm Grow USAF Medical Center,** with its main hospital located at Andrews AFB, has clinics at Bolling AFB and the Pentagon. The Medical Center provides medical services, dispensary, flight medicine, preventive medicine, veterinary, and dental services. It also is one of the major teaching hospitals in the Air Force, offering several residency and internship programs.

A subordinate unit, the 10th Aeromedical Staging Flight, with a 150-bed facility at Andrews, furnishes medical care and processing for returning Southeast Asia wounded of all the armed services. Approximately 1,500 sick and wounded arrive at Andrews monthly from around the world.

Another subunit of the center is the 1099th Physiological Training Flight, which is responsible for training in aviation physiology and related fields for Air Force and other DoD personnel in the Mid-Atlantic Region. Annually, 4,000 military and civilian personnel are given comprehensive instruction in aerospace physiology, using the 1099th's two decompression chambers and live-charge ejection seat.

South of the Capitol itself, and across the Potomac from National Airport, is Bolling AFB, operated by the **1100th Air Base Wing,** which also provides administrative and logistical support for HQ COMD USAF.

USAF Honor Guard is the "showcase" unit that represents the Air Force at official ceremonies in the nation's capital. A carefully chosen group of 152 airmen and three officers makes up the Guard.

The 1100th Air Base Wing is the parent unit of one of the Air Force "showcase" units, the elite USAF Honor Guard, which performs with crack precision during daily ceremonies in the Washington, D.C., area. These activities include official state affairs involving distinguished national and international representatives.

Bolling AFB's history dates back to the first days of military aviation. A master plan has been developed to make Bolling one of the most modern bases in the Air Force.

Two other major HQ COMD USAF units are also located at Bolling AFB—the 1100th Support Group and the USAF Band.

Headquarters Command, USAF's **1100th Support Group** is the only field organization in

the Air Force whose mission is devoted exclusively to comptroller activities.

This unit's Budget Directorate administers funds amounting to about $217 million annually in support of the command's mission.

The group's Accounting and Finance Directorate provides appropriation accounting service involving $3 billion annually, for the Secretary of the Air Staff (Hq. USAF), Headquarters Command, and segments of eighteen other major commands. The group's pay and travel division handles the pay records for some 34,000 military and civilian personnel, including the Secretary of the Air Force and the Chief of Staff. The Directorate's collections and disbursements exceed $1 billion annually.

The group's Data Automation Directorate, with its five computers, provides both command- and base-level data-processing support for Headquarters Command and most of its assigned or attached units.

The group's Management Analysis Directorate supplies analytical and presentation services for Hq. Headquarters Command and the 1100th Air Base Wing.

Headquarters Command runs the Civil Air Patrol. CAP, AF civilian auxiliary, conducts, among other programs, courses for air-minded youth, such as this survival program at the Air Force Academy.

The **United States Air Force Band,** HQ COMD USAF, is the official musical representative of the USAF, and has been acclaimed as America's International Musical Ambassador. The organization is composed of the Concert Band, Symphony Orchestra, String Orchestra, the Singing Sergeants, the Airmen of Note, the Strolling Strings, the Ceremonial Band, and various smaller ensembles drawn from the larger groups. These units provide a variety of music for official USAF functions around the globe, and for military and governmental functions in the Washington, D.C., metropolitan area. These outstanding military musical organizations have performed at the White House, the House of Representatives' Chamber, the Department of State, and in the world's finest concert halls.

The United States Air Force Band and the Singing Sergeants make two concert tours annually, either both within the United States or one in America and one abroad. The Airmen of Note make semiannual tours under the same arrangement. All concerts on these tours are presented free as a public service by the USAF. The United States Air Force Band has appeared in every state of the union and in more than fifty foreign countries on five continents. It performs weekly on the USAF's award-winning radio program, "Serenade in Blue," which is carried by more than 2,500 stations.

These internationally acclaimed USAF musicians have been applauded in person by more than 30,000,000 people throughout the world.

On August 1, 1968, Headquarters Command, USAF, assumed command of **Civil Air Patrol-USAF,** which is headquartered at Maxwell AFB, Ala. A civilian auxiliary of the Air Force, with all volunteer members, CAP consists of eight geographical regions and fifty-two wings with a membership of approximately 73,000. Since February 1961, CAP pilots, flying under the supervision of the Aerospace Rescue and Recovery Service, have participated in 3,752 missions, flying 109,921 sorties for a total of 205,519 hours. Over this nine-year period, these operations have saved 1,244 lives and have assisted 16,042 Americans threatened by danger. In addition, the nonprofit organization assists local communities and Civil Defense in times of local and national disasters, such as floods, hurricanes, blizzards, and tornadoes. CAP also operates a comprehensive aerospace education and youth-motivation program for its 36,000 teen-age cadet members. ■

Malcolm Grow USAF Medical Center at Andrews AFB provides medical, dental, and veterinary services for some 100,000 active and retired personnel in the Washington area.

A Major Air Command

US Air Forces Southern Command

THE US Air Forces Southern Command (USAFSO) is the USAF representative for Latin America. It is an Air Force major command and the air component of the unified US Southern Command. Maj. Gen. Kenneth O. Sanborn commands USAFSO, headquartered at Albrook AFB, Canal Zone. On November 20, 1970, USAFSO observed its thirtieth anniversary.

Contributing to the air defense of the Canal area, and the technical and nontechnical training of personnel from the armed forces of friendly Latin American nations are the primary mission responsibilities of USAFSO.

The geographic area, encompassing most of the South American continent, is two and a half times the size of the continental United States and second in the Air Force only to that of PACAF. Yet, USAFSO is comparatively small in terms of manpower.

Maj. Gen. Kenneth O. Sanborn, a 1937 graduate of the US Military Academy, served as a bomber pilot and group commander in the Caribbean and the Pacific during World War II. After the war, he was a Joint Staff planner and executive to Gen. Omar Bradley on the NATO Military Committee. For eight years, he was assigned to SAC as a wing and division commander and staff officer. From 1960 to 1965, General Sanborn served with the Military Assistance Advisory Group, Taiwan. He headed the group prior to becoming Chief of Staff at AFLC, where he remained until assuming his present position in 1968.

From its two bases in the Canal Zone—Albrook AFB and Howard AFB—USAFSO provides logistic support to US military groups and their Air Force sections in Central and South America. The command's 24th Special Operations Wing (24th SOWg), in conjunction with MAC airlift forces, supports these operations. In March of this year, MAC assumed the support run connecting the major capitals of South America. A detachment of TAC's C-130s is deployed in the Canal Zone. These, and the C-123Ks, support a broad range of US objectives throughout the area.

Formal training is conducted by USAFSO's Inter-American Air Forces Academy (IAAFA) at Albrook. The Academy presents a variety of courses in technical and nontechnical aerospace skills, primarily for enlisted men of Latin American armed forces. In early 1971, the Academy expanded its officer training program to two courses when it opened an Academic Instructor course.

In the recent past, it had presented only a Special Air Operations course for officers, conducted with the assistance of the 24th SOWg. Later in 1971, IAAFA plans to add air intelligence and aircraft maintenance courses for officers. Another action in 1971 was the changing of enlisted student courses from a semester to a trimester basis.

In 1970, 563 students from fourteen Latin American countries were graduated from the Academy, bringing to nearly 10,000 the number graduated since classes began in 1943.

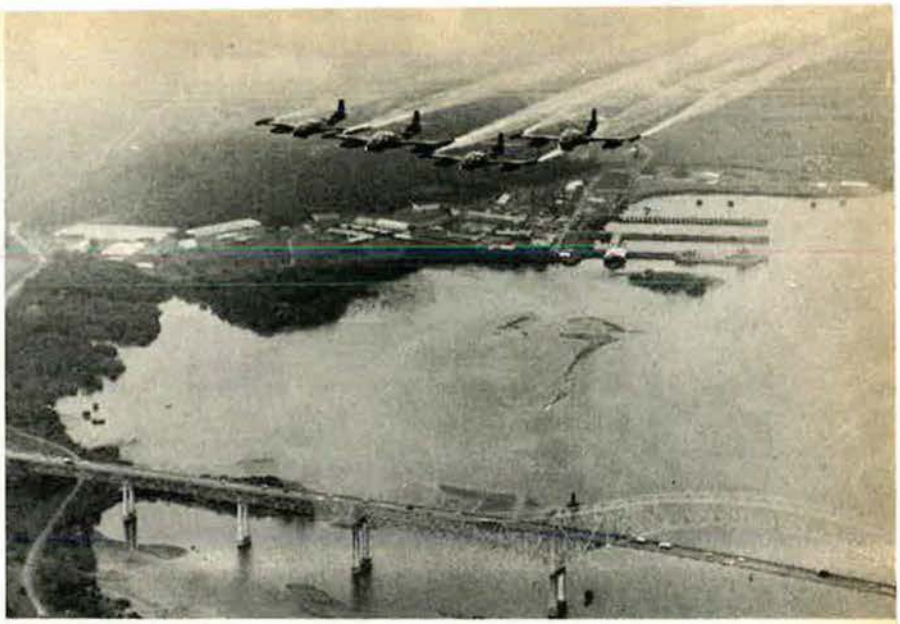
All IAAFA courses are taught in Spanish by bilingual US Air Force instructors. Guest instructors, both officer and enlisted from various Latin American countries, also teach at IAAFA.

Translating USAF training materials into Spanish for use in the school and in on-the-job training programs conducted by participating Latin American armed forces is also a responsibility of IAAFA.

Administered by USAFSO and located at Albrook, the USAF Tropic Survival School in 1970 graduated more than 1,200 students from jungle and water survival courses. Also during the year, school instructors presented special survival briefings and tours of the school's zoo to 2,000 others, while another 5,000 persons visited the zoo to see the collection of plants and animals indigenous to the Western Hemisphere tropics.

USAFSO operates two training programs for Latin American military personnel as adjuncts to the formal training presented at IAAFA. These are the Familiarization Job Training program where students come to the Canal Zone to work with their USAF counterparts, and the mobile training team program, where specialists go to a Latin American nation to teach. Instruction in a wide field of technical and nontechnical skills is offered in these two programs.

Search and rescue and humanitarian airlift operations continued to be carried out in large numbers in USAFSO. During the latter part of 1970, supervision of these services was transferred from USAFSO to Military Airlift Command, which established a detachment at Albrook. The USAFSO facilities, equipment, and personnel were transferred to the new organization. HH-3 helicopters are being introduced to replace the CH-3 helicopters formerly used. While detachment crews fly the majority of missions, USAFSO fixed-wing aircraft and helicopters supplement the MAC rescue force.



USAFSO A-37 attack-fighters soar over the Thatcher Ferry Bridge spanning the Panama Canal at Balboa. USAFSO provides air defense of the vital waterway.

Rescue and recovery is one of the many missions of USAFSO, serving the ill and injured of Latin America. Above, a USAFSO crewman rides the chopper lifeline.

A welcome addition to the USAFSO air fleet in 1971 was the arrival in January of UH-1N Twin Huey helicopters. Additional A-37 attack aircraft and C-123K transports continued to arrive in 1970 and 1971 as replacements for the T-28s and C-47s that the command had previously used.

Among the many civic-action and humanitarian projects undertaken by the command in the past year were extensive flood relief projects carried out in Panama, Costa Rica, and Colombia. The greatest effort in 1970 was a massive program to bring relief to victims of the disastrous earthquake that hit the Chimbote area on Peru's Pacific coastline on May 31.

From June 2 until July 3, USAFSO aircraft, primarily C-123Ks from the 24th SOWg, plus TAC's C-130s under operational control of the wing, airlifted 250,000 pounds of emergency supplies from the Canal Zone to Lima. Operating from Lima's Jorge Chavez Airport, the USAFSO aircraft airlifted one and a quarter million pounds of supplies to the Chimbote area, made 501 medical evacuations, and carried 2,827 passengers. This in-country relief project was carried out under practically bare-base conditions.

For exceptional achievement in Peru, the 24th SOWg was awarded the Air Force Outstanding Unit Award. Gen. George R. Mather, Commander in Chief, US Southern Command, presented the award on February 6, 1971. ■

A Major Air Command

Air Force Communications Service

GEN. Curtis E. LeMay, then Chief of Staff, USAF, termed the creation of the Air Force Communications Service (AFCS) ". . . in keeping with the express desires of the President for improved means of effecting command and control of our forces—and to bring about greater operational effectiveness for our aerospace forces."

Today, as AFCS prepares to observe its tenth anniversary as a major command, on July 1, 1971, its responsibilities reach to all parts of the globe and into space. Its personnel strength has almost doubled the 30,000-man Airways and Air Communications Service (AACS) cadre from which it sprang. And with about 700 operating locations in all but three states and in nearly forty foreign countries, the organization is the Air Force's most widely dispersed command.

Although a major command for only ten years, AFCS's roots go back to 1938 when the Army Airways Communications System was established, largely as a result of General of the Air Force Henry H. (Hap) Arnold's interest in developing a communications system. This became the Airways and Air Communications Service in 1946, and, ultimately, the Air Force Communications Service with headquarters at Scott AFB, Ill.

The command will celebrate its tenth anniversary with a two-day open house July 3–4 that is expected to attract thousands of visitors to its headquarters. The event also marks AFCS's first anniversary at its new base. It was just one year ago that AFCS accepted operational control of Richards-Gebaur AFB, Mo., from the Aerospace Defense Command, thus acquiring its "own" base for the first time since pre-World War II days.

During the first year at its new location, the globally operating command, led by Maj. Gen. Paul R. Stoney, continued to provide the outstanding service that had characterized its performance during the 1960s.

That decade witnessed a growing commitment in Southeast Asia and an expanding space program—and AFCS played a part in both. AFCS established numerous radar and ground control approach facilities and control towers alongside Vietnam runways. Communications units also were set up to support the growing Gemini program, forerunner of today's Apollo series of moon shots.

On May 1, 1962, for example, the 1964th Communications Squadron was organized at Tan Son Nhut Air Base, Vietnam. Not long after, the squadron was upgraded to a group in order to better manage the communications squadrons being formed all over the country.

Maj. Gen. Paul R. Stoney, a graduate of Emory University, won Air Force wings in 1942. His long career in the field of military electronics includes participation in early studies that led to formulation of standard instrument flying techniques in the Air Force. He has held a series of important Air Force and joint communications posts, including direction of SAC's communications systems. He was Vice Commander of the Air Force Communications Service before being named AFCS Commander in 1969. He is a graduate of the Air Command and Staff College and the Army War College.

An air traffic controller with AFCS's 2069th Communications Squadron directs an early—or is it late?—bird as the sun rises over the flight line at Nellis AFB, Nev.

AIR FORCE COMMUNICATIONS SERVICE

Headquarters, Richards-Gebaur AFB, Mo.

Commander
Maj Gen Paul R Stoney

PACIFIC COMMUNICATIONS AREA

Hq., Wheeler AFB, Hawaii
Brig. Gen. George J. Iannacito
Commander

Far East Communications Region
Fuchu AS, Japan

Southeast Asia Communications Region
Clark AB, Luzon, P.I.

1st Mobile Communications Group
Clark AB, Luzon, P.I.

1867th Facility Checking Squadron
(Service Evaluation)
Clark AB, Luzon, P.I.

TACTICAL COMMUNICATIONS AREA

Hq., Langley AFB, Va.
Col. Clifton S. Ridgway
Commander

4th Mobile Communications Group
Altus AFB, Okla.

5th Mobile Communications Group
Robins AFB, Ga.

EUROPEAN COMMUNICATIONS AREA

Hq., Lindsey AS, Germany
Brig. Gen. Paul G. Galentine, Jr.
Commander

United Kingdom Communications Region
South Ruislip AS, England

Mediterranean Communications Region
Torrejon AB, Spain

Central European Communications Region
Ramstein AB, Germany

1868th Facility Checking Squadron
(Service Evaluation)
Wiesbaden AB, Germany

NORTHERN COMMUNICATIONS AREA

Hq., Griffiss AFB, N.Y.
Col. William R. Sullivan
Commander

1840th Air Base Wing
Richards-Gebaur AFB, Mo.

1860th Facility Checking Squadron
(Service Evaluation)
Richards-Gebaur AFB, Mo.

SOUTHERN COMMUNICATIONS AREA

Hq., Oklahoma City AFS, Okla.
Col. Wallace J. Jarman
Commander

3d Mobile Communications Group
Tinker AFB, Okla.

ALASKAN COMMUNICATIONS REGION

Hq., Elmendorf AFB, Alaska
Col. Jack C. O'Dell
Commander

1978th Communications Group
Albrook AFB, Canal Zone

The first Vietnam Military Affiliate Radio System (MARS) station was activated at Tan Son Nhut on December 13, 1965. Now there are twenty-three MARS stations in Vietnam and Thailand.

The command drove ahead along new avenues of communications development as well. One was the activation of an emergency-message automatic-transmission system on February 20, 1962, enabling the Air Force Chief of Staff to alert major units by using predetermined messages.

AFCS also operated the Alaska Communication System for the Air Force when it was taken over from the Army in 1962. It activated Air Force Data Communications Switching Centers from which the AUTODIN system grew, and it assumed complete communications responsibilities for other major commands, such as the Tactical Air Command, on January 1, 1963.

In the late 1960s, AFCS became involved in a joint service program to develop concepts for the use of communications satellites for highly mobile users. When the feasibility of such a system was proved, JCS directed the use of the residue assets of a research and development satellite communications program as an operational system. Air Force was chartered by JCS as the lead service to provide technical advice on operational system integration, and in 1970 AFCS was directed to assume the technical manager role. Subsequently, AFCS established a Technical Management Office at its headquarters, and a Tactical Relay and Operations Center at Kirtland AFB, N.M., to exercise operational control over users of the satellites. In this new role, AFCS implemented the Interim Operational Capability of the Tactical Satellite Communications System. The command has also represented the Air Force's interest in the Defense Satellite Communications System ground terminal development program.

A1C Warren Francis, of the 1923d Communications Squadron, Kelly AFB, Tex., tries for a stronger signal at base's Military Affiliate Radio System station.

One of the major events of 1970, in conjunction with the move to Richards-Gebaur, was the merger of the Air Force Logistics Command's Ground Electronics Engineering Installation Agency (GEEIA) into AFCS, announced by Secretary of Defense Melvin R. Laird on March 6, 1970. The merger, effective April 1, 1970, resulted in a reduction of approximately 2,000 manpower authorizations. It was a major move toward consolidating USAF ground communications-electronics-meteorological (CEM) functions under a single USAF command. By October 1, 1970, all relocations had been completed and AFCS assumed full worldwide responsibility for managing of the USAF CEM mission, including planning, programming, engineering, installation, operating, and maintaining communications and air traffic control facilities for the Air Force and other agencies.

Throughout the entire period of consolidation and restructuring, AFCS continued its mission of providing the Air Force with the most extensive, highest quality, long-haul communications system in the world.

Most AFCS personnel are involved in the command's communications operations, both in support of USAF missions and as the major contributor among all the military departments to the Defense Communications System (DCS). About sixty percent of the circuitry and personnel for this long haul global system is provided by AFCS.

During the 1960s the growth of automation within the Air Force has been phenomenal. The use of computers has drastically changed the way the Air Force accomplishes its mission in all functional areas. AFCS, in its vital role of providing communications, is directly in-

AFCS is coming up on its tenth anniversary and USAF's Thunderbirds will be on hand to help mark the date. Above, they do their stuff over Nellis AFB.

volved. Three systems—Automatic Digital Network (AUTODIN), Automatic Voice Network (AUTOVON), and Automatic Secure Voice Communications Network (AUTOSEVOCOM)—carry the bulk of command and control communications.

AUTODIN provides a global capability of handling more than 40,000,000 punched cards daily, or the equivalent of nearly 600,000,000 words a day. Nineteen automatic switching centers make up the system, with AFCS operating the Air Force's ten centers. This completely automatic system is capable of handling any type of digital input—teletype, data cards, or computer-to-computer information.

AUTOVON, principally a long-haul, nonsecure voice communications system, will be fully operational this year. Using ninety-one switching centers located around the globe, commanders will be able to contact any base within minutes. AFCS is the operating agency for the Air Force portion of the integrated system, which is capable of both voice and data transmission. AUTOSEVOCOM consists of automatic and manual switches, security devices, subscriber terminals, and ancillary equipment that provide the means for voice communications up to and including Top Secret.

AUTODIN, AUTOVON, and AUTOSEVOCOM constitute the most sophisticated communications complex in the history of electrical communications. Under any conceivable tactical, emergency, wartime, or peacetime condition, commanders can use them to exercise instant global command and control of their forces. And they can do this from any point on earth by using any available form of electrical communications—satellite, tropospheric scatter, land or ocean cable, or leased telephone lines.

Air traffic controllers of AFCS were kept busy during 1970 with more than seventeen million air operations—some five million in Southeast Asia alone. Fifty times during the year they monitored flights of *Air Force One*, the Presidential aircraft.

Air traffic controllers "saved" seventy-five aircraft during 1970, bringing the total since the command was activated to 1,129 saves with 4,258 persons on board. Total cost of the aircraft was in excess of $1.2 billion.

A "save," credited only after an incident meets stringent criteria set forth by an Aircraft Save Review Board, is "the safe recovery of an imperiled aircraft through extraordinary and timely application of air traffic control knowledge, techniques, and procedures, where there is reasonable doubt that the aircraft would have been recovered without such action." The board determines the validity of all claims, and personnel credited with bona fide "saves" are awarded certificates.

As part of its worldwide air traffic control mission, AFCS operates a highly specialized operational evaluation program. Through systematic, periodic flight checks, dual-rated pilot/controllers of the command's facility checking squadrons evaluate the effectiveness of air traffic controllers throughout the world. AFCS also maintains worldwide capability to conduct flight inspection of its mobile navigation-aid equipment. This technical measurement and certification mission—performed by the Federal Aviation Administration in the United States—is performed in Southeast Asia solely by AFCS aircraft and crews. AFCS's facility checking units extended their perfect flying safety record to six straight years by the end of 1970. Individually, some of the units have unblemished accident records dating back to 1962.

Among the first voices to be heard following the devastation of the February 9, 1971, Los Angeles earthquake were those emanating from the 2080th Communications Squadron's Military Affiliate Radio System (MARS) station. For nearly two hours after the initial shock, military and civilian members of the station helped pass official messages concerning relief

A1C Steve Collins, left, and SSgt. Joe Huntington operate a 3d Mobile Communications Group mobile telephone switchboard at Tinker AFB, Okla.

Surrealistically superimposed on SSgt. Jimmy Turner as he works are computer panel markings on glass, at 1984th Communications Squadron, Tinker AFB, Okla.

activities. As the communications systems of Civil Defense and police took over more and more of the official traffic, MARS personnel began to transmit morale-type messages from people outside the disaster area who were concerned about the fate of their friends and loved ones.

USAF MARS operators throughout the world handled 385,000 messages during 1970, helping American servicemen overseas with morale calls. Two-thirds of these—285,367—originated from the twenty-three MARS stations operated by AFCS in Vietnam and Thailand.

Not all of AFCS's communications and air traffic control operations involved fixed facilities. The command has five strategically located mobile communications groups ready to respond to emergencies and contingencies anywhere in the world. Hurricane Camille and the Apollo-14 space shot were only two of the many events that triggered immediate responses by these units. Following Camille's destruction, AFCS mobile units provided emergency communications and air traffic control facilities until fixed facilities could be reinstated. Mobile communications units were strategically deployed to provide emergency communications in the event the Apollo-14 flight aborted.

AFCS Air National Guard and Air Force Reserve personnel have contributed significantly to the command's outstanding record of success. They have been used around the world to assist hard-pressed AFCS units. Beginning in late 1966 and through early 1967, ANG electronic installation men removed all communications-electronics equipment from nine bases and twenty-two microwave locations in France, under project FRELOC. In 1969 they were used throughout the Pacific area (except Vietnam) to install, maintain, and rehabilitate C-E items. They have supported Apollo space missions.

In the spring of 1970, approximately 175 electronics installations airmen dismantled a United States communications site at Samsun and installed equipment at Karamursel—both in Turkey—during their two-week field training. In addition, the Oklahoma Air National Guard

TSgt. Earl Washburn of the 2045th Communications Group handles the complex console at the DCS AUTODIN Center located at Andrews AFB, Md.

maintains and operates a special-project C-97E aircraft known as "Talking Bird." Operating as a command and control airborne platform, it supports AFCS requirements in technical evaluation of air-ground communications, command control, and air traffic control services.

AFCS has 57,000 active-duty members, including 8,000 civilians, in units that vary in size from a radio relay station detachment of fewer than ten men on a snowcapped mountain site to a 1,300-man squadron at a major air base. Some fifty-three percent of the command's military members are overseas at any one time—about 8,000 of them at short-tour locations. For the most part, AFCS units are tenants on bases, and thus under the jurisdiction and control of other commands for support and housekeeping services.

Wherever they are, AFCS men are proud of their motto, "Providing the Reins of Command." They agree with Gen. Omar Bradley's words: "Congress can make a general, but it takes communications to make him a commanding general!" ■

A1C James Smith, Jr., left, prepares a tape for transmission while Sgt. Barry Valentine reads an incoming message —just part of the day's work in a mobile teletype trailer of the AFCS 3d Mobile Communications Group at Tinker AFB, Okla.

A Major Command

USAF Security Service

Secure communications is one of Security Service's jobs. Above, a communications technician changes an antenna coupler at a US Air Force Security Service communications security (COMSEC) location.

THE UNITED States Air Force Security Service (USAFSS) continues to provide the vital function of protecting the security of the vast communications network that links the many Air Force installations and units throughout the world. From its headquarters at Kelly AFB, Tex., through seventy-seven activities in thirteen countries, the command administers this vital function.

To provide this communications surveillance and security for today's aerospace forces requires the use of the most sophisticated electronic and cryptographic equipment available, and the employment of the latest technology in monitoring and analyzing information. In addition to the telephone—the Air Force's largest communication system, USAFSS also evaluates air-to-ground, air-to-air, and other nonsecure electrical transmissions systems.

Direction-finding and range-estimation func-

Maj. Gen. Carl W. Stapleton served as Vice Commander of USAF Security Service before being named Commander in 1969. During World War II, General Stapleton, a 1942 graduate of the US Military Academy, flew two tours in Europe as a fighter pilot and squadron commander. After the war, he commanded a fighter-bomber wing, served as US Air Attaché in Thailand, and headed the Air Attaché Branch in Air Force Headquarters. From 1961 to 1963, he commanded the 6940th Technical Training Wing before moving to Hawaii as Deputy Commander, and later Commander, of the Pacific Security Region.

This self-sufficient communications monitoring shelter can be moved by air or ground to any Air Force unit that needs communications security support.

An Air Force Security Service technician prepares portable recording unit for shipment to a unit that has asked USAFSS to check its communications.

tions are also performed in support of search and rescue operations. Several Security Squadrons (Mobile) are maintained by USAFSS to respond to emergency situations where permanent facilities cannot provide sufficient surveillance.

To provide the special professional skills needed to operate and maintain its complex electronic and cryptologic equipment, the Security Service established the USAFSS Technical School at Goodfellow AFB, Tex. The command is also responsible for the operation of the Air Force Cryptologic Depot (AFCD), which provides other Air Force organizations with necessary systems to maintain secure communications.

Monitor operator at a communications security operating site transcribes signals picked up by recorder devices. Data are later analyzed by specialists.

Air Force Security Service was recognized for exceptional performance in several areas during the past year. USAFSS placed first in the Air Force Military Suggestion Program for the third time in four years. For the second year in a row, Air Force Security Service was awarded the Travis Trophy. This trophy is awarded annually to the cryptologic agency making the most significant contributions in this field. The Air Force Special Communications Center (AFSCC), a subordinate unit of USAFSS, became the first Air Force unit to receive the Navy Meritorious Unit Commendation, the equivalent of the Air Force Outstanding Unit Award. This award was presented to AFSCC for its support of Naval air operations in Southeast Asia.

Maj. Gen. Carl W. Stapleton, Commander of this globally dispersed command, and Brig. Gen. George K. Sykes, Vice Commander of USAFSS, emphasize the need to keep pace with the rapidly changing technology of communications. They feel that these changes will dictate the future operational requirements of United States Air Force Security Service's important mission. ■

United States Air Force Academy

THE MISSION of the US Air Force Academy is to prepare career officers for tomorrow's Air Force. This objective is reached through a four-year, college-level course of study in academics, physical education, and military leadership training, under the direction of Lt. Gen. Albert P. Clark, the Academy's Superintendent.

The formal curriculum is augmented by numerous extracurricular activities, social events, and religious functions. The Chaplain's program is very much a part of cadet education.

With the July 5 arrival of approximately 1,350 "doolies" in the Class of 1975, the Cadet Wing enrollment will approach 4,300. The maximum authorized strength of 4,417 cadets will be reached in the summer of 1972, bringing the Academy enrollment up to those of West Point and Annapolis.

Academic instruction is administered by the Dean of the Faculty, Brig. Gen. William T. Woodyard. Each cadet completes a core curriculum of 140½ semester hours in the basic sciences, engineering sciences, social sciences, humanities, military training, and physical education. In addition, each cadet must complete a minimum of 46½ hours of electives in one of twenty-eight major fields, for a total requirement of 187 semester hours. Graduates are awarded a Bachelor of Science degree and a commission as a second lieutenant in the Regular Air Force.

On June 9, when 694 members of the Class of 1971 will get their diplomas, the total number of graduates will have topped 6,200. Twelve percent of the new officers will attend civilian universities, to earn master's degrees within nine months through the Academy's Cooperative Master's Program. Three percent will earn nationally recognized scholarships and fellowships. An additional three percent will go to medical school; and one percent will go to law school. Seventy-one percent, including some of the above, will enter pilot training. Others will train as navigators, and the balance will report for initial Air Force career assignments.

The Commandant of Cadets, Brig. Gen. Walter T. Galligan, is responsible for cadet leadership and military training. The Academy has an eleven-month-a-year schedule, including fall and spring academic semesters, plus a summer training period. A substantial portion of cadet military training is accomplished in the summer months.

Recently a number of changes have been made in both cadet training and administration. All four classes now may take leave at Christmas and the Spring Break. At Thanksgiving, the upper three classes go on leave; Fourth

Lt. Gen. Albert P. Clark became Superintendent of the Air Force Academy in 1970. Prior to that assignment, he served as Commander of the Air University, and before that, as Vice Commander of the Tactical Air Command. He is a 1936 graduate of the US Military Academy who won his wings in 1937. During World War II, he was second in command of the 31st Fighter Group, the first US fighter unit in Europe. Shot down over France, he was a prisoner of war for three years. He has held varied operational and staff assignments, including that of Chief of Staff, USAFE.

The Academy statue of eagle and fledglings symbolizes the institution's mission of training young men for service to their country. The motto on the base of the statue: "Man's flight through life is sustained by the power of his knowledge."

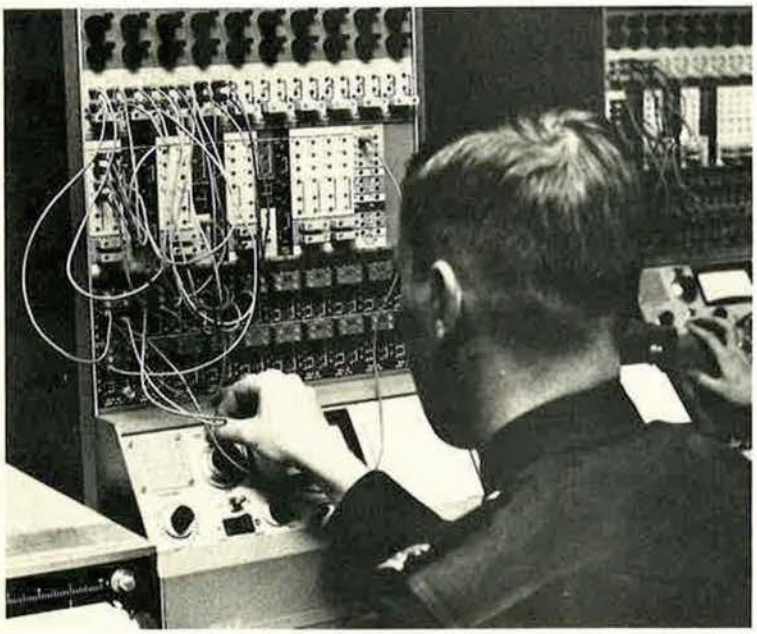
includes all the survival indoctrination a cadet will get at the Academy, and is Air Force-accredited, on a par with the survival course at Fairchild AFB, Wash.

The summer months have been divided into three periods of three weeks each. Cadets take leave during one of these periods. They select a required military training activity and an optional leadership assignment to complete during the other two periods.

This year several new summer leadership options will be open to cadets. They may select, among others, an Aerospace Orientation course with Air Training Command; an Air Cruise, under the auspices of the Navigation Department, to visit major aircrew training bases; Underwater Swimmers Training or Underwater Demolition schooling with the Navy; or RECONDO training with the Army.

Approximately 1,000 First and Second Classmen will participate in "Operation Third Lieutenant" tours at air bases in Europe, Southeast Asia, and the US. Others will work on Air Force summer research projects.

A total of 1,026 cadets currently are engaged

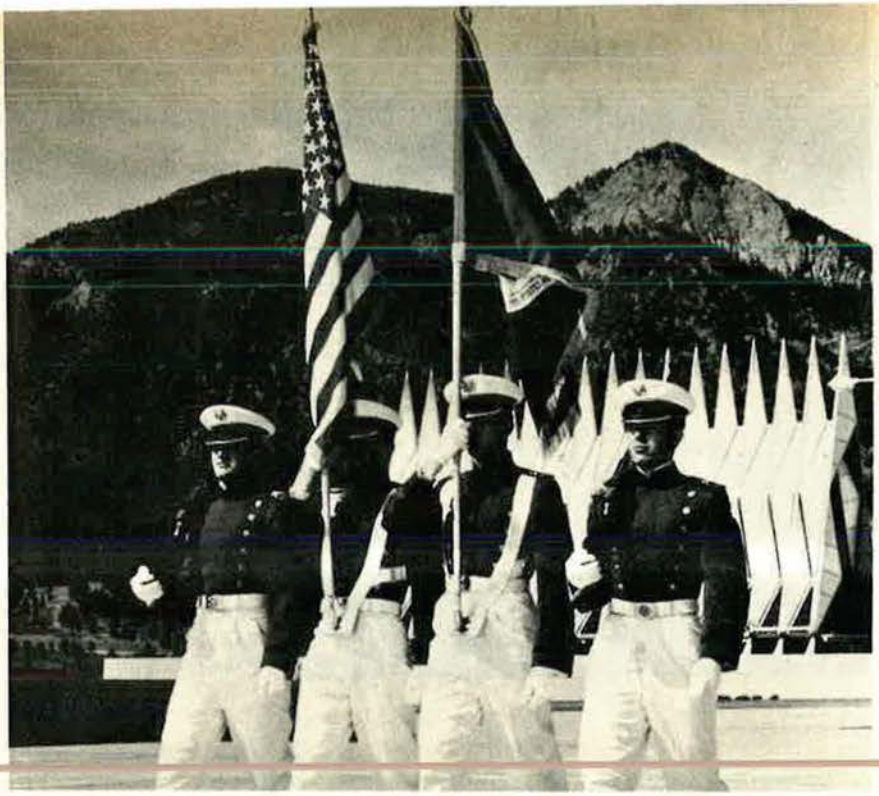


The Academy requires all cadets to complete at least one course in computer science. The subject is also offered as an academic major.

Airmanship programs at the Academy include parachute training, soaring, lightplane flying, orientation flights in T-33s, and air navigation cruises.

Classmen remain, but get passes to visit the local area. A new leave package, inaugurated in late 1970, gives more free time to all cadets. Fourth Classmen get one weekend off per semester and two off-duty privileges per month.

Basic Cadet Training for the new Fourth Class will be 6½ weeks this summer, one week less than before. Third Class summer training will include a three-week SERE (Survival, Escape, Resistance, and Evasion) course. It



The broad terrazzo at the Academy, set against a spectacular mountain backdrop, is a striking setting for Academy parades, especially in the clear Colorado air during the annual June week. The smart dress, precision marching, and a top-flight military band attract many parade spectators.

in Airmanship programs. Flight-oriented to provide career motivation, these activities put the "air" in the Air Force Academy. Should a cadet choose to do so, he can accomplish the following flying activities during four undergraduate years:

- Complete the T-41 pilot indoctrination course, the equivalent of Phase I of ATC's undergraduate pilot training, and earn an FAA private pilot's license. The course is offered to all pilot-qualified First Classmen and to some selected Second Classmen.
- Earn an FAA private glider-pilot's license in the soaring program, with opportunities to advance to commercial and instructor ratings.
- Earn paratrooper wings by completing basic airborne training, with opportunities to advance to jumpmaster and parachute instructor ratings.
- Complete the basic air navigation courses and study advanced navigation concepts and systems development course.

Falcon athletic teams compete in eighteen varsity sports; cadet intramural rivalry is high. Col. Francis E. Merritt, Director of Athletics, feels there is a correlation between top physical condition and the ability to perform well militarily and academically. On the Dean's List for excellence are 305 scholar-athletes. Out of fourteen Rhodes scholars produced thus far in thirteen graduating classes, five were outstanding athletes. The 1970–71 season so far has produced four All-Americans in various sports. Two cadets have won NCAA postgraduate scholarships; one has received a National Football Foundation and Hall of Fame grant.

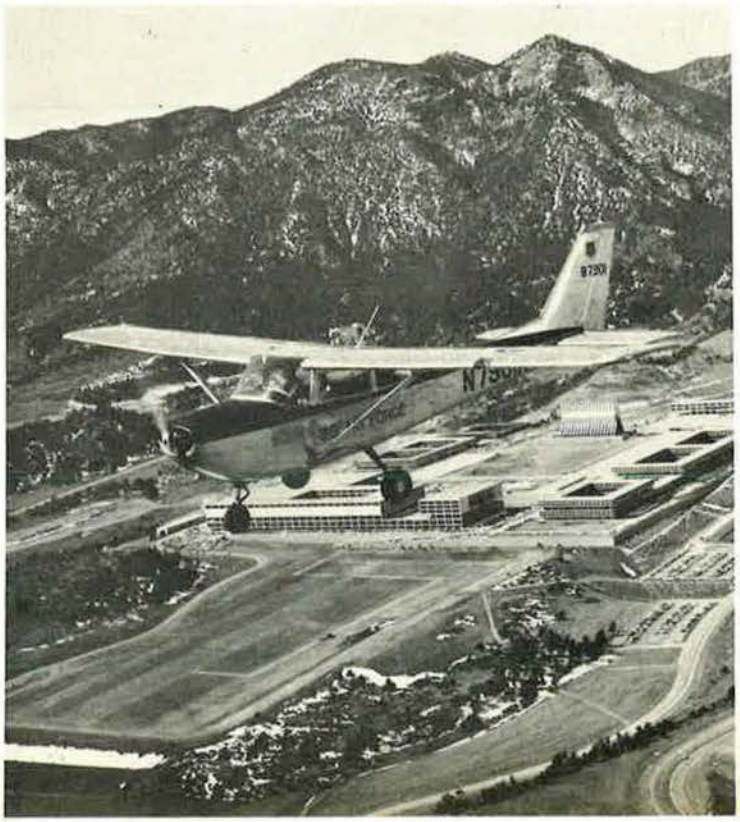
Basic Cadet Training during the cadets' first summer at the Academy is a tough drill. The idea is to condition the cadets physically and to teach them self-reliance. This is the assault course, one of the many training programs new cadets undergo during basic.

Lessons learned today may save your life later on. At left, a cadet prepares shelter and a pine-bough bed during his mountain-survival course. All cadets receive thorough training in escape and evasion techniques needed to survive in hostile terrain and severe climatic conditions.

Current unrest among American youth has not had an impact on the number or quality of Academy applicants. There are more qualified candidates for the Class of 1975 than for any other class in the Academy's sixteen-year history. Recruiting continues to receive high priority. More than 1,000 Air Force Reservists, who work as liaison officers through the Candidate Advisory Service, serve in every state as counselors to young Americans seeking nominations.

More than half of the Academy's graduates have seen duty in Southeast Asia. Three members of the Class of 1959 have been promoted to lieutenant colonel below the zone; 150 graduates have been promoted to major ahead of their contemporaries.

Some measure of the quality of Academy-trained officers' performance may be gained from decorations awarded to graduates: six Air Force Crosses; 128 Silver Stars; four Legions of Merit; 1,194 Distinguished Flying Crosses; and more than 10,000 Air Medals. In addition, Academy graduates have brought down a total of 14½ MIGs in the Vietnam War. ■



The Academy's flying training program, started in 1968, includes 36½ hours of instruction for a private pilot's license and is open to senior cadets. Here a single-engine T-41 used in the flying training course cruises over the Academy complex.

A Separate Operating Agency

Headquarters Air Force Reserve

IN RESPONSE to Secretary of Defense Melvin R. Laird's call for "increased reliance on the combat and combat support units" of the Air Force's Reserve and Guard forces, accelerated modernization of the Air Force Reserve is taking place, including the assignment of new missions and aircraft.

The recent introduction of the A-37 jet attack aircraft into the Reserve inventory moves the Reserve more deeply into the area of Special Operations Forces. Tactical air support units fly U-3A and O-2 light reconnaissance aircraft.

Conversions are continuing from the older C-119 Flying Boxcar and C-124 Globemaster transports to a newer generation of C-130 Hercules turboprop aircraft with a tactical mission. A similar transformation is taking place in the area of air rescue and recovery. The HU-16 Albatross amphibians are giving way to HH-34 helicopters. Other Reserve rescue units fly the HC-97.

The successful associate program, started in Fiscal Year 1968, is being extended beyond the C-141 StarLifter transports and the C-9 aeromedical evacuation units, to the new C-5 Galaxy airlift squadrons. Under the associate concept, Reservists fly with active-duty Military Airlift Command units, augmenting their crews or forming all-Reserve crews. Last year the Reserve contributed more than a quarter million crew-hours to MAC operations.

The Air Force Reserve also operates two tactical airlift training squadrons, which provide flight training for active-duty, Reserve, and foreign crew members transitioning into the C-130A and C-119 aircraft, and transition training for active-duty and Reserve crew members in the C-130A.

During 1970, flying units of the Air Force Reserve flew 10,186 missions, airlifting 20,282 tons as a by-product of training requirements. This represents 57,338 flying hours and 45,507,774 ton-miles. Among other highlights of 1970:

- The Reserve flew some 18,000 hours in support of Southeast Asia. This translates into 23,000,000 ton-miles of cargo and 1,000,000 passenger-miles of air operations.
- The Reserve flew 115,000 ton-miles and a quarter of a million passenger-miles to reduce the human suffering associated with Hurricane Celia.
- The Reserve participation in aeromedical evacuation flights totaled 1,250,000 passenger-miles.
- The Reserve air-dropped 64,000 paratroopers, including a significant part of the Army's airborne school students.

Maj. Gen. Rollin B. Moore, Jr., was named Commander, Air Force Reserve, in 1968. A Californian who won wings in 1940, he has, on active and Reserve duty, held numerous operational and staff posts in flying training, air defense, and airlift. In 1968 the Reserve airlift wing he commanded was called to active duty with the Military Airlift Command. The same year, General Moore was named Commander, Air Force Reserve. Among other assignments, he has served as a member of the Tactical Air Command Reserve Forces Policy Committee and the US Air Force Reserve Forces Policy Committee, the latter from 1961 to 1964.

An Air Force Reserve rescueman signals pickup point for an HU-16 amphibian during a practice mission. The HU-16 is to be replaced by the HH-34 helicopter as the AFRES primary rescue craft.

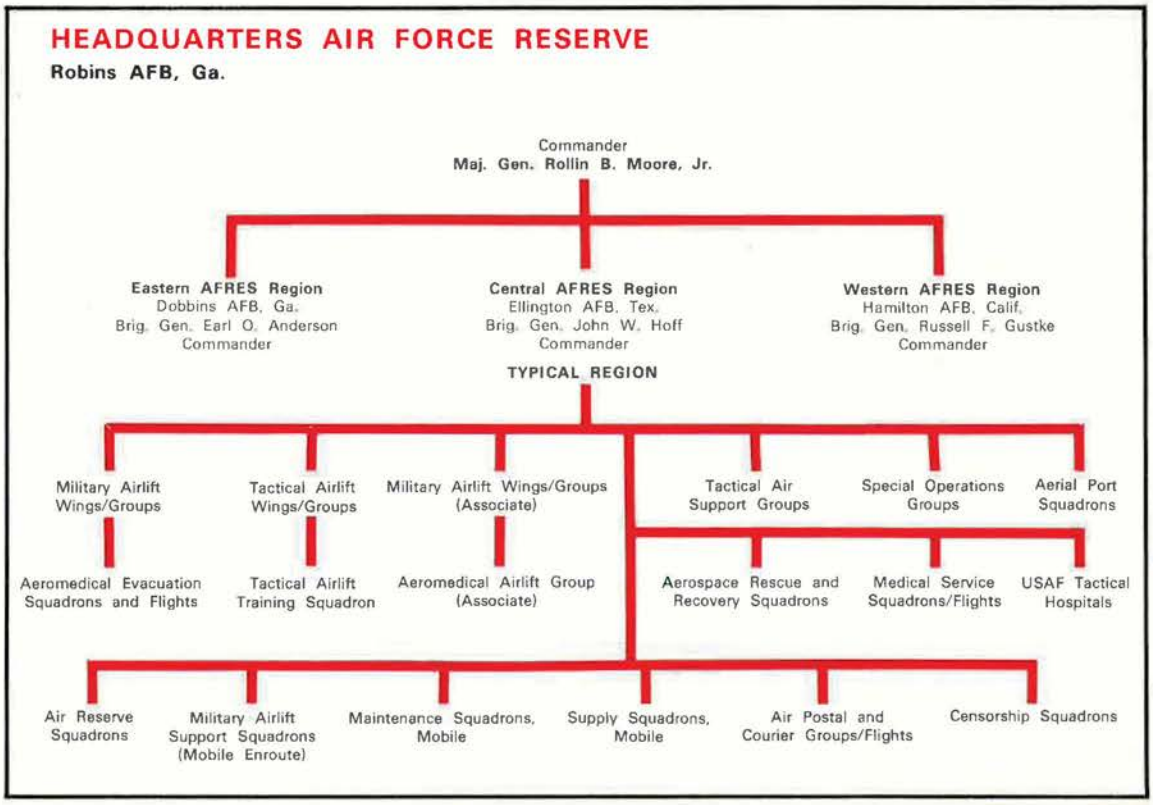
The Air Force Reserve includes four basic medical services organizations. There are more than 120 medical service flights and squadrons, located at most Air Force hospitals and dispensaries, providing a variety of professional services.

Aeromedical evacuation flights and squadrons supporting MAC assist in worldwide medical airlift, while TAC-gained aeromedical evacuation squadrons, known as TAMES, are designed to airlift casualties from combat zones.

Reserve dispensaries and hospitals are integral parts of Reserve flying units.

Air Force Reserve has other, nonflying units administered by AFRES. These include:

• Maintenance Squadrons (Mobile) that provide maintenance and crash-damage repair assistance to USAF aircraft and augment USAF Logistics Command (AFLC) support.



HH-34 chopper, shown unloading troops in Vietnam, will be flown by Air Force Reserve. The switch to the HH-34 will mark the first time the Reserve has been equipped with helicopters.

These units have a maintenance capability for bare-base (air base with little or no support facilities) operation.

- Supply Squadrons Mobile (Support) that furnish direct supply support to Maintenance Squadrons (Mobile). These units also have bare-base capabilities and augment theater supply requirements. Specialized supply assistance is furnished during critical surge periods.
- Military Airlift Support Squadrons (Mobile En Route) that are used for en-route and turnaround maintenance, forward supply support, and terminal services for airlift forces along new emergency air routes and airlift command posts, to augment MAC operations.
- Aerial Port Squadrons to furnish cargo, mail, passenger, and patient-handling services for transport aircraft at their assigned locations.
- Air Postal and Courier Units that provide complete postal and security courier services and immediate assistance and augmentation of the worldwide military postal and security courier network.
- Communications Flights (Support), assigned to selected bases to operate and maintain fixed ground communications in support of Reserve flying activities. USAF Communications Service (AFCS) is the gaining command in the event of recall to active duty.
- Civil Engineering Flights that supply specialized civil engineering capability for tactical and special air warfare units and special contingency requirements on short notice or in support of bare-base operations. ■

For years C-119s operated by the Air Force Reserve have supplied airborne support for the Army. C-130s will replace Flying Boxcars in the same mission.

Inside a C-141 mockup, and using a dummy patient, a new in-flight traction device is demonstrated for Reserve Flight Nurse "Kelly" Sanborn.

Combat-Ready Partner to Several USAF Commands

The Air National Guard

REORGANIZATION, reequipping, and retraining are the key words as the Air National Guard modernizes and strengthens its citizen-airmen force to be fully combat-ready and prepared for an immediate response to any emergency.

Comprising nearly 87,000 officers and airmen serving in 971 flying and support units located throughout all fifty states, the District of Columbia, and the Commonwealth of Puerto Rico, the Air National Guard is today undergoing its most extensive face-lifting since the end of World War II.

The actions reflect sweeping changes in national defense strategy—reductions in the size of the active force, new emphasis upon the Air Guard and Reserves as "the initial and primary source for augmentation of the active forces in any future emergency," and the introduction of faster, more sophisticated aircraft to the Air Guard inventory.

One result is a reorganization and aircraft-conversion program affecting forty-eight Air Guard flying units in 1971–72. The modernization program brings new missions to a number of units, as well as the first F-4, RF-4, F-100D, F-105D and F, and C-130 aircraft into the Air Guard.

In the words of Maj. Gen. Winston P. Wilson, Chief of the National Guard Bureau: "The future looks bright! The Air Force is putting on our flight lines the equipment we need. Now it's up to us to produce. I have no doubt about the outcome. . . . Air Guardsmen across the country have been waiting too long for this opportunity."

Secretary of Defense Melvin R. Laird set the stage for today's conversion program when, in

Maj. Gen. Winston P. Wilson joined the Arkansas National Guard in 1929. During World War II, he commanded a photo-mapping squadron and served in reconnaissance staff positions. Called to active duty in 1950, he directed the Air National Guard for ten years. He was appointed Chief of the National Guard Bureau in 1963, the first Air National Guardsman to hold that post.

Maj. Gen. I. G. Brown won his wings in 1942 and served during World War II in air transport. After his return to civilian life, he was named Chief of Staff, Arkansas Air National Guard in 1950. Recalled to active duty during the Korean War, he has served in Aerospace Defense Command and as Executive Secretary of the Air Reserve Forces Policy Committee. He was appointed to his present position in August 1962.

Minnesota Air Guard F-102 fires a Falcon missile in simulated "kill" of an enemy bomber during Aerospace Defense Command's William Tell weapons meet.

an August 1970 memorandum, he called for an increase in "the readiness, reliability, and timely responsiveness of the combat and combat-support units of the Guard and Reserve."

To achieve that objective, Mr. Laird directed that "a total force concept will be applied in all phases of planning, programming, manning, equipping, and employing of Guard and Reserve forces."

Maj. Gen. I. G. Brown, Director of the Air National Guard, points out that in line with the "total force" concept, "the Air Guard represents a major source for rapid augmentation of the USAF's Tactical Air Command, Aerospace Defense Command, Military Airlift Command, Air Force Communications Service, and numerous other Air Force organizations."

Tactical Air Command Role

From its combat flying organizations, for instance, the Air Guard can provide the Tactical Air Command with eight fighter wings, three reconnaissance wings, three refueling wings, and an airlift wing, as well as four special operations groups, three tactical air support groups, an electronics warfare group, and other support and training units, including two combat crew training groups.

These units are building toward operational readiness, honing their skills and techniques to a sharp edge through frequent participation in joint exercises. A typical one, Punch Card, takes place in Alaska each year and involves ANG fighter, refueling, airlift, and weather reconnaissance groups in conjunction with Army ground units.

Three tactical air support groups, complemented by tactical control groups with sophisticated communications and electronics equipment, now give the Air Guard a capability to provide the full range of air and ground command and control systems essential to field exercises.

Last year, to make maximum use of these resources, the Air Guard formed two tactical forces planning groups—one serving TAC-gained units east of the Mississippi and the other for units west of the Mississippi. The two groups plan and conduct quarterly and annual participation in realistic, tactical exercises.

Replacing the last of its vintage F-84 and F-86 aircraft with late-series F-100s, F-4s, and A-37s, the Air Guard is rapidly updating its tactical fighter force.

More Than Half the ADC Force

The story is much the same for the four ANG fighter-interceptor wings assigned to the Aerospace Defense Command, which has responsibility for perimeter air defense along the nation's northern border and the eastern and western coastal regions.

Illinois ANG tanker refuels Air Force F-4 near Rhein-Main Air Base, Germany. Operation is year round.

ANG Electronics Installation Squadrons perform vital missions, on voluntary tours, for the Air Force in SEA, Europe, and Turkey.

ANG nurse attends air-evac patient. Med-evac is worldwide ANG job.

For nearly a decade, Air Guard pilots have been standing around-the-clock alert as active partners on the USAF's air defense team. Today, Air National Guard units comprise more than fifty-nine percent of the total ADC force in the United States.

They are "pros" in the business of air defense. Competing last fall against hand-picked teams in ADC's 1970 William Tell fighter-interceptor weapons meet, an Air Guard unit from North Dakota topped ADC and Canadian Armed Forces teams in the F-101 competition; a Minnesota ANG team bested two other Air Guard competitors in the F-102 category; and the Air Guard boasted the highest scoring aircrew in the meet, took second, third, fourth, and fifth places in overall team scoring, and had the highest scoring team in the munitions-loading competition.

Global Airlift Responsibilities

In yet another augmentation area, four Air National Guard wings assigned to the Military Airlift Command carried more than 21,214 tons of cargo, 102,158 passengers, and 1,199 patients in their C-97, C-121, and C-124 aircraft on Stateside and overseas missions during 1970.

These missions bring a double return on the dollars invested in the Air Guard by the Air Force and the taxpayer. They give ANG crews realistic global airlift-mission training while transporting cargo and personnel for the armed forces on a daily basis.

Special airlift activities this past year included support of scientific teams studying the solar eclipse; support for an extensive governmental underseas ecological research project near the Virgin Islands; providing airlift for US Navy Underwater Sound Laboratory experiments in Lake Tanganyika, Republic of the Congo; and a regular shuttle of personnel and equipment supporting Strategic Air Command bases.

This year, Operation Creek Guardlift will place ANG personnel and aircraft on station in Spain to provide scheduled passenger airlift for USAFE.

Creek Guardlift is patterned after Operation

Armored personnel carriers wait on the ramp for loading aboard this Georgia Air Guard C-124.

Minnesota ANG weapons-loading team handles tricky job of stowing Falcon missile aboard munitions bay of an F-102.

Hill AFB, Utah, is a site for training of ANG personnel in the art of stringing power lines.

Creek Party, which entered its fourth year with ANG refueling units (on a nonmobilized basis), rotating crews and aircraft to Rhein-Main Air Base, Germany, where they provide in-flight refueling for USAF units in Europe.

A Variety of Other Missions

Other Air Guardsmen are involved in comparable activities. Volunteers, for instance, from nineteen ANG electronics installations squadrons augmented active-duty forces in removing and installing communications, electronics, and meteorology equipment in Turkey, saving the Air Force more than $1 million in contractor fees. In recent years, these squadrons have provided manpower for similar projects in Europe and Southeast Asia.

Sixty-man Prime BEEF (Base Emergency Engineering Force) teams have been created within the ninety-two newly organized ANG civil engineering flights. Highly mobile, the teams can be deployed to any point in the world within seventy-two hours. Last year, they carried out maintenance and improvement projects at USAF bases throughout the country as part of their annual active-duty training. This year, a number of the teams will deploy to air bases in Europe to provide vital engineering services while on their annual field training.

The list grows and is multiplied many times over when the Air Guard's special role in support of state and local government is taken into account. These "state" missions—ranging from support of Guard forces on civil-disturbance duty to air-dropping hay for snowbound cattle —are a daily reflection of the Air National Guard's "ready now" posture.

As it modernizes for increased responsibilities in the 1970s, the Air Guard is keeping *people* foremost in its planning and operations. An aggressive recruiting program that places priority on the enlistment and retention of experienced personnel aims to assure that the Air Guard is constantly qualified and ready for whatever service is needed. ■

A Separate Operating Agency

Air Reserve Personnel Center

PERSONALIZING the administration of its half million "customers"—Air Force Reservists not on active duty—has become the Air Reserve Personnel Center's (ARPC) major goal, second only to its primary mission of mobilization.

To maintain a mobilization capability, ARPC continues to perform all types of personnel actions and to search for newer and better ways to do the job. At the same time, it has launched an all-out revitalization effort aimed at giving the individual reservist more opportunity for participation, a greater voice in his own program, and a more active role in the Air Force "total force" concept.

Individual reservists and the Air Force will benefit from many changes made at ARPC during the year. Last July, a new Directorate of Individual Reserve Programs was established at ARPC to provide information and assistance to major commands in meeting their Air Force Reserve recruiting requirements. The ARPC Office of Information took over management of the Air Force Reserve Information Squadrons and Flights throughout the country.

ARPC Vice Commander, Col. Willard V. Stukey, briefs visiting Australian defense official, Stephen Barrie, on microfilm data-retrieval system in use at the Air Reserve Personnel Center.

Col. Benjamin S. Catlin III was named Commander of the Air Reserve Personnel Center in 1970. He completed pilot training in 1944 and flew B-29s in the Pacific during World War II. After postwar assignments in both strategic and tactical airlift, he moved to Headquarters, TAC, as Deputy Chief of the Operations and Training Division. Following a tour in Vietnam, where he flew 169 combat missions as commander of Advisory Team #1, he served as executive to the Chief of Air Force Reserve at Headquarters USAF, until assuming his present position.

In September 1970, the ARPC Staff Judge Advocate assumed responsibility for the Judge Advocate General Area Representatives (JAGAR) program. Last October, the ARPC Chaplain came on duty, and responsibility for the Chaplain Area Representatives (CHAPAR) and individual chaplains not assigned to the CHAPAR program or to Reserve units was transferred to the Center.

The Information Program involves Air Force Reserve information officers whose special public-information relations and community-rela-

Reservists from around the country are encouraged to visit the Center to review their personnel records. Reserve airlifts make the trips possible.

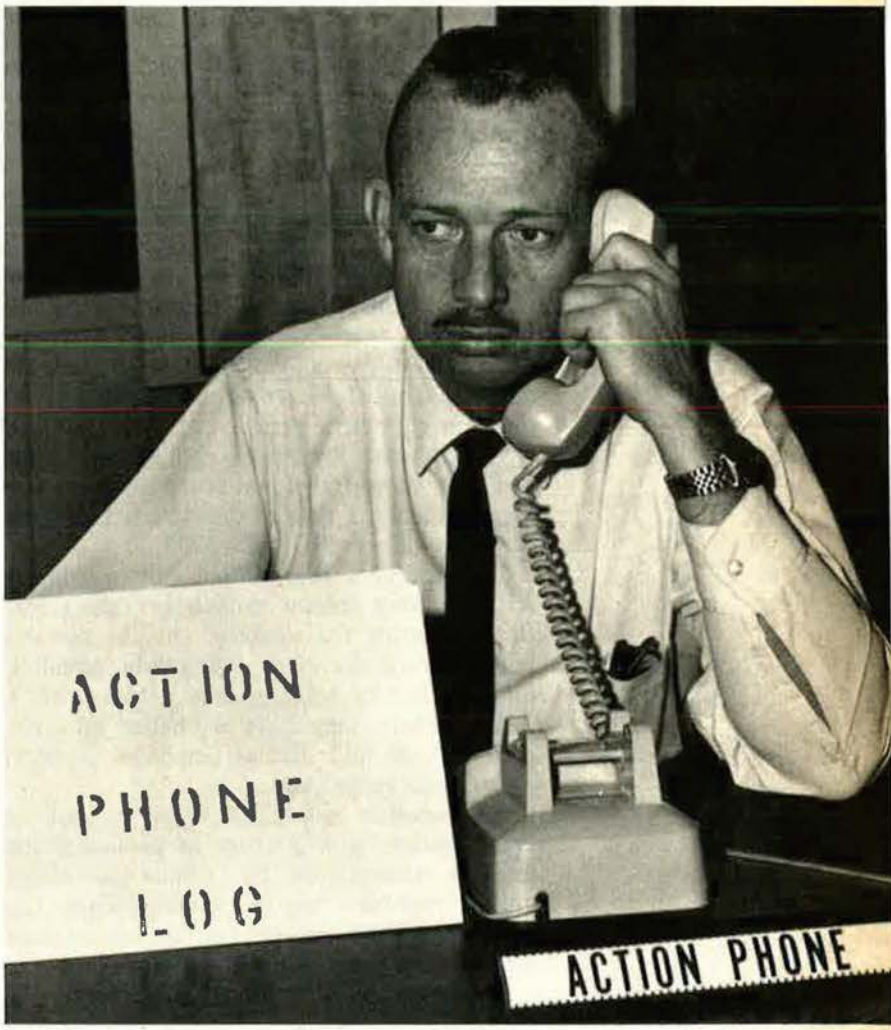
tions projects provide Reserve training and make use of their talents in furthering Air Force objectives.

In the JAGAR program, Air Force Reserve legal officers perform their Reserve duties by providing legal services for military personnel and their dependents who do not have access to active-duty legal officers. Liaison with ARPC and with active-duty Air Force bases is provided by coordinators in various geographical areas of the country.

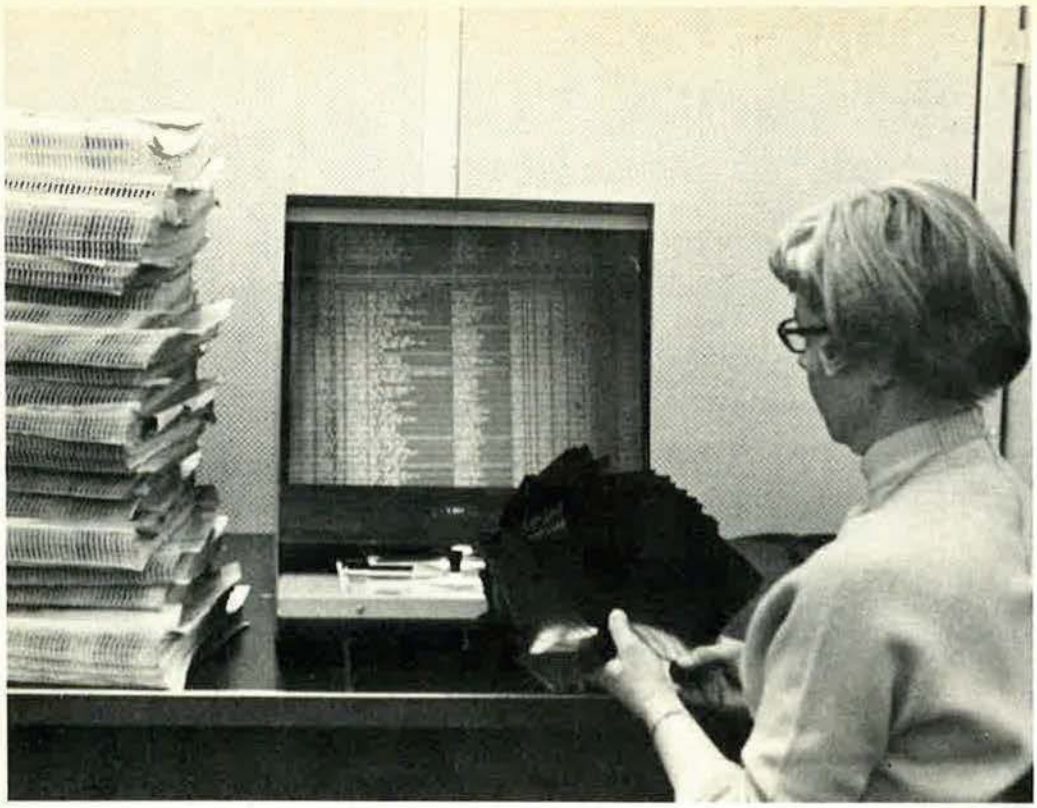
Individuals in the CHAPAR program serve as chaplains in areas where active-duty chaplains are not available, conducting funerals, counseling families, visiting patients in hospitals, and other such duties. The individual Reserve chaplains with mobilization assignments in major air commands also look to the ARPC Chaplain for career advancement through assignments, through schools, and through other training.

Individual Air Force Reservists, who may have felt they were overlooked because they did not belong to units, should have reason to change their minds this year. ARPC's emphasis is on better service and better communication.

To give the individual more voice in Reserve policy-making, a new Air Force Reserve Policy Council has been established at ARPC. This will open an avenue of communication already available to reservists who are assigned to units and major commands. The Council solicits suggestions for better use of the Air Force Reserve and submits recommendations to the USAF Air Reserve Forces Policy Committee. The Council held its organization meeting in December 1970, and the first regular business meeting this month.



ARPC's "Action Phone" allows reservists to get answers fast without having to go through the Center switchboard. The line is manned seven days a week.



At left, ninety pounds of paper and 9,200 pages of records. In the lady's hands, a batch of microfilm on which is recorded all the data in the load of paper. The entire roster of Air Force Reserve personnel appears on forty-one sheets of 4x6-inch film.

A new "Action Phone," weekend service, and monthly airlifts by Reserve units are among other changes aimed at providing better service for the reservist. "Action Phone" is a direct commercial line that bypasses the Center switchboard and goes directly to the man with the answers. Introduced to solve the all-too-frequent problem of locating the proper individual, Action Phone is manned every day other than official holidays from 7:15 a.m. through 3:45 p.m. (MST) and on Tuesday evening and Thursday evening until 7:00 p.m. If a question cannot be resolved at once, it will be answered either by return call or mail within two duty days. Individual reservists have been urged to make a note of the Action Line number—Area Code 303, 825-2508.

For reservists who cannot call or come to ARPC during regular duty hours, the Center is open during the weekend and the two evenings during the week. Regularly scheduled monthly airlifts bring groups of reservists to ARPC where they have a chance to review their records and discuss personnel problems with Center technicians.

Still another communications channel has been opened, with a series of personnel conferences meeting at the Center to discuss mutual problems and to exchange ideas. Last October, ARPC initiated the first annual interservice conference of Reserve Personnel Center commanders, with all branches of service represented. The US Army Administration Center in St. Louis, Mo., will be host to the second meeting this year.

Personnel officers throughout the country came to ARPC in December to discuss better communications and to exchange ideas for meeting current and future demands on reserve personnel management. Other meetings and visits to and from ARPC are planned to keep these communications lines open.

Meanwhile, ARPC continues to streamline its mobilization and personnel management procedures. Its most recent tool is microfilm. The Center's 9,200-page roster of Reserve personnel has already been switched to microfilm, reducing the report from ninety pounds of computer printout paper to three ounces of film. The change is saving the Air Force $26,500 a year.

A ninety-day study to determine feasibility of recording master personnel records on microfilm was completed last fall, and results are now being evaluated. Conversion of the half million records to microfilm could result in space savings of ninety-seven percent, and also could drastically reduce costs of personnel management.

Other new ideas are still in the planning stage. Col. Benjamin S. Catlin III, ARPC's Commander since February 1970, is determined that the Center shall be the first to try out new procedures, to become the proving ground for important new ideas. Under his leadership, the Air Reserve Personnel Center and the individual Air Force Reservists are moving toward greater responsibility in the Air Force "total force" and in the nation's defense structure. ■

A Separate Operating Agency

Air Force Accounting and Finance Center

TWENTY years ago the Air Force Finance Center was established in Denver, Colo., as a separate operating agency of the Air Force to supervise the operation of pay and finance matters for USAF. Fifteen years ago the accounting function was transferred from Headquarters USAF, and the Center took its present name—the Air Force Accounting and Finance Center (AFAFC).

During this period of two decades, the Air Force has forged ahead with missile weapon systems, supersonic aircraft, new management systems, and a thousand and one dramatic programs and revolutionary ideas. Right in step with the more glamorous advances in hardware and programs, the Center has moved forward with programs of equal significance to the Air Force mission and its personnel.

Only recently, in 1968, with the assignment of Brig. Gen. Edwin S. Wittbrodt to the Center as Assistant Comptroller of the Air Force for Accounting & Finance, did responsibility for systems policy come to the Center from the Pentagon. General Wittbrodt is concurrently the Commander of AFAFC.

With the addition of this function, the mission of the Center now covers four broad areas —development of systems concepts, specifications, and techniques; responsibility for systems policy guidance and technical assistance to the worldwide network of accounting and finance offices; provision of effective fiscal data to USAF function and program managers and to other federal government agencies; and executive management of a variety of DoD and USAF centralized accounting and pay programs.

Centralization is a key word at the Center, in that it is the home office for a number of centralized accounting and finance activities. AFAFC centrally pays all allotments deducted from members' paychecks. These may go to dependents, banks and saving institution deposits, insurance accounts for both commercial and government coverage, or to a number of other possible allottees. It centrally issues all US Savings Bonds bought by Air Force members through the payroll-deduction plan. All Air Force Reservists and Air National Guardsmen are paid regularly from the Center through the centralized Air Reserve Pay and Allowance System (ARPAS). More than a quarter of a million retired Air Force members receive their paychecks monthly from AFAFC. Air Force members serving in Europe (USAFE) receive their semimonthly paychecks directly from Denver by airmail. Over a million checks and bonds a month are computed, printed, and mailed to points all over the world through the centralized pay programs.

Air Force members assigned to Southeast

Brig. Gen. Edwin S. Wittbrodt is from Michigan and a graduate of the Industrial College of the Armed Forces. He started his military career as an Army enlisted man in 1941. During World War II he served in Europe and the US as an Army budget officer. He transferred to the Air Force in 1949 and began a series of budgetary and comptroller assignments in Air Force Headquarters, Northeast Air Command, and Air Force Systems Command. He is a 1964 graduate of the Managerial Policy Institute, University of Southern California. Prior to assuming his present post in 1968, he was Director, Accounting and Finance, Hq. USAF.

With the flood of checks and savings bonds that leave the Center every month—more than a million pieces of mail —it makes sense for the US Postal Service to set up shop right at the Center. After processing by postal employees, the mail is loaded directly into postal vans and dispatched to destinations.

When AFAFC's JUMPS program goes into full operation, military pay and leave information for every person in the Air Force will be stored in computers.

Asia (SEA) have their military pay records (MRPs) maintained in Denver. Their individual monthly pay computations are sent to SEA for printing and distribution of actual paychecks. Including USAFE and SEA, nearly twenty percent of all Air Force members' MPRs are maintained at AFAFC. The Directorate of Military Pay Operations, which maintains the records, is manned by about one-third of the 2,300 military and civilian personnel at the Center.

Although centralization of military pay procedures was—and continues to be—a big job, the ultimate in centralization will come by the end of 1972, with the implementation of the Joint Uniform Military Pay System (JUMPS), the major advanced system under development at AFAFC. Under this DoD-directed program, all Air Force military pay and leave accounting will be maintained and computed at the Center. A sophisticated network of electronic communications provides the information link between the worldwide Accounting and Finance Offices and AFAFC, which will maintain the pay and leave records on its giant IBM 360/65-360/30 computer complex. Development, testing, and partial implementation of the JUMPS program is on schedule, with one of three major milestones already completed.

The Directorate of Accounting Operations, charged with the responsibility of accounting for all congressional appropriations to the Air Force, also relies heavily on the computer complex for the validation and preparation of accounting reports. These reports, based on data submitted from all USAF commands and agencies on a continuous basis, are analyzed, consolidated, and forwarded to program and fund managers at many higher levels of the federal government, providing more effective management of critical funds.

The pay and allotment accounts of all retired Air Force members, as well as the pay accounts of the total Air Reserve Forces, are maintained by the Directorate of Reserve and Retired Pay, a responsibility that includes over a third of a million accounts. This is also a worldwide program, since retired and Reserve Forces personnel can and do live anywhere in the world.

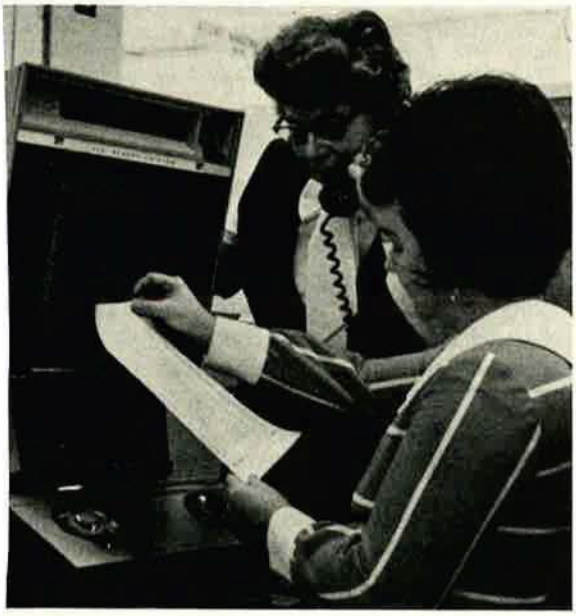
AFAFC has a number of smaller, but singularly important, programs in its mission responsibility. The Uniformed Services Savings Deposit Program, whereby overseas members may invest funds in a federal savings plan yielding ten percent interest, is also maintained on the Center computer. More than $350 million has been deposited in this program since it

Nerve center of AFAFC is the computerized Telecommunications Center, which operates links between AFAFC and the worldwide network of Accounting and Finance Offices. The 1954th Communications Squadron of Air Force Communications Service handles all tape, punch-card, phone, and narrative message traffic with more than 99 percent accuracy.

started in September 1966. Currently, over 42,500 participants have deposits of more than $115 million in savings.

Foreign Military Sales is another area of responsibility that AFAFC manages for Hq. USAF. More than fifty countries have accounts that total nearly $3 billion in contracts. In addition, nearly 1,000 other International Accounts, mostly emergency or casual assistance accounts, represent another $1,750,000 that must be accounted for. All of the accounts are maintained on the AFAFC computer, providing for more rapid, accurate, and effective control.

Nearly 10,000 miles of magnetic tape at the Center contain current and historical data on financial and accounting operations at AFAFC. A tape library maintains tapes in optimum temperature and humidity conditions.



AFAFC gets thousands of queries a month. They are quickly answered, thanks to microfilm file that records allotment and savings bond data.

As the only agency that directly affects the well-being of every member in the Air Force family, and the pocketbooks of the American taxpayer, AFAFC maintains a record of 99.94 percent in accuracy and 99.96 percent in timeliness in its globe-girdling pay and accounting functions.

As the space-age Air Force moves forward with its mission of national defense, AFAFC will continue to drive ahead with increasingly effective accounting and financial systems as a vital part of the total Air Force mission. ■

A Separate Operating Agency

Air Force Aeronautical Chart and Information Center

NOT AN airplane flies from this installation, yet every US military plane, regardless of location, has on board a product produced here. The Air Force ICBM trajectories and those of the fleet ballistic missiles incorporate our products as well.

What are these vital products? Aeronautical and target charts, FLIPs, and geodetic/geophysical data produced by the US Air Force Aeronautical Chart and Information Center (ACIC), St. Louis, Mo.

This Separate Operating Agency, with headquarters and production plant on the grounds of an old Civil War arsenal near downtown St. Louis, was organized to meet the requirements of all Air Force commands and other military organizations in the Department of Defense. ACIC has squadrons and detachments located in Alaska, Hawaii, Germany, England, the Philippines, Okinawa, the Canal Zone, Japan, and Southeast Asia, to respond rapidly to the requirements of the field.

Chart making is a painstaking art in which ACIC trains Air Force military and civilian personnel. Above, one of the classes in ACIC's six-month training program.

Col. Byron L. Schatzley has been Commander of the Aeronautical Chart and Information Center since August 1970. During World War II, he flew forty missions as a B-26 bombardier in Europe. Since the war, his career has been in photo intelligence and related intelligence activities. He has served in various intelligence capacities in Japan, at Wright-Patterson AFB, at the Rome Air Development Center, and as Director of Collection for the Assistant Chief of Intelligence, Headquarters USAF. From 1967 to 1970, he was Deputy Commander, 548th Reconnaissance Technical Group in PACAF.

From its detachment in Washington, D.C., ACIC provides liaison with and obtains data from other intelligence and charting agencies.

The Center's production is divided into four major programs: navigation and planning charts, Flight Information Publications, air target materials, and special products.

The navigation and planning series include the Joint Operation Graphics, Tactical Pilotage Charts, Operational Navigation Charts, Jet Navigation Charts, Global Navigation and Planning Charts, Loran Charts, Missile Planning Charts, and DoD Weather Charts.

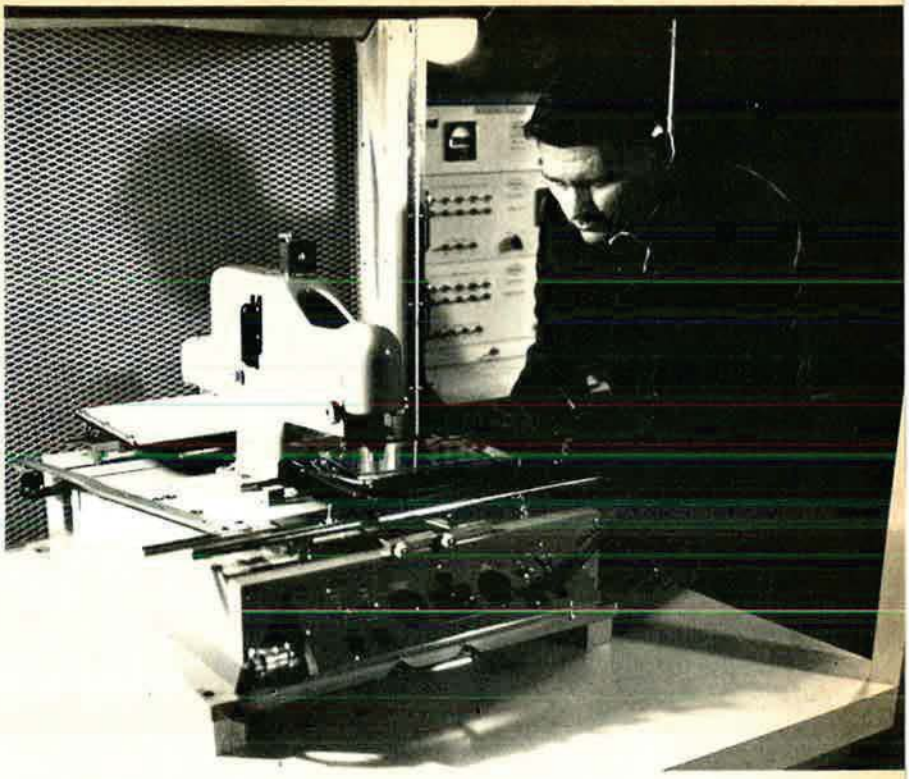
Flight Information Publications (FLIPs) are produced for the planning, en-route, and terminal phases of aircraft operation. The charts cover the entire free world.

Air Target Materials include Air Target Charts, Mosaics, and Missile Target Data Sheets.

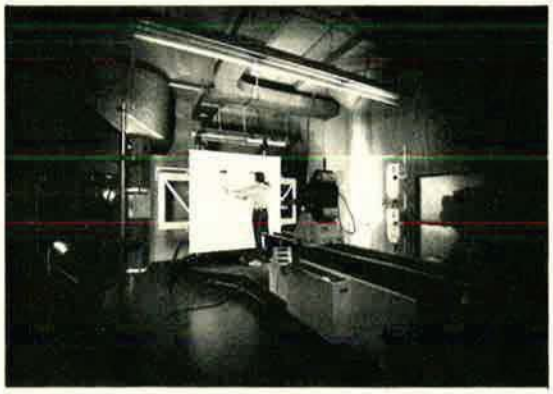
Under the heading of Special Products are the filmstrips and film-chip products supporting automated navigation systems. These miniaturized cartographic items with electronic data computer tapes are used in the F-106, and the Chart Center also produces the color filmstrips that are required by the Navy A-7E and the F-111 aircraft.

Three Department of Defense special data files providing service to all of DoD are housed at the Chart Center: the DoD Gravity Library, the DoD Centralized Library of Aeronautical Charts, and the Free World Air Facility Information.

Charting the earth is not the only assignment given ACIC. Lunar and Martian charting has become another important support function. For the Apollo manned space missions, ACIC has produced hundreds of cartographic items at the request of NASA. These include operation support graphics for lunar orbit, landing, and surface-exploration phases as well as for earth-orbit and recovery operations. Professional scientific and technical skills of almost 4,000 military and civilian personnel are needed to build and distribute the approximately 100,000,000 copies of the thousands of separate items ACIC provides each year to users all over the world.



The moon, object now of man's visitation, is measured here on earth by means of intricate electronic equipment at the Aeronautical Chart and Information Center.



An ACIC photographer prepares a chart for photographing. Many ACIC charts are used in filmstrip and film-chip form for automated navigation systems.

ACIC supports NASA manned space missions with charts and graphics. This ACIC cartographer is "mosaicing" lunar photographs into a single large moon chart.

In addition to support of USAF strike forces, ACIC supplies virtually all of the aeronautical charts and FLIPs used by the US Navy and Army forces operating in or supporting SEA operations.

To keep in step with the ever-changing cartographic career field, ACIC conducts an Air Force cartographic training school for the Air Training Command. Both military and civilian personnel from all commands can receive intensive instruction in the science of chart making.

ACIC works directly with the USAF R&D organizations to ensure that new cartographic and geodetic products are available in time and are accurate enough to support the new air strike and missile systems in development. Also, research and technical development on ACIC equipment and work processes are continually taking place in order to remain one step ahead of the user's demands.

The past year has been noteworthy for the new type, high-accuracy products for target positioning, on an almost real-time basis, that ACIC developed and deployed with US tactical air elements. Also, there were major improvements in products to support strategic air and missile operations. As rapid changes in USAF navigation and strike systems continue to be made, ACIC professionals will provide the charts, film strips, and target coordinates required to support the new systems. ■

A Separate Operating Agency

Air Force Data Systems Design Center

ON MARCH 10, 1971, the Air Force announced that headquarters for the Air Force Data Systems Design Center (AFDSDC) would be relocated from the Washington National Capitol region to Gunter AFB, Ala. All elements of the Center are expected to be in place and fully operational at Gunter AFB by early fall of this year. The move is being phased to provide uninterrupted service to Air Force customers during the brief transitional period. Consolidation of all AFDSDC activities and operations at this new site will produce operating economies, and will enhance the mission effectiveness of the Center.

Since establishment of the Air Force Data Systems Design Center in 1967, the requirements of its customers—the Air Staff agencies—for new automated management systems and products have grown at a rapid pace. It became necessary to establish a means for identifying and assigning relative priorities among the various projects and tasks; to reposture the Center work force so as to respond to the work requirements within the priorities established; and to introduce internal management controls that will permit continuous appraisal of the development and effective use of the Center's manpower resources and skills in its design work.

This need for internal management control over the total workload is being served by the AFDSDC Planning and Resource Management Information System (PARMIS), which was initially installed on the Center's B-3500 computer in May 1970. Improvements to the system have created a sophisticated computer application that will provide managers at all levels with information needed to effectively manage resources, apply related skills, track progress, and meet targets on all projects involving the design, programming, test, and release of computer systems assigned by the Air Staff.

Products of PARMIS include: project and individual workload schedules, status reports, forecast reports, and other specified statistical data. Each of the products has been tailored to serve the specific needs of the individual managers, with summaries produced for top management. Command reviews are scheduled periodically, and status is appraised and evaluated. PARMIS is providing management a new visability on the activity and use of the Center work force, and is contributing measurably to the timeliness and effectiveness of actions inherent in the Center mission.

The Center has established a "Quality Assurance" Program to assure the release—for

Col. Jack M. MacGregor was appointed Commander, Air Force Data Systems Design Center, in 1969. He previously served as Vice Commander. He completed pilot training in 1943 and served as a bomber pilot in the European theater during World War II. Colonel MacGregor resumed a war-interrupted education after the war and graduated from the University of Alabama with a B.S. in accounting, later earning a master's degree in the same field. Among his assignments have been tours with USAFE and PACAF. At PACAF, he was Director of Management Analysis. He has also served with Aerospace Defense Command and with the Joint Chiefs of Staff.

Our most important space project is the voyage to Serendip.

In the eighteenth century, Horace Walpole wrote about three princes of Serendip who traveled in search of treasure.

The princes never found treasure. But they continually came across other discoveries that proved to be even more valuable.

To describe this phenomenon – that of making unexpected discoveries while in search of something else – Walpole coined the word "serendipity."

A useful word.

Today, serendipity is perhaps the most persuasive reason why our nation must continue with a strong, balanced program of space exploration.

Our investment in space has already paid us many direct benefits. Instant world-wide communication. Improved weather forecasting. New and vital means of national defense.

But even more important are the serendipitous applications now emerging from the technological and scientific advances made by our space program.

The techniques, products, and processes we've developed are helping us solve problems in air and water pollution. They're helping us increase the world food supply, control traffic, renew our cities, care for our sick. And the list is constantly growing.

At UTC, where we specialize in rocket propellants and advanced propulsion systems, we are proud of the part we've played in America's space program. And all of us are looking forward to the expected and the serendipitous discoveries to be made in tomorrow's journeys.

To us, in the twentieth century, every voyage into space is a voyage to Serendip.

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Air Force-wide implementation—of "error-free" systems, program documentation, and programs. Several new areas of emphasis were applied under this program:

- Directors preparing the Air Force manuals containing the functional systems and program documentation were required to include specific quality checks in their design and review process.
- A single focal point was established within the Center to perform final checkout of the systems and program documentation prior to field release; and, more importantly,
- A plan for subjecting the systems and programs to an "Environmental Systems Test" (EST) on the AFDSDC computer was instituted for all programs and documentation.

The EST consists of a test run of all related programs loaded into the computer and operating in a multiprogramming mode, thus assuring that the programs operate perfectly without adverse effect on any other programs that are operating on the computer.

During the past year, 431 systems change packages were prepared and tested for the B-3500 application. They represented 3,312 individual programs. Of these, 2,752 were released—an effective release rate (error free) of 83.1 percent. During these Environmental Systems Tests, almost 500 program problems were identified and corrected prior to Air Force-wide release. Statistics indicate that this new EST technique resulted in a fifty-two percent reduction in field problems.

The Computer facility will be significantly expanded at Gunter AFB, to permit more extensive checks on functional system programs during the early design phase, and Environmental Systems Testing.

The Center has on its books a total of 976 approved projects consisting of 2,121 individual work orders. They represent an estimated 565,950 man-hours of work for the next twelve months—designing, programming, testing, and preparing computer systems for release to the field. Some typical projects are: development of software for the functional systems applications; performance of simulation exercises on the various functional systems; modification of major systems, such as the UNIVAC II Standard Base Supply System; design of the Satellite Program for the Air National Guard Supply Accounts; design of a new automated Procurement System; redesign of the Accounting System and design of the related budget systems; and development of new Workload Control and Library, Hardware Diagnostic, and Disk Management Systems.

Computer capability is crucial to the mission of the Air Force Data Systems Design Center. This is the Center's Burroughs B-3500 computer system.

An Air Force Reserve unit has been established at the Center. Reservists assist in planning and programming computer systems and in operating the computers.

AFDSDC's computer systems are adding a new dimension to Air Force management. The full potential of the computer for serving management by enhancing efficiency and reducing costs has yet to be realized. That is the challenge that lies ahead. ■

By early autumn of 1971, the Air Force Data Systems Design Center is expected to have fully moved to its new location at Gunter AFB, Ala. At left, the new headquarters of the Center at Gunter. The Center was established in 1967 to serve needs of Air Staff agencies.

The US Air Force in the 1970s is cooperating with NASA in the development of the Space Shuttle, the reusable manned space transport craft that is expected to reduce payload costs significantly and bring an eventual end to the era of costly "throwaway" boosters . . .

USAF in Space
Via the Coming Shuttle

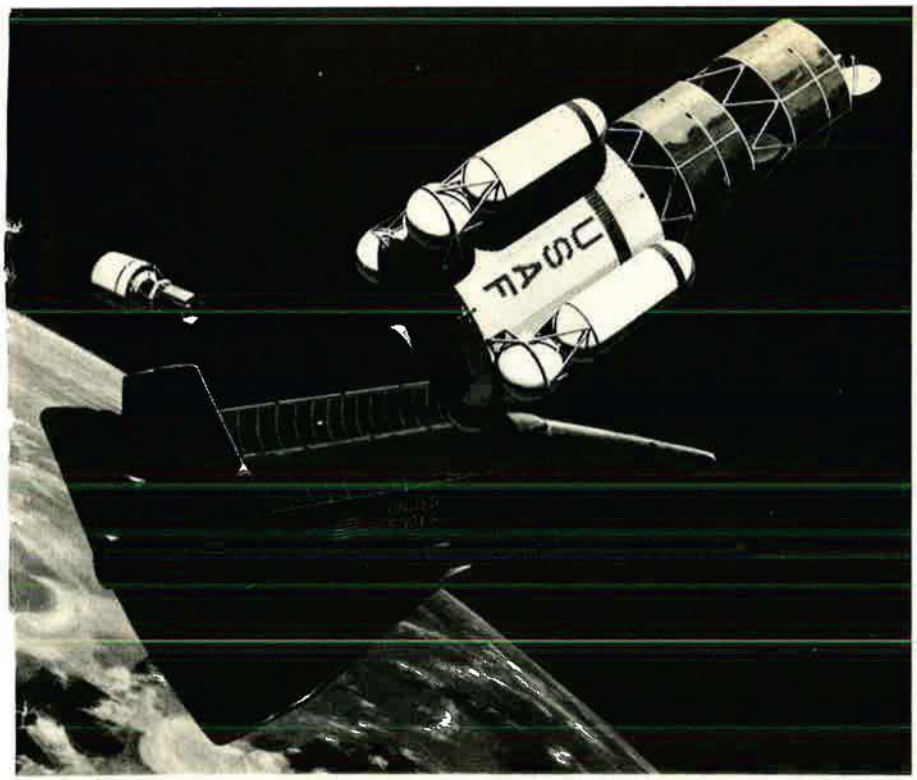
By William Leavitt

SENIOR EDITOR, AIR FORCE MAGAZINE

Research pilot Al Moyles "flies" Shuttle from a cockpit that blends advanced features of both air- and spacecraft. This is part of a Shuttle mockup by North American Rockwell. Data appears on a TV-like screen.

SPACE, in 1971, is to the US Air Force a means, not a mission per se. This is another way of saying that Air Force space planners, in this fourteenth year of the space age—measured from Sputnik—are now veterans in the use of the space medium as the locus of a number of vital military operations that need to be done and which can and are being done more effectively in space than they could be achieved on earth or in the atmosphere.

The list of such operations is well known. It includes a collection of activities ranging from space-relayed communications to patrol of the void to detect nuclear detonations in space. By far the most important military spaceborne activity is satellite observation, designed to keep this country's security planners fully posted on the deployment of weaponry by potential aggressors. USAF hardware in space is unmanned, and—since the death in 1969 of the Air Force Manned Orbiting Laboratory (MOL) project—there is no specific Air Force manned space program, although there's little doubt that planners continue to analyze, on the back burner, ideas and concepts for future Air Force manned space activity.



McDonnell Douglas is studying various shuttling modes for the Air Force. USAF-marked orbit-to-orbit craft could transport satellites from main Shuttle to higher altitudes.

Today's Air Force space emphasis—in keeping with the philosophy of means rather than mission—is on better ways of doing things. "Better," in a period that has seen costs rise spectacularly, and at a time when the public is decreasingly dazzled by manned moon voyages, means "cheaper." And "cheaper" space operations mean, sooner or later, the development and advent of the reusable, manned Space Shuttle. Accordingly, the Air Force is working closely with the National Aeronautics and Space Administration in the planning of a system that, once it goes into regular operation, is expected to sharply reduce, at long last, the costs of space operations.

With the Shuttle, the Air Force believes that the array of complex payloads doing complicated and necessary military jobs not only can be placed into space less expensively but also can be retrieved with relative ease on demand, and can be maintained and repaired. Such flexibility in payloads is sharply complemented by the savings to be expected when the Shuttle can replace the costly expendable boosters that have had to be used to carry men and instrumentation into space.

Shuttle is a NASA program. But when it goes into business—in the late 1970s, or more probably, in the 1980s, assuming its continued acceptance and funding by Congress—it is expected to serve national security needs. And, importantly, in that connection, the Air Force is pleased that NASA has largely accepted Air Force requirements for Shuttle cross-range capability—that is, landing maneuverability for the craft. NASA concurrence was confirmed by Air Force Systems Command chief, Gen. George S. Brown, in his interview which appeared in the April issue of this magazine.

For a time, NASA had been somewhat recalcitrant on this point. But that was in the context of the Space Shuttle's being originally rather tightly hooked up with NASA's own space-station plans. For NASA's purposes, at least at the outset, the need for good cross-range capability for the Shuttle did not seem too vital. But with NASA agreement, the Air Force is much more confident about the military utility of the Shuttle. The agreed-on, initial cross-range capability of 1,100 nautical miles, as General Brown pointed out on these pages in April, "will give [the Air Force] adequate flexibility, in terms of recovery, to perform future military space missions without undue constraints."

A few years ago, before the reusable Space Shuttle idea got going in a real way, and when the expectation seemed to be that "throwaway" boosters would long continue as the only mode for space launching, there was a good deal of talk about the need for extremely sophisticated, "multipurpose," unmanned space payloads. The idea, and it was quite logical at the time, was that—in order to pay off—expensively launched unmanned satellites *had* to work. And since the costs of launching, on a one-chance basis, were so high, it was felt that there ought to be an emphasis on having the satellites do as many jobs as possible and for as long as possible. It made good sense then.

In the view of people close to the Shuttle program, the multipurpose concept still makes sense in the Shuttle context, but in a different way. They point out that, with the Shuttle, a really sophisticated payload designed to do several jobs could be put up for, say, a week or two, to do those jobs, simultaneously or in sequence, and then easily be brought down again to earth. Hardware that didn't work could, of course, be fixed and sent aloft again.

But while the multipurpose idea still holds water in the coming Shuttle era, so does its opposite number—simplicity. Shuttle planners are hopeful that payloads can be designed for "maximum commonality" in civil and military operations and that they can be designed, too, for shorter lifetimes. That would be possible and even advisable in terms of the Shuttle's ability to deploy fresh payloads quite frequently into orbit.

Who would "drive" the Shuttle on military missions? It has to be acknowledged that this is an iffy, even political, question. The Space Shuttle is a NASA program but a program designed to serve national needs, most definitely including military needs. While NASA, under its charter, is responsible for the nation's overall space research, development, and exploration, the Space Act of 1958 specifically provides for military effort in the space field, in the interests of national security. With such legal under-

One of many artists' conceptions by NASA of the reusable Shuttle. The two-stage vehicle would be launched vertically, with both stages returning to earth after performing payload-delivery missions. Shuttle would largely end the "throwaway" booster era.

pinnings, there seems to be no reason why military personnel would not operate military space missions aboard the Shuttle.

By summer 1971, the earlier "phase" studies on the Space Shuttle are expected to be completed, and planners on both civilian and military sides should have a pretty solid idea of the costs and scope of the project. Currently, in the Fiscal 1971 budget, some $80 million is earmarked for vehicle and engine definition and preliminary design and about $35 million for technology studies. The Fiscal 1972 NASA budget request asks for $100 million for vehicle and engine studies and development, $20 million for test facilities, and $25 million for technology studies.

Principal aerospace firms involved are: McDonnell Douglas and North American Rockwell, vehicle studies; Aerojet-General, Rocketdyne Division of North American Rockwell, and Pratt & Whitney, main-engine studies; and Lockheed, Chrysler, and a Boeing-Grumman team, feasibility studies of alternative concepts.

NASA's schedule—which, like all such schedules, is highly flexible —calls for first horizontal test flights in 1976, orbital test flights in 1978, and first operational flights in 1979.

Obviously, 1979 and the early 1980s are still far off, and no one can be absolutely sure of what will happen on the technological-political fronts during the next few years. It is true that the Air Force, once quite sanguine about prospects for a purely military, manned space program, suffered a major setback with the demise of the Manned Orbiting Laboratory project. But if the Space Shuttle flies and does produce the lower-cost space transport operation expected, not only will the Air Force benefit but so also will the whole range of agencies that need spaceborne data collection. There's no question that, in totality, the Space Shuttle will be an expensive development program.

But as conscious as they are of the public and congressional mood, Space Shuttle strategists are likely to couch their arguments for funding in a gradual context. It's unlikely that target dates will be pressed with the kind of urgency that marked the Apollo program. Whether the late 1970s or early 1980s is not so much the question. What is important is that the need for the reusable Space Shuttle concept be accepted on Capitol Hill.

Tempered by experience, Air Force space planners, while assuming acceptance and continued funding, are thinking in terms of a gradual phasing of Air Force missions into the Shuttle. Up to the point when the Shuttle becomes truly operational, the Air Force, by necessity, will continue to use its array of expendable boosters *(see "Gallery," elsewhere in this issue)* to place into orbit the military satellites now serving as eyes and ears for strategic planners and political decision-makers.

Even with the Shuttle initially operational, say in 1979 or 1980 or 1981, not all of the Air Force's space payloads would go aboard the new spacecraft at the outset. Throwaway boosters would still be used for a time. Later there would be a mix, probably, with some military satellites still being launched by conventional boosters and others deployed by the reusable Shuttle. But once the Shuttle had established full reliability, flexibility, and the desired maneuverability, the end of the throwaway-booster era would largely be at hand.

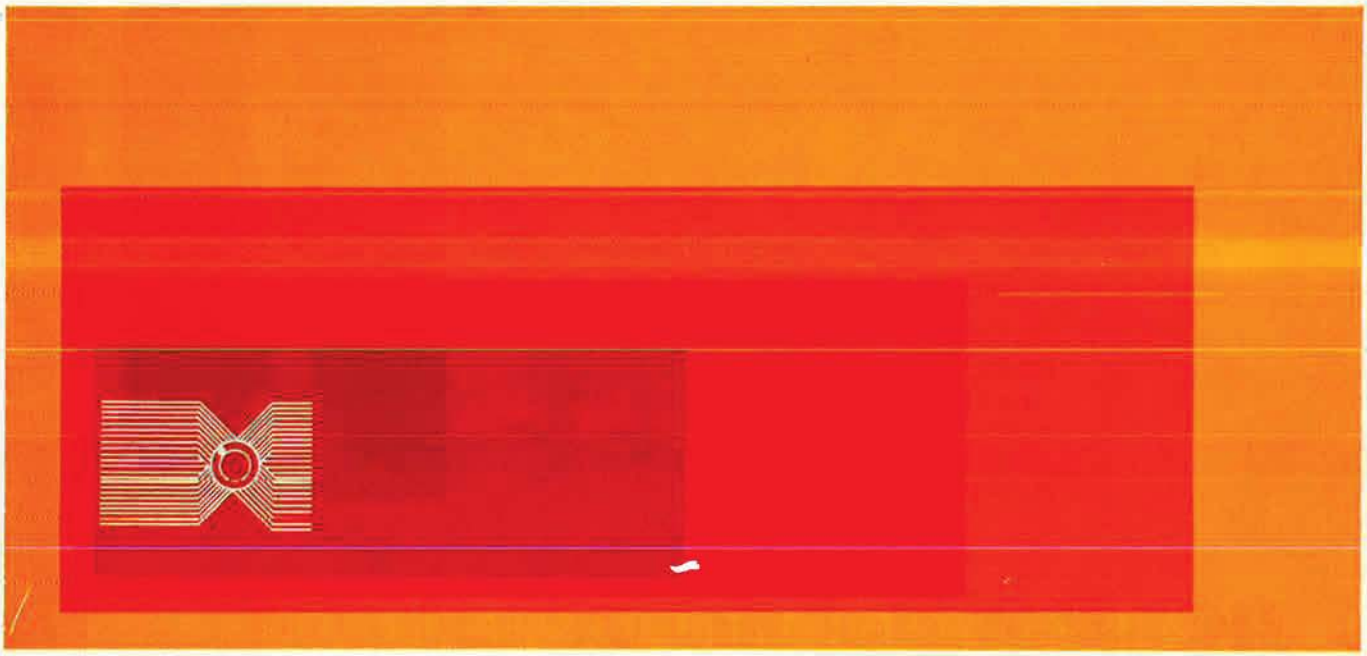
The Air Force's confidence in the future of the Space Shuttle is strong enough to damp down any major modification programs for the current generation of expendable boosters. This is in contrast to a few years ago when Air Force space people were talking about and studying ways to bring down the costs of throwaway boosters. But, of course, if for any reason the Space Shuttle were not implemented, the Air Force would have to take another look at expendable launch vehicles and ways to cut launch and payload costs.

Shuttle is by no means the only new space program in which the Air Force is directly or indirectly involved. NASA's embryonic Skylab space station and the larger space stations to follow are designed to answer nagging questions about the utility of man in space, questions that cannot be answered glibly.

It is well established that man's presence enhances the operation of space systems. But even at this late date, we have no completely reliable data on really long-term human operations in space. As often as such questions have been asked, there are still no definitive answers. What happens to people in zero gravity over a period of months? Will "conditioning" exercises be enough to overcome the deviations from the physiological norms that have been observed among US and Soviet astronauts in space? Will partial or even full artificial gravity have to be arranged for space stations operating for a year at a time? Whether the occupants of future operational space systems are in mufti or military uniform, full answers to these questions will be required. ■

Coming . . .

July AIR FORCE Magazine



AEROSPACE ELECTRONICS

a special report

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AIR FORCE MAGAZINE

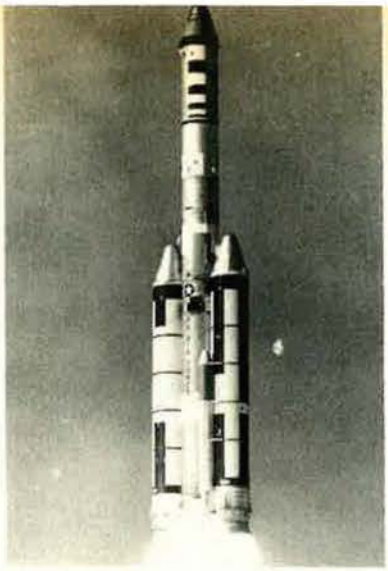
Published by the Air Force Association

On the following pages, AIR FORCE Magazine presents a Gallery of USAF Weapons—brief summaries and photographs of the major weapon systems that the men of the US Air Force use in doing their assigned work . . .

USAF's Weapon Systems

A Gallery of USAF Weapons

The Launch Vehicles



Titan III

Atlas

Scout

Thor-Able III

Of four launch vehicles used by the Air Force, three were derived from ballistic missiles. They are the Titan III, Atlas, and Thor. The exception is Scout, developed as a joint NASA/DoD space research vehicle.

Titan II (LV-4), forerunner of the Titan III (SLV-5), served as the launch vehicle for NASA's two-man Gemini series. With a thrust range second only to that of the NASA Saturn booster, the 108-foot-tall Titan IIIC is used to launch multiple communications and reconnaissance satellites and other heavy payloads. Various payload packages may extend overall height to 150 feet or more. Options available for modifying the core vehicle to meet payload requirements include strap-on motors (IIIC), alternate third stages (IIIB), or strap-on motors without a third stage (IIID), providing a thrust liftoff range of 450,000 to 2,360,000 pounds, and launch weights from 181 to 700 tons. Martin Marietta provides the airframe and system integration, Aerojet-General manufactures the core propulsion, and United Technology Center produces the strap-on motors. USAF has ordered 95 Titan IIIs for deliveries running into 1974 for DoD and NASA use.

Atlas (SLV-3), the nation's first ICBM and booster for NASA's one-man Mercury spacecraft, is now used to launch DoD and NASA orbital and suborbital payloads, alone or in combination with various upper stages *(see below)*. The SLV-3A is designed primarily for use with the Agena upper stage, while the -3C primarily serves the Centaur. Thrust totals 410,000 pounds—350,000 from two boosters and 60,000 pounds from the central sustainer motor. General Dynamics/Convair is the prime contractor, while North American Rockwell/Rocketdyne produces both propulsion systems.

The basic **Thor** IRBM has now evolved into two uprated versions, the Thrust-Augmented Thor (SLV-2A) and Long-Tank Thor (SLV-2H,J), both produced by McDonnell Douglas. In the former, the basic Rocketdyne liquid-propellant motor has been augmented by three or more Thiokol solid-propellant strap-on motors, providing a total thrust of 333,000 pounds, while the latter uses strap-ons plus additional liquid-propellant capacity which does not increase thrust but permits a longer burning time for the main engine, making possible payloads 30 percent greater than for SLV-2A. Both are also used with upper stages to boost satellites and other space vehicles into orbit. NASA Delta boosters use much the same components. Typical payloads include boosting 2,600 pounds into low earth orbit, or 500 pounds to escape velocity. A multipurpose Long-Tank Thor is being developed with capability of employing three, six, or nine strap-on motors.

The **Scout** (SLV-1A, -1B) is a three- to five-stage solid-propellant launch vehicle for orbital high-altitude probe and reentry projects. Ling-Temco-Vought is the prime contractor and systems manager, while propulsion for various stages is produced by Aerojet-General, Allegany Ballistic Laboratory, Thiokol, and United Technology Center. SLV-1A launch weight may reach 37,600 pounds; three-stage SLV-1B weighs 13,000 pounds. The first three stages produce a total of 183,600 pounds of thrust, and the optional fourth and fifth stages up to 6,000 pounds each. Guidance on SLV-1A is by Honeywell; SLV-1B is unguided. The 72-foot-long Scout can place a 320-pound payload into polar orbit, or send 50 pounds to escape velocity.

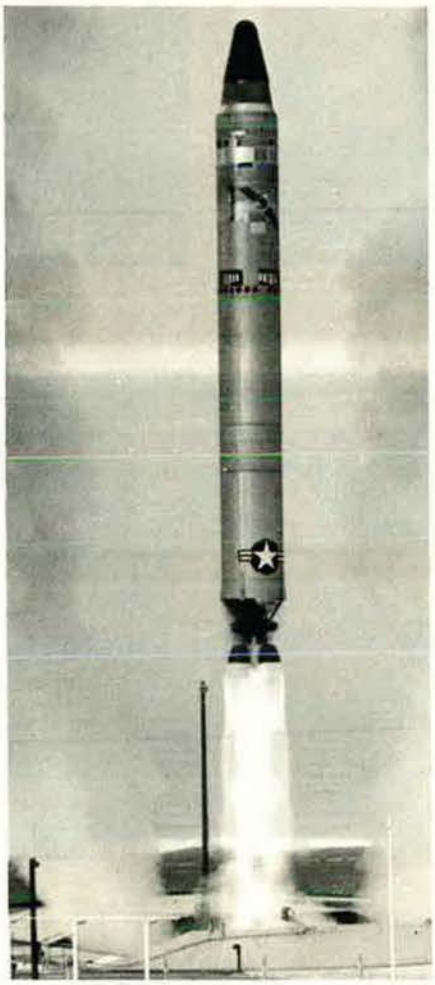
Principal upper stages used in conjunction with these boosters are the Lockheed Agena D, General Dynamics/Convair's Centaur, and the Boeing Burner II. The **Agena** employs a Bell Aerosystems restartable, liquid-fueled engine with 16,000 pounds of thrust, capable of putting a 7,500-pound payload into earth orbit. It is 23 feet 5 inches long, 5 feet in diameter, and at launch weighs 15,000 pounds.

Centaur is the heavyweight among upper stages, with a launch weight of 37,000 pounds. Its two Pratt & Whitney RL-10 liquid oxygen/liquid hydrogen engines produce 30,000 pounds of thrust, enabling Centaur to send 11,800 pounds into orbit, 2,900 pounds on a lunar trajectory, or 2,100 pounds on an interplanetary-probe mission.

Burner II is a solid-propellant upper-stage booster, with a launch weight of only 1,440 pounds. Its 10,000-pound-thrust Thiokol motor enables Burner II to place payloads of up to 5,000 pounds in orbit. A IIA second stage can be added, consisting of another Thiokol motor weighing only 524 pounds but increasing total thrust to 18,800 pounds. Teamed with an Atlas booster, Burner IIA can put a satellite in synchronous earth orbit.

The Missiles

Minuteman



Titan II

The basic weapon of the US deterrent arsenal is the Boeing **Minuteman** LGM-30 intercontinental ballistic missile. The first Minuteman units were operational in December 1962, and the 1,000-missile force has been operational since 1967. Minuteman III (LGM-30G) continues in production to replace older Minutemen toward a goal of 550 LGM-30Gs (Minuteman III) and 450 LGM-30Fs (Minuteman II). A force-modernization program in progress includes upgrading silos against nuclear blast and radiation effects, modifying LGM-30Fs to withstand radiation effects in flight, and continuing the Command Data Buffer Program which permits rapid retargeting of LGM-30G missiles. Meanwhile, the Army's Safeguard system is designed to protect launch sites in North Dakota, Montana, Missouri, and possibly Wyoming from enemy missile attack.

Minuteman III employs a more powerful third-stage booster, enabling it to carry the General Electric Mark 12 MIRV (Multiple Independently Targeted Reentry Vehicle). Range has been increased from 6,300 miles in the earlier models to 8,000 miles, and launch weight from 69,000 pounds to 76,000 pounds. Thrust of the first-stage Thiokol motor is 170,000 pounds and that of the Aerojet-General second stage is 65,000 pounds. Early Minuteman models employ a Hercules third stage with 35,000 pounds of thrust; the G model's third stage is built by Aerojet-General.

Augmenting the Minuteman force are six squadrons of **Titan II** (LGM-25C) missiles, totaling 54. The two-stage Titan II, on which Martin Marietta is prime contractor, uses storable-liquid propellant, but can be fired in less than a minute. Its thrust, range, and warhead size exceed those of the Minuteman. Titan II is the only US land-based ICBM capable of reaching targets deep in Red China.

The Minuteman and Titan II are USAF's only surface-to-surface missiles.

The Air Force's only surface-to-air missile, which resembles an unmanned interceptor aircraft, is the Boeing **Bomarc B** (CIM-10B). This winged missile is launched by a 50,000-pound-thrust Thiokol booster, then flies under radar-homing guidance to its target, propelled at Mach 3 speed by two 12,000-pound-thrust Marquardt ramjet engines. Launch weight is 16,000 pounds and range 440 miles. Its warhead is nuclear. Bomarc B is operational at five sites in the US and at two sites of the Canadian Defense Forces.

Falcons

All other Air Force missiles are airborne, designed for use against air or ground targets.

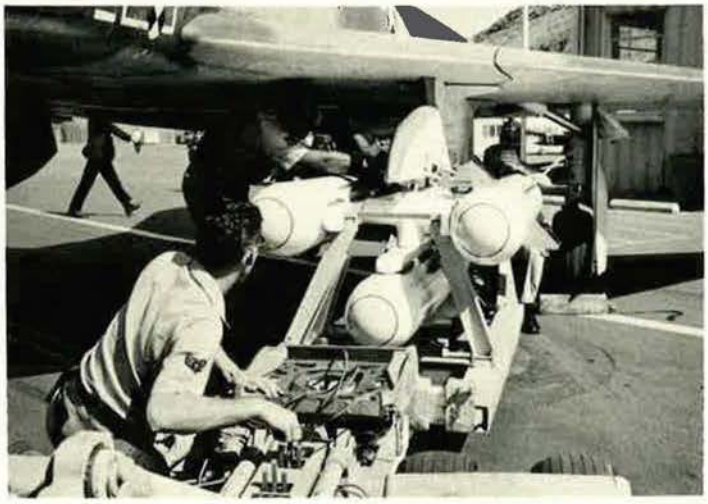
Foremost among its air-intercept missiles (AIM) are those of the **Falcon** family. The Hughes Falcon was USAF's first air-to-air guided weapon, and it is standard equipment on US all-weather interceptors. The family includes three standard Falcons, AIM-4A, C, and D; two Super Falcons, AIM-4F and -4G; a nuclear Falcon, AIM-26A, plus a nonnuclear counterpart, AIM-26B; and the long-range AIM-47A.

Launch weight of the standard Falcons is about 120 pounds. Powerplant is a 6,000-pound-thrust Thiokol motor, giving the missile a speed above Mach 2

Bomarc

Bullpup

Genie



Maverick

and a five-mile range. The -4A is radar guided, while the C and D employ infrared guidance. Of the Super Falcons, the F employs radar guidance, the G infrared. They are equipped with a two-stage Thiokol rocket, giving them higher speed and ceiling, and a seven-mile range. Launch weight is 150 pounds.

The nuclear-tipped AIM-26A is similar to the Super Falcons except that its diameter measures 11 inches, compared to 6½ inches for the -4F and G. Its range and speed are comparable to the standard Falcons.

Biggest and fastest of the family is the AIM-47A, not yet operational but available to arm a new USAF interceptor. It is 12 feet long, 13 inches in diameter, and weighs 800 pounds. Powered by a Lockheed Propulsion liquid-propellant rocket motor, it flies at Mach 6, with a range of 100 miles and has a ceiling close to 100,000 feet.

Two other operational air-to-air missiles are the Sidewinder and Sparrow III, both initially developed by the Navy. The **Sidewinder** (AIM-9) has been built by both Philco and General Electric under direction of the Naval Weapons Center, which originated the design. Powered by a single-stage solid-propellant rocket produced by the Naval Propellant Plant, it uses either heat-seeking (AIM-9B, D, E) or semiactive radar (AIM-9C) guidance to attack its target with a conventional warhead at ranges up to two miles, or slightly greater for C and D models.

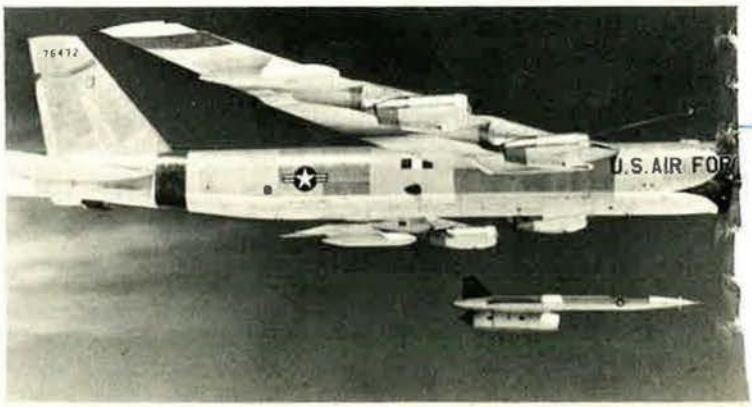
The Raytheon **Sparrow III** (AIM-7E) differs from other air-to-air missiles in that it can be launched from an oblique direction, homing on its target by semiactive radar over a range of up to 15 miles and Mach 3 speed. It is substantially bigger and heavier than the Sidewinder or Falcon, measuring 12 feet long and weighing 450 pounds. Two new versions are in test—the AIM-7F with a more powerful warhead and increased range, and the -7G, intended for use in the F-111.

Still in use aboard F-106 and Air National Guard F-101B interceptors is the AIR-2A **Genie,** an unguided rocket with a nuclear warhead. The McDonnell Douglas weapon is 9 feet long, 17 inches in diameter, weighs 800 pounds, and owes its Mach 3 speed to a 36,000-pound-thrust rocket produced both by Aerojet-General and Thiokol. Range is six miles.

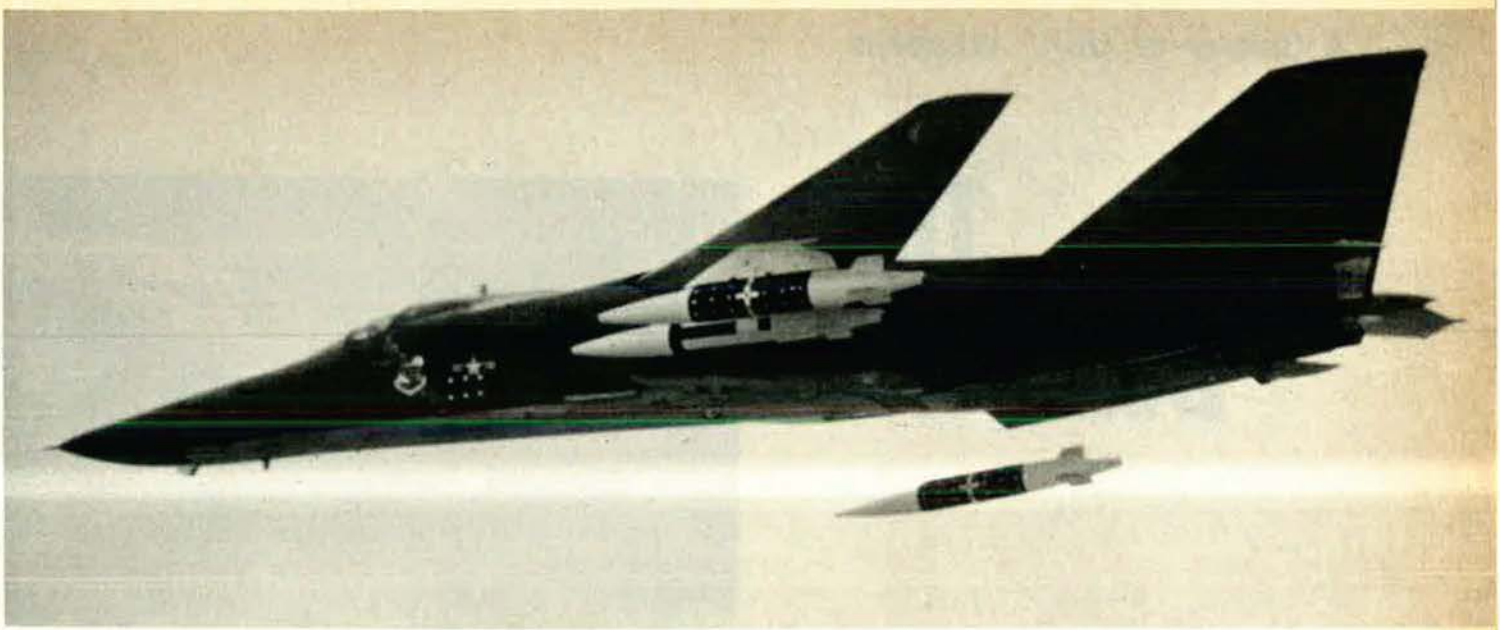
In concept-formulation stage is an air-to-air missile intended for the B-1 bomber for defense against enemy interceptors. The requirement may be met by an updated version of an existing air-to-air weapon.

Air-to-ground missiles (AGM) represent the largest category in the Air Force arsenal, some of which have been developed and are used by the Navy and Marine Corps.

Oldest in service is **Bullpup** (AGM-12B and C), initially built by Martin Marietta but now produced by Maxson Electronics. AGM-12B, called Bullpup A, has a launch weight of 571 pounds, including a 250-pound conventional warhead. Powered by a Thiokol 12,000-pound-thrust rocket, giving it a speed of 1,200 mph and a two-mile range, it is guided to the target by the pilot, who must track it until impact. AGM-12C, Bullpup B, is substantially bigger, weighing 1,750 pounds with a 1,000-pound warhead and three-mile range, boosted by a 33,000-pound-thrust Thiokol motor. Guidance is the same as in Bullpup A. Martin



Hound Dog



SRAM

Marietta also produces the AGM-12D with a nuclear warhead, and the -12E featuring a high fragmentation conventional warhead.

Supplementing Bullpup, particularly in attacks against heavily defended targets, is the Martin Marietta **Walleye.** It is 11 feet long and weighs 1,100 pounds. Once the pilot visually sights the target and releases Walleye, he may take whatever evasive action is necessary while a TV camera in the missile's nose keeps it on target as it glides unpowered to its mark. Hughes is overall coordinator for Naval Air Systems Command on Walleye components. A larger Walleye, nicknamed Fat Albert, is in development.

Similar to Walleye, but powered by a Thiokol rocket, is the TV-guided Hughes AGM-65A **Maverick** for use on F-4D/E and A-7D aircraft. DoD is asking $87 million to begin production in FY 1972. The eight-foot-long missile weighs 500 pounds and will be carried in clusters of three, for use against tanks, artillery, and close-in enemy positions.

The category of unpowered air-ground missiles includes a "Hobo" kit employed to convert standard free-fall bombs into guided weapons by adding elements to the bomb's nose and tail. The nose attachment may contain a TV camera or laser receiver matched to equipment in the aircraft cockpit, while the tail section controls fins that fly the bomb to its target. Other systems not dependent on pilot control, such as infrared or radar sensors, can also be used. Hobo is being developed by North American Rockwell's Columbus Division, with Chandler Evans Division of Colt Industries furnishing control systems.

A separate category of air-to-ground missiles are antiradiation missiles (ARM) designed to attack radar-guided antiaircraft weapon sites. The AGM-45A **Shrike** was extensively used against SAM sites in North Vietnam. Its weakness is that it can be thrown off course if the site's radar signal is shut off, even momentarily. An improved model, the AGM-78A **Standard** ARM, has been developed by General Dynamics/Pomona to overcome that handicap. Since it costs appreciably more than the Shrike—its launch weight is 1,300 pounds, compared to Shrike's 390 pounds—the latter will continue to be used against less-sophisticated radar targets.

USAF's only operational strategic air-to-ground missile is the AGM-28B **Hound Dog,** carried by the B-52G and H as a standoff nuclear weapon. Built by North American Rockwell, the stubby-winged Hound Dog weighs more than 10,000 pounds. It is 42½ feet long, 28 inches in diameter, and has a 12-foot wingspan. Powered by a Pratt & Whitney J52 turbojet of 7,500 pounds of thrust, it flies at Mach 2 with a range of 600 miles. Its inertial guidance is built by NR/Autonetics.

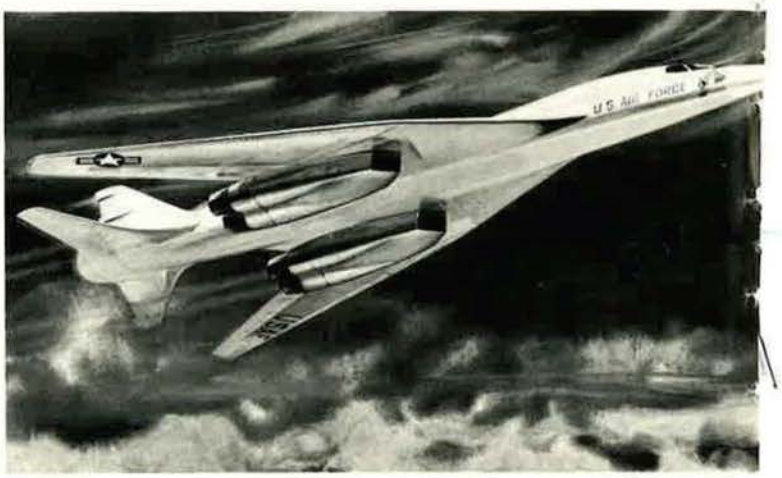
To provide improved penetration capabilities for B-52 and FB-111 bombers, DoD is requesting $359 million in FY 1972 to complete development of the Boeing AGM-69A **SRAM** (short-range attack missile), to begin quantity production, and to modify B-52s and FB-111s to carry them. Each B-52 can carry 20 SRAMs and each FB-111 six. Fitted with a nuclear warhead and powered by a Lockheed solid-propellant rocket motor, the supersonic SRAM will be launched against a target at a range of up to 100 miles, enabling the bomber to avoid antiaircraft defenses. SRAM is 14 feet long, 18 inches in diameter, and weighs 2,200 pounds.

The B-52 also employs the McDonnell Douglas ADM-20C **Quail,** an unarmed decoy missile simulating a B-52 in flight. Quail is 13 feet long, with a wingspan of 5 feet 4 inches. It flies at high subsonic speed, powered by a General Electric J85 engine, with a range of 350 miles.

In development to replace Quail is the **SCAD** (subsonic cruise armed decoy). Congress deleted funds for SCAD in FY '71, but DoD has budgeted $10 million in FY '72 to continue its development to counter possible Soviet air defenses of the late 1970s.

Quail

The Bombers



B-1

FB-111

It will be the "early 1980s" before the North American Rockwell **B-1** supersonic **bomber** could begin to replace the **Boeing** B-52 and General Dynamics FB-111 in the USAF inventory, according to Defense Secretary Laird.

In his message to Congress in March, Secretary Laird emphasized that "we will not commit the B-1 to production before development is completed. . . . This will permit a B-1 operational capability by the early 1980s, if we choose at a later date to proceed into production."

North American Rockwell Corp. was awarded a $1.35 billion contract last June to build seven airframes, with General Electric receiving a parallel contract for 40 GE9 engines. These contracts have since been "restructured" to call for only three flight-test aircraft, one static-test airframe, and major component subsections, and 27 engines. First flight is scheduled for the spring of 1974.

Two-thirds the size of the B-52 but able to carry a larger payload, the B-1 will be able to operate from runways substantially shorter than those required by the B-52. Its variable-sweep wings will give it top speed of more than Mach 2 at altitude and high subsonic speed on the deck. The unrefueled range is intercontinental. The maximum takeoff weight is between 350,000 and 400,000 pounds. It will employ a four-man crew —two pilots and two systems operators.

The number of B-52s in the SAC inventory now stands at about 450, made up almost entirely of B-52G and H models, as three more SAC squadrons are being deactivated with the phase-down of the Vietnam War. G and H models carry two Hound Dog missiles each, and their range of 7,500 and 9,000 miles respectively is substantially higher than that of earlier versions. They are powered by eight Pratt & Whitney engines, the G employing J57s of 13,500 pounds of thrust each, and the H using 17,000-pound-thrust TF33 turbofans.

To improve survivability of the B-52 force, the bombers are being dispersed over a number of bases, generally further inland than before; the B-52s and their KC-135 tanker support are being modified with a "rapid-start" capability to get them airborne sooner in an attack.

SAC's 509th Bomb Wing at Pease AFB, N.H., reached its full complement of 32 **FB-111** bombers in April, to be joined later this year by the 380th Wing at Plattsburgh AFB, N.Y., also with 32. The remaining 12 FB-111s on order will be used to train crews at Carswell AFB, Tex., and to cover attrition.

In its first competitive appearance last fall in SAC's annual bombing meet, the FB-111 took top honors in bombing accuracy.

Using eight wing pylons as well as its bomb bay, the FB-111 can carry a maximum conventional weapons payload of almost 40,000 pounds. Fully loaded, it is limited to subsonic speed because its wings cannot be swept when pylons are used. With external pylons jettisoned, its top speed is Mach 2.2, powered by two Pratt & Whitney TF30-7 turbofans with afterburners, producing more than 20,000 pounds of thrust each. It is 75 feet 6 inches long, and unswept wingspan is 70 feet. Maximum takeoff weight is 119,243 pounds.

Two other bomber types remain in the active inventory, performing specialized roles. They are the Martin Marietta **B-57 Canberra** and McDonnell Douglas **EB-66 Destroyer.** Latest Canberra model is the B-57G, employed in Southeast Asia, pri-

marily against enemy truck traffic. It features sensors to find and hit moving targets at night and in bad weather. A bulbous nose housing this equipment cuts down on speed and range, though it carries the same four-ton bomb load of previous B-57 bombers and four .50-caliber guns or 20-mm cannon. It is powered by two Wright J65 turbojets of 7,200 pounds of thrust.

Three reconnaissance models also in service are the RB-57A and F and EB-57D. The RB-57F, modified by General Dynamics, has a wingspan of 122 feet, almost double that of the B-57G. It is powered by two Pratt & Whitney 18,000-pound-thrust TF33-11 turbofans, plus two P&W J60-9 turbojets, each producing 3,300 pounds of thrust.

The **EB-66** electronic-jamming aircraft is almost the only version remaining of a once-sizable fleet of B-66 light bombers and RB-66 and WB-66 reconnaissance craft. Derived from the Navy A-3 Skywarrior, the EB-66 is powered by two Allison J71s of 10,200 pounds of thrust. It is 75 feet long with wingspan of 72 feet 6 inches. Top speed is 650 mph, and maximum weight is 80,000 pounds.

In a class by itself is the **SR-71,** built by Lockheed, a Mach 3 aircraft operated by the 9th Strategic Reconnaissance Wing at Beale AFB, Calif. Little information has been released on its performance or mission, but it is said to fly at altitudes above 70,000 feet at speeds over Mach 3 in performing reconnaissance missions. The SR-71 has been operational in SAC since January 1966.

It employs a pair of Pratt & Whitney J58 engines with thrust estimated at 32,500 pounds with afterburner. Overall length is 107 feet, and wingspan is 55 feet 7 inches.

B-57

EB-66

SR-71

The Fighters

F-15

RF-4C

Unlike the B-1 bomber program, which to date is confined to R&D status, USAF's new **F-15** air-superiority fighter program is moving toward full-scale production. "We expect to begin F-15 procurement in FY 1973," said Secretary Laird in his posture statement, "and by FY 1976 to start replacing F-4 squadrons with F-15 squadrons in the active forces."

McDonnell Douglas is building the single-place, fixed-wing, twin-turbofan, all-weather fighter under a $1.15 billion contract for an initial 20 aircraft. The 40,000-pound-class F-15 will possess a "significant advantage in maneuverability over future enemy fighter threats," Secretary Laird said. Two Pratt & Whitney advanced-technology engines, with a thrust of about 30,000 pounds each, will give it a higher thrust-to-weight ratio than any other known design, enhancing maneuverability throughout its flight regime. Armed with medium- and short-range air-to-air missiles and an internal rapid-firing 25-mm cannon, its primary missions will be to conduct fighter sweeps, escort other aircraft, and maintain combat air patrols. Hughes won a subcontract for its lightweight target-acquisition radar and head-up display. USAF hopes to get as many as 700 F-15s over the life of the production run.

Some 1,400 McDonnell Douglas **F-4 Phantom IIs** are in service with the Air Force in the US and overseas, and Phantoms will be around for years. Production is tapering off, with only 36 F-4Es and 12 RF-4Cs to be ordered in FY 1972, but deliveries on prior contracts are continuing and, as newer models are accepted, older versions will be shifted to the Air National Guard. The ANG will have one F-4 fighter squadron and four RF-4C reconnaissance units by the end of FY 1972, with more Phantoms scheduled to replace older planes in succeeding years.

The newest Air Force Phantom is the F-4E, with an internal M61 20-mm cannon and 17,900-pound-thrust General Electric J79-17 engines. The F-4C, F-4D, and RF-4C are all powered by the J79-15 with 17,000 pounds of thrust. Top speed is about Mach 2.5 in clean configuration. The Phantom is 63 feet long, with a wingspan of 38 feet 4 inches, and it can carry a 14,000-pound weapons payload, with a gross takeoff weight of 58,000 pounds.

The General Dynamics **F-111** seems to be coming out of its year-long cold-chamber proof load tests in fine shape and is taking its place in increasing numbers with Tactical Air Command squadrons and with USAFE's 20th Tactical Fighter Wing at RAF Upper Heyford, England. The present total stands at more than 400 fighters in F-111A, D, E, and F versions, to equip a total of four wings. No further F-111 production has been authorized. There are 141 F-111A models in the inventory. Engine-inlet problems, which initially plagued this model, appear to have been corrected.

The F-111E production involved 94 aircraft; the D model, 96 units; and the F version, 70 aircraft. The A, D, and E are powered by TF30-3s, of 20,000 pounds of thrust each, while the advanced TF30-P-100, rated at 25,000 pounds of thrust, is used in the F models.

The F-111D is equipped with the highly sophisticated Mark IIA avionics system to give this model exceptional all-weather interdiction capabilities.

The Fairchild Hiller **F-105 Thunderchief**, or Thud, is fast disappearing from the active force, except for the two-place Wild Weasel version still being flown in Southeast Asia against North Vietnamese SAM missile and radar-guided gun sites. By the summer of

F-111

F-106A

1972, the Air Guard will have picked up five squadrons of F-105s, and 17 squadrons of F-100 Supersabres, which are becoming available as regular units acquire newer fighter and attack aircraft. In turn, the Guard will retire the last of its Korean War vintage F-84 and F-86 fighters.

Aerospace Defense Command's dwindling manned interceptor force now totals only 200 planes, all General Dynamics **F-106 Delta Darts,** the last three **F-101B Voodoo** squadrons having been closed down and their planes turned over to the ANG early this year. Sixty percent of ADC's manned force is now furnished by the Guard, operating 10 squadrons with **F-102 Delta Daggers** and six with F-101Bs.

RF-101 reconnaissance Voodoos have also left active duty, replacing RF-84s and RB-57s in the Air Guard. Modifications are still being made to improve the Delta Dart. In addition to an air refueling capability added last year, the F-106 is now getting a redesigned canopy to improve pilot vision. A rapid-firing 20-mm gun to supplement its missile armament and give it a greater low altitude and close-in kill capability is under consideration.

As a possible replacement for the F-106, Secretary Laird is reported considering an interceptor version of the **F-15** or the Navy's Grumman **F-14 Tomcat.** The Lockheed YF-12A is apparently no longer a contender.

Two other US-designed fighters are widely flown around the world, but not in USAF. They are the Lockheed **F-104 Starfighter**, retired by USAF and down to a single squadron in the Puerto Rican ANG, and the Northrop **F-5 Freedom Fighter,** strictly an export product, with 15 foreign customers.

Northrop won the Air Force's International Fighter competition with a design named the **F-5E**. The plane is intended for US allies in the Pacific—South Vietnam, South Korea, Nationalist China, and Thailand—and not for USAF itself. The basic requirement specified by the Air Force in inviting proposals was that it should be able to outfight a MIG-21 over its home country. Comparatively simple maintenance was another requisite. An extra plus for Northrop's entry was that it is compatible with the F-5A, already being flown in most of those countries. The F-5E is powered by a pair of General Electric J85-21 engines of more than 5,000 pounds of thrust, compared to the 4,300 pounds of thrust in the F-5's J85-13s. It also features maneuvering flaps and a new fire-control system to operate its M39 guns and Sidewinder missiles.

F-101B

F-105D

F-102

F-5

The Attack and Observation Aircraft

A-7D

Most fighter aircraft in the Air Force inventory have performed attack missions, providing close air support and battlefield interdiction for ground forces. But a separate category of fixed-wing attack aircraft designed primarily to support ground forces was reestablished by the Air Force in the mid-1960s under the impetus of the Vietnam War.

The first of these was the prop-driven McDonnell Douglas **A-1 Skyraider,** a Navy plane brought out of retirement for service in Vietnam because of its 8,000-pound payload capacity, four 20-mm cannon, and long loiter time.

A-1

Successor to the A-1 in the Air Force is the Vought **A-7D Corsair II,** a design also originated by the Navy and employed aboard carriers in A-7A, B, and E versions. The A-7D entered USAF's operational inventory in 1969. DoD's FY 1972 budget requests $208 million to buy 97 Corsair IIs, which Secretary Laird said "will complete our planned procurement of A-7Ds and provide for a force of three A-7 wings in the Air Force." A total of 290 A-7Ds had been ordered in prior years.

The A-7D has the payload and loiter capability to perform close-support missions, but it is designed primarily for relatively long-range, day interdiction missions in a semipermissive air environment. It can carry up to 15,000 pounds of bombs or rockets on six wing pylons and two fuselage stations, plus an internal Vulcan 20-mm gun that fires at the rate of 6,000 rounds per minute. Maximum takeoff weight is 40,000 pounds.

In December 1970, the Air Force made competitive prototype development awards for the **A-X,** a close-air-support aircraft optimized for "maximum target destruction and minimum attrition."

The Northrop Corp. was awarded a $28.9 million contract to build two copies of its A-X design, the **A-9** high-wing, single-tail design employing two 7,200-pound-thrust turbofans developed from the Lycoming T55-11 gas turbine engine. Fairchild Hiller Corp. received $41.2 million for its design, the **A-10A,** which features a low-wing, twin-tail configuration, powered by a pair of General Electric T34 turbofans of 9,000 pounds of thrust each.

Air Force specifications call for a plane able to carry up to 16,000 pounds of ordnance in flights of up to four hours. Its STOL capability will permit its use from battlefield-area airstrips as short as 1,000 feet. Top speed will be above 450 mph, and its high thrust-to-weight ratio, combined with low wing loading, will give it a wide speed range and maneuverability. Its survivability is further enhanced by use of armor around the cockpit and critical components, backup flight controls, and a special "go-home" fuel reserve in self-sealing tanks. The flyoff competition is scheduled to begin in the summer of 1972.

The Cessna **A-37 Dragonfly,** a close-support aircraft developed from the T-37 trainer, proved useful in South Vietnam but is too short-legged and too light for USAF duty as a first-line attack plane. A-37s operated by the Air Force in Vietnam have been turned over to the South Vietnamese Air Force, while those in the US are being transferred to the Air Force Reserve and Air National Guard to equip four and two squadrons, respectively. With a gross weight of only 14,000 pounds, the A-37 carries up to 6,000 pounds of external stores on eight wing pylons, though two are normally reserved for fuel tanks to boost its range. It is powered by two 2,700-pound-thrust General Electric J85s, giving it a top speed of 450 mph.

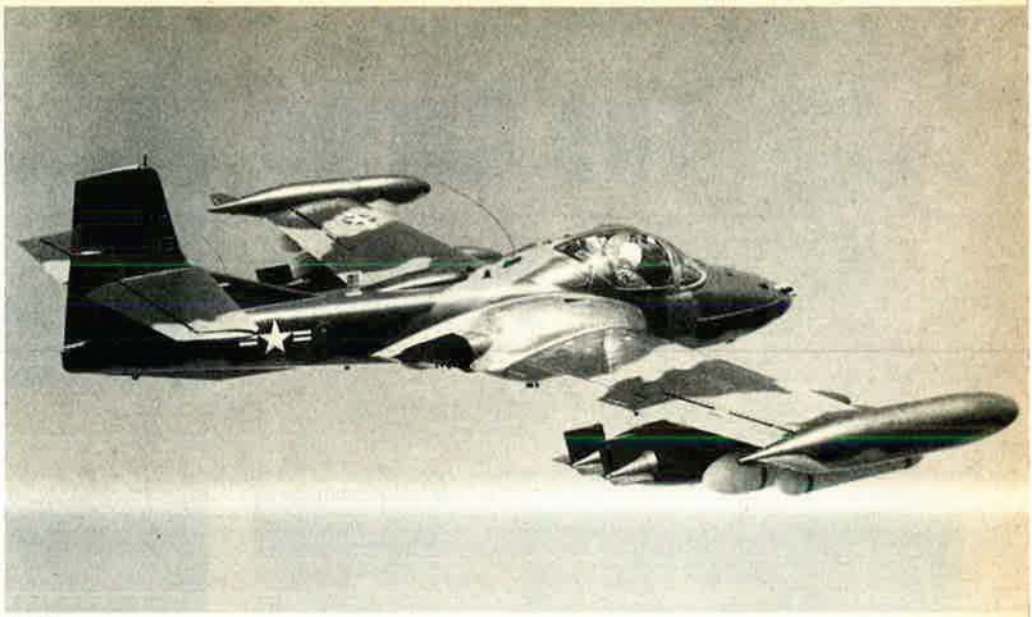
USAF's attack category includes three

cargo planes converted to gunships for close-support operations in Vietnam. They are the venerable McDonnell Douglas **AC-47 Spooky**, the Fairchild Hiller **AC-119 Shadow**, and the Lockheed **AC-130**. All are fitted with side-firing weapons—three 7.62-mm Miniguns in the AC-47, four in the C-119, and four 7.62-mm guns and four 20-mm Gatling-type cannon in the AC-130.

Though listed as an observation plane, the North American Rockwell **OV-10 Bronco** possesses a limited attack capability as well, carrying up to 3,600 pounds of external stores. The twin-tailed Bronco is equipped with two Garrett AiResearch T76 turboprops of 715 shaft horsepower, giving it top speed of 280 mph and a range of 850 miles. Takeoff weight of the attack version is 14,466 pounds, just above that of the A-37. The OV-10, however, can also be used as a light cargo plane, hauling up to 3,200 pounds or six paratroopers.

USAF's primary observation craft is the Cessna **O-2A**, a twin-tail, off-the-shelf version of the Cessna 337 Super Skymaster. It is powered by two push-pull Continental IO360D piston engines, one mounted conventionally in the nose, the other between the tail booms at the rear of the four-place cabin. Speed is 180 mph, and range 1,300 miles. Wing pylons carry up to 1,400 pounds of external stores, including a 7.62-mm Minigun. An O-2B version is used as a leaflet-dropping psychological-warfare craft.

The O-2 is superseding the Cessna **O-1 Bird Dog**, a light, 2,400-pound gross weight two-seater, using a 213-horsepower Continental O470 six-cylinder engine. Its only armament is target-marking smoke rockets mounted under its high wing, and whatever weapons the pilot may carry.



A-37

AC-119

O-2A

A Gallery of USAF Weapons

The Cargo Planes

C-5A

C-133

C-141

USAF has a greater variety of transports in active use than any other type of aircraft.

At one extreme is the ancient **C-47 Gooney Bird,** dating from the 1930s, still operating throughout the Air Force and which, as noted earlier, has embarked on a rejuvenated career as the AC-47 Spooky gunship in Vietnam. It is, incidentally, the most widely employed military aircraft in the world, flying in the air forces of more than 60 nations.

At the other end of the transport spectrum is the Lockheed **C-5 Galaxy.** Military Airlift Command will operate four C-5 squadrons. Two—at Charleston AFB, S.C., and Travis AFB, Calif.—are already flying the Galaxy. A squadron at Dover AFB, Del., was expected to get its first C-5 by the end of April, and the fourth squadron will be added at Travis, thus basing two squadrons on each coast. Some 65 C-5s are scheduled to be delivered by the end of FY 1972, with the final 15 following in FY 1973. (One C-5, the first to fly, was destroyed in a fire at Lockheed's Marietta, Ga., plant.)

The C-5 is 247.8 feet long, with a wingspan of 222 feet 8 inches. Powered by four General Electric TF39 turbofans, each with 41,000 pounds of thrust, the C-5 can cruise at 530 mph. Maximum payload is 265,000 pounds over 2,875 miles; trading fuel for cargo, the C-5 can carry 100,000 pounds for a distance of 6,325 miles. Nominal gross takeoff weight varies between 728,000 and 764,500 pounds, depending on the mission.

With arrival of additional C-5s, MAC is phasing out the last of its McDonnell Douglas **C-133 Cargomasters** this summer.

Mainstay of the MAC military airlift fleet is the Lockheed **C-141 StarLifter.** Procurement of C-141s has ended, and, by the end of FY 1972, MAC will have received a total of 275 StarLifters, equipping 13 squadrons. In overseas deployments, the C-5 and C-141 complement each other, the Galaxy handling heavy equipment, the StarLifter carrying personnel and lighter cargo. The C-141 is 145 feet long; wingspan is 160 feet. Powered by four 21,000-pound-thrust Pratt & Whitney TF33-7 turbofans, it can carry a 60,000-pound payload 4,600 miles nonstop at 500 mph, or lesser weights over longer distances. Gross takeoff weight is 318,000 pounds.

A dozen McDonnell Douglas **C-9 Nightingale** aircraft, military counterpart of the DC-9 airliner, have replaced the McDonnell Douglas **C-118** (DC-6) and General Dynamics Convair **C-131 Samaritan** on domestic aeromed routes, and nine more C-9s are being acquired for routes in Europe and the Pacific. The DC-9 is also in the running, along with the Boeing 737, as a replacement for USAF's T-29 navigator trainer *(see "Trainers").* Powered by two Pratt & Whitney JT8D-9 turbofans of 14,500 pounds of thrust, the C-9 carries 30 litters or 40 ambulatory patients over a range of 2,200 miles at 520 mph. It is 119 feet 4 inches long, wingspan is 93 feet 5 inches, and takeoff weight is 108,000 pounds.

C-118s and C-131s continue in service as utility transports in the US and overseas. Some C-131s have been uprated to C-131H designation by replacing their Pratt & Whitney R2800 piston engines with 3,750-shp Allison 501-D13 turboprops, raising crusing speed to 340 mph.

Completing USAF's pure-jet transport force are the KC-135 tanker, a variation of the Boeing 707; the VC-137 Presidential transport; and the Lockheed C-140 JetStar. More than 600 KC-135s were built for the Air Force. A few have been converted to EC-135 configuration, serving Hq. USAF and Strategic Air Command as airborne command posts, and some C-135 transport versions remain in service for radar and weather reconnaissance (RC-, WC-135). The **KC-135B** is powered by four 18,000-pound-thrust Pratt & Whitney TF33-9 turbofans. It is 136 feet long with span of 130 feet 10 inches. Speed is 600 mph, range 5,000 miles, and gross takeoff weight 297,000 pounds.

The **VC-137,** known as *Air Force One* when the President is aboard, is derived from the intercontinental Boeing 707-320B, equipped with JT3D turbofans, civilian equivalent of the TF33. The aircraft's performance and dimensions are comparable to those of the KC-135B. The Presidential fleet also includes three VC-137Bs—Boeing 707-120s that have been equipped with JT3D engines.

Also part of the White House fleet is the Lockheed **C-140 JetStar** light transport. Of 16 C-140s bought by the Air Force, 11 have been converted to the VC-140 configuration. The other five

SURANCE PROGRAM

HOSPITAL INSURANCE

Pays CASH benefits up to $40 per hospital day for each insured person!

All AFA members — military and civilian — and their families are eligible.

OTHER BENEFITS

Protected AFA members may continue their coverage at the low, group rate to Age 65, or until they become eligible for Medicare, whichever is earlier. Hospitalization for **all** sicknesses and accidents is covered, except for a few standard exceptions listed under "Exclusions."

LIMITATIONS

Hospital confinements separated by less than three months for the same or related conditions will be considered continuations of the same confinement.

Coverage will continue through the life of the master policy unless terminated for whichever of the following reasons occurs first for the protected person: (a) attains age 65; or (b) becomes eligible for Medicare; or (c) AFA membership dues are due and unpaid; or (d) a premium payment is due and unpaid. For dependents, coverage will continue through the life of the master policy unless terminated for whichever of the following reasons occurs first: (a) such dependent ceases to be an eligible dependent; or (b) the protected person's insurance terminates hereunder; or (c) the dependent spouse either attains age 65 or becomes eligible for Medicare; or (d) any required dependent premium payment is due and unpaid.

EXCLUSIONS

The plan does not cover losses resulting from (1) declared or undeclared war or act of war; (2) service in the armed forces of a country *other than the United States;* (3) acts of intentional self destruction or attempted suicide while sane or insane; (4) pregnancy (including childbirth or resulting complications); (5) confinement in any institution primarily operated as a home for the aged or engaged in the care of drug addicts or alcoholics; (6) illnesses for which the insured has received medical treatment or advice or has taken prescribed drugs or medicines within 12 months prior to the effective date of his insurance. Coverage for such pre-existing illnesses will begin after 12 consecutive months during which he is covered under the policy and receives no such medical treatment or advice and takes no such prescribed drugs or medicine; (7) hospital confinement commencing prior to the date the protected person or eligible dependent becomes insured under this policy.

HOW TO APPLY

Fill out the attached application and mail it to AFA with your first premium payment. You may elect to pay premiums either annually or semi-annually.

APPLICATION

AFA EXTRA INCOME HOSPITAL INSURANCE

Underwritten by ***Mutual of Omaha Insurance Co.*** *Omaha, Nebraska*

NAME _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

DATE OF BIRTH _____ CURRENT AGE _____ HEIGHT _____ WEIGHT _____ SEX _____

PLAN OF INSURANCE

MEMBER ONLY	MEMBER & SPOUSE	MEMBER SPOUSE & CHILDREN
☐PLAN A-1	☐PLAN A-2	☐PLAN A-3
☐PLAN AA-1	☐PLAN AA-2	☐PLAN AA-3

METHOD OF PAYMENT ☐Annual ☐Semi-Annual

This insurance coverage may only be issued to AFA members. Please check the appropriate box:

☐I am currently an AFA member.

☐I enclose $7 for annual AFA dues (Includes subscription ($6) to to AIR FORCE/SPACE DIGEST).

I enclose my initial premium in the amount of $_____ (Refer to premium table to determine correct premium amount.)

Please complete this section only if you are requesting coverage for dependents (Limited Family or Family Plan) and list only those persons for whom you are requesting coverage.

FULL NAME	RELATIONSHIP TO AFA MEMBER	SEX	DATE OF BIRTH
	WIFE (HUSBAND)		
	child		
	child		
	child		
	child		
	child		
	child		

In applying for this insurance coverage, I understand and agree that:

1. coverage shall become effective on the last day of the calendar month during which my application together with the proper premium amount is mailed to AFA.
2. only hospital confinements commencing after the effective date of insurance are covered, and
3. any condition for which I or any of my eligible dependents received medical treatment or advice or have taken prescribed drugs or medicine within twelve months prior to effective date of the insurance coverage will not be covered until the expiration of twelve consecutive months of insurance coverage without medical treatment or advice or having taken prescribed drugs or medicine for such condition.

DATE _____ SIGNATURE _____

Application must be accompanied by check or money order. Send remittance to:

INSURANCE DIVISION, AFA, 1750 PENNSYLVANIA AVE., N.W., WASHINGTON, D.C. 20006

Form 2332MGC App. 5-71

Bob Stevens'

"There I was..."

The years have brought us lows and highs
And long endurance in the skies;
Solid missiles, the sonic boom . . .
And the record sheet has lots more room.

POOR ROBERT'S ALMANACK (Vol. 2)

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379th Bomb Gp. Reunion JULY 5-8 Colo Spgs.

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Bob Stevens

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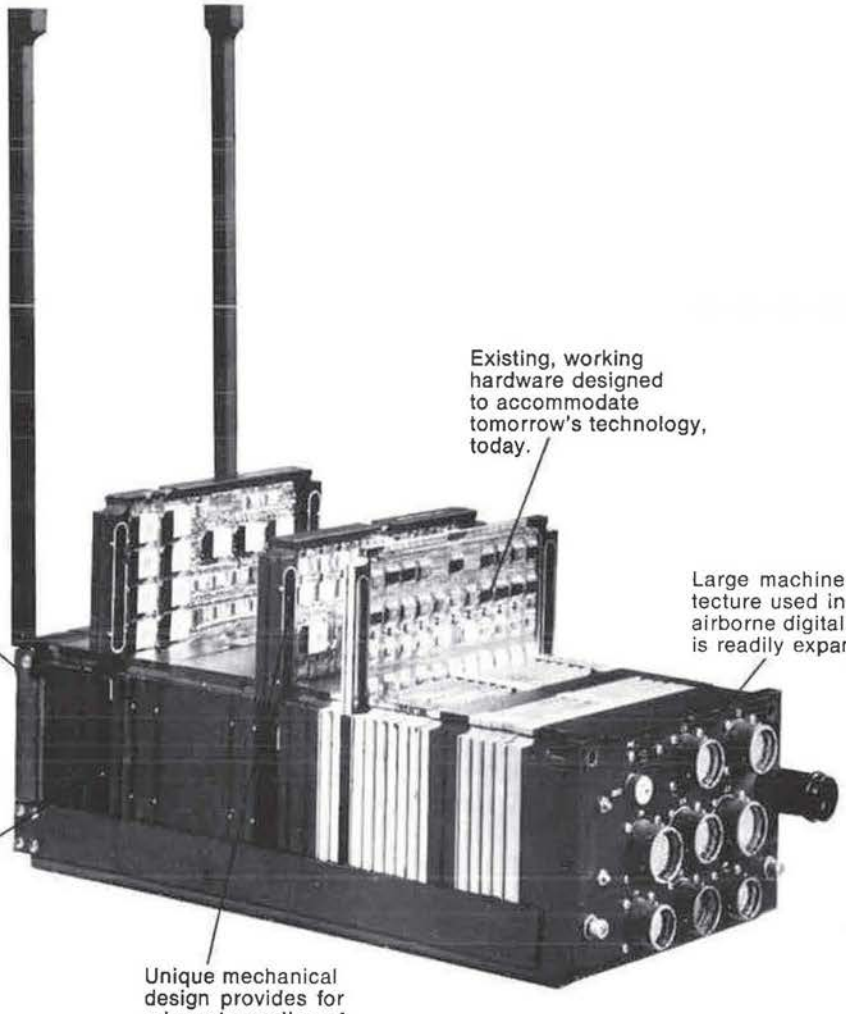

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SINGER
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Typical Characteristics (CPU)	
Number Systems	Binary, floating point and two's complement fixed point
Data words, Floating Point	24 bit mantissa, 8 bit exponents
Data words, Fixed Point	32 bits including sign
Instruction Words	16 bits short, 32 bits long
Instructions	99 total long & short
Address Modes	Direct, indirect, relative, immediate
Average Execution Times For 1.9μ sec memory (LSI)	Add-2.125μ sec, multiply -5.875μ sec Divide -5.875μ sec
Memory words directly addressable	131,072

The new F-15 air superiority fighter: on weight, on cost, on schedule.

As systems manager for the new F-15 air superiority fighter, McDonnell Douglas is solely responsible to the U.S. Air Force under a unique "milestone concept" contract. Simply, it requires that we successfully reach predetermined technical targets before proceeding to the next phase of the program. ☐ Our progress report on the F-15: it's on weight, on performance, on cost and on schedule. ☐ We have completed selection of suppliers for all subsystems – power, avionics, armament and airframe subassemblies. We're cutting metal now. By next year, the F-15 will be a reality. ☐ This isn't the first time McDonnell Douglas has demonstrated its capability to get on with the job and do it right. We've done it in the past with America's first manned spacecraft. We're doing it now for NASA, with our reliable Delta satellite launch vehicles, and for the USAF with C-9A aeromedical jet transports and F-4 jet fighters. We're continuing to build aerospace systems that meet specs – as we've done for our commercial airline customers since 1933. ☐ Whether it's for a military aircraft, a space system, or a commercial product, McDonnell Douglas historically delivers what's needed.

That's more than just good customer relations.

That's sound management.

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